

Are current coastal restoration efforts and long-term plans sufficient to protect Plaquemines Parish from future storms?

Big Ideas

- The Plaquemines Parish Coastal Restoration Plan focuses on the idea of constructing a forested ridge immediately outside the back levees. The forested ridge improvement can reduce the wave action on top of tidal surge to a level below levee height, achieving 100-year flood protection within the protected Parish land.
- The Parish's Plan involves a long-term lease of dredging equipment that would pump sediment from the Mississippi River through pipes across the river levee, under LA 23, and over the back levee into the adjacent marshes. The aim is to create elevated ridges of 75 to 100 feet wide leading up to the back levee, and then plant a series of marsh plants and large cypress trees along the ridge to serve as a speed bump for waves and flooding from storm surges. The Plan differs from the State's plan in the way by which sediment is transported to the outside of the back levee to create new land.

Big Decisions & Questions

- While previous coastal restoration projects/programs have restored wetland habitat, they have had inadequate impact on flood protection for Plaquemines residents based on USACE's Engineer Research Development Center (ERDC) modeling.
- After Katrina, people realized that flood protection against storm surge is lacking due to inadequate levee elevations.
- The USACE along with FEMA found Braithwaite to be so vulnerable that it recommended new homes and business be built 18 feet above ground. Successful coastal restoration can reduce the need for the elevation by five feet.
- The Parish is seeking to have the Forested Ridge Pilot initiative completed simultaneously with the Corps' B-2 levee improvements (December 2011).
- Securing federal grants is critical for funding the high costs of coastal restoration program implementation.

USACE - United States Army Corps of Engineers
FEMA - Federal Emergency Management Agency

Related Big Issues

- ❖ In the past 50 years, Plaquemines Parish has lost over 248 square miles of land, threatening the livelihood, culture, and footprint.
- ❖ The levee system maintained by the Corps of Engineers protects less than 4 percent of the land mass in Plaquemines Parish.
- ❖ Research has indicated that the placement of a "Forested Ridge" adjacent to the outside levee berm reduces wave action, resulting in net reduction of storm surge elevation – ultimately meeting 100-year storm protection requirements.
- ❖ FEMA will begin to develop a new set of flood maps with updated Base Flood Elevations, which set building height elevations that account for improvements to the regional levee system. Plaquemines officials are concerned that without the enhanced protections around the levees prior to FEMA's update, much of the parish could be placed into a high-risk flood zone that could stymie development.
- ❖ What impact will the recovery effort from the Deepwater Horizon Disaster have on other coastal recovery efforts?

Plaquemines Parish MASTER PLAN



President Billy Nungesser

PURPOSE STATEMENT: (1) The coastal restoration programs in Plaquemines Parish must achieve a balance between adequately protecting the valuable wetland habitats and offering flood protection for the residents of the Parish. (2) The program must be aligned with the Federal and State coastal protection objectives. (3) The implementation goals of the comprehensive coastal restoration program include the establishment of a safe and sustainable coast that will protect the community, the Nation's critical energy infrastructure, and fragile natural resources, and the promotion of local development interrupted by the 2005 hurricanes.

EXISTING CONDITIONS

Unlike other parishes that need levee protection in only some areas, Plaquemines Parish is bordered by levees on all sides. The wetlands surrounding Plaquemines Parish are the natural spawning grounds and nurseries for much of the nation's desirable seafood. Wetlands provide natural flood control, hurricane protection and water filtration. For the past five decades, an average of 34 square miles of South Louisiana land, mostly marsh, has disappeared each year (USGS), and as much as 80 percent of the nation's coastal wetland loss occurred in Louisiana.

PLANNED INVESTMENTS

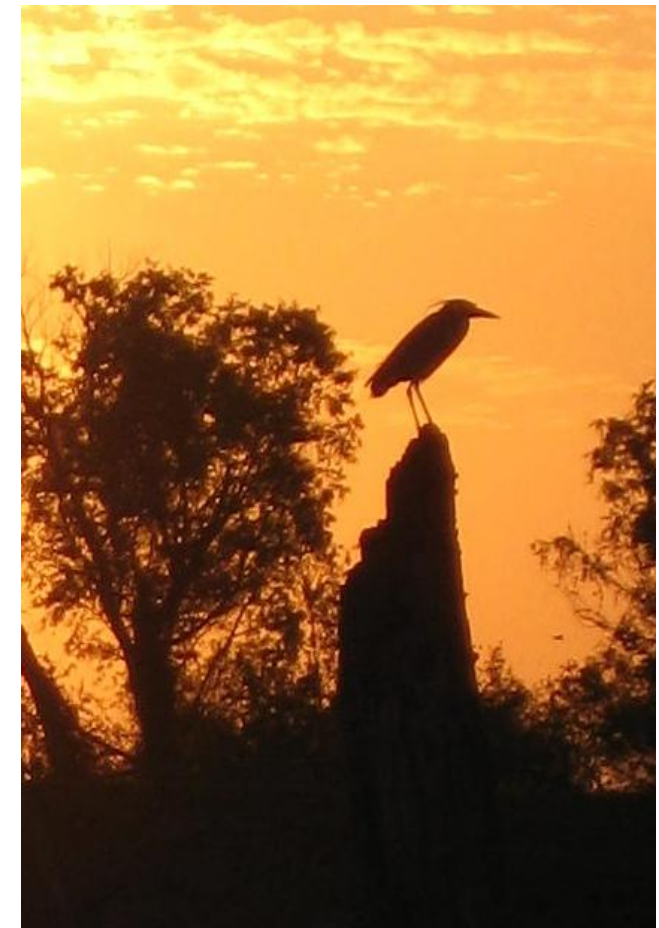
A 12-year Coastal Restoration Plan is currently underway in Plaquemines Parish and involves three phases:

- (1) Phase I is focused on coastal protection for the marsh and parish levees, which begins in 2010 and takes about 2 to 3 years to complete.
- (2) Phase II requires four more years and aims to improve wetland habitats.
- (3) Phase III takes up to 6 years and includes shoreline restoration of barrier islands.

The Parish would need up to \$250 million to install the ridges along the entire stretch of the parish on both sides of the river, and \$45 million to begin the first phase of the projects between Venice and Boothville.

The Parish has started implementation discussions for the planned project with appropriate State and Federal agencies.

(below) Coastal restoration is critical to preserving habitat for various species unique to the Louisiana coast.



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RESTORING OUR COAST & PROTECTING OUR LAND

PLANNED INVESTMENTS

Currently, there is a budget of over \$700 million of projects in Plaquemines Parish committed to coastal restoration (at various stages):

Construction Recently Completed

- Chaland Pass to Grant Bayou Pass Barrier
- Shoreline Restoration and Bay Hoe Wise

Under Construction

- East Grand Terre
- Pelican Island and Pass Le Mer to Chaland Pass
- Lake Hermitage Marsh Creation

In Design

- West Pointe a La Hache Outfall Management

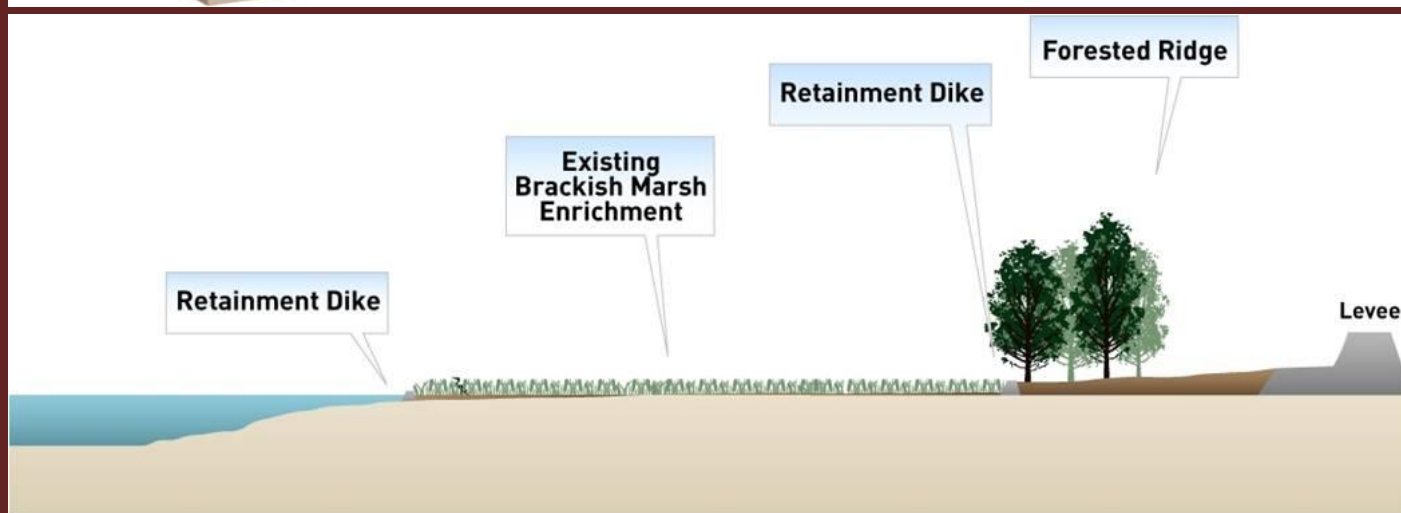
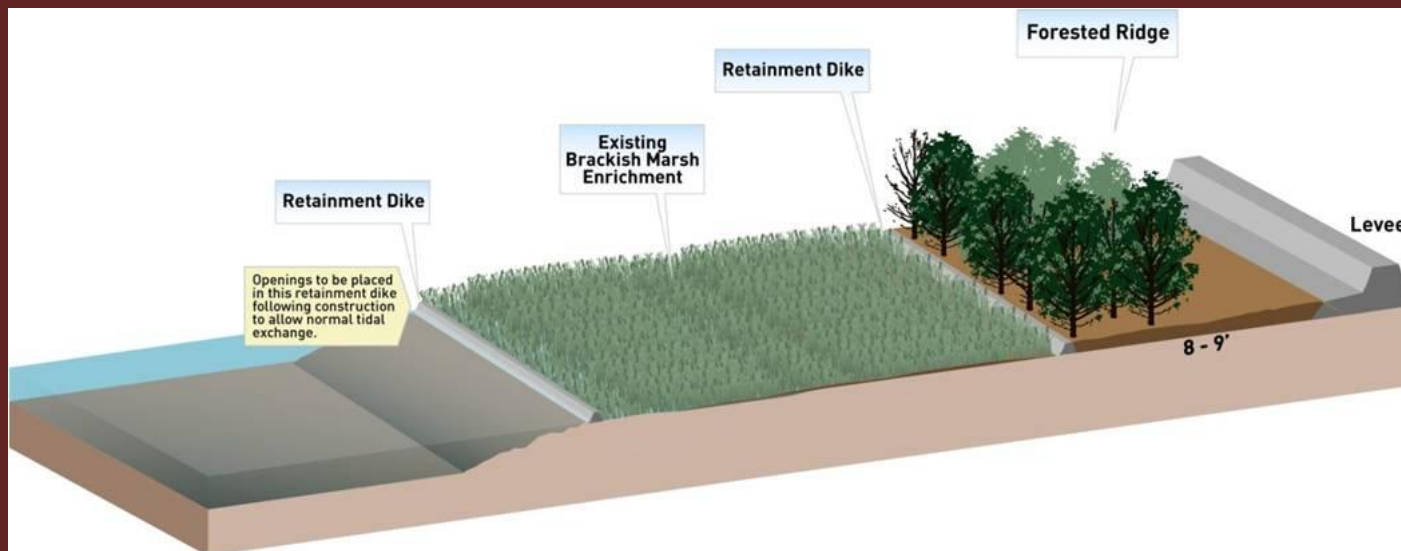
- Bayou Lamoque Floodgate Removal
- Long Distance MS Sediment Pipeline
- Jump Basin Dredging and Marsh Creation
- Scofield Island Restoration
- Bayou Dupont
- Myrtle Grove Modeling Effort
- Fringe Marsh Repair
- Update to Coastal Management Plan
- West Pointe a la Hache Marsh Creation
- Venice Ponds Marsh Creation and Crevasses

- Bohemia MS River Reintroduction Project
- Bertrandville Siphon

Feasibility Investigation

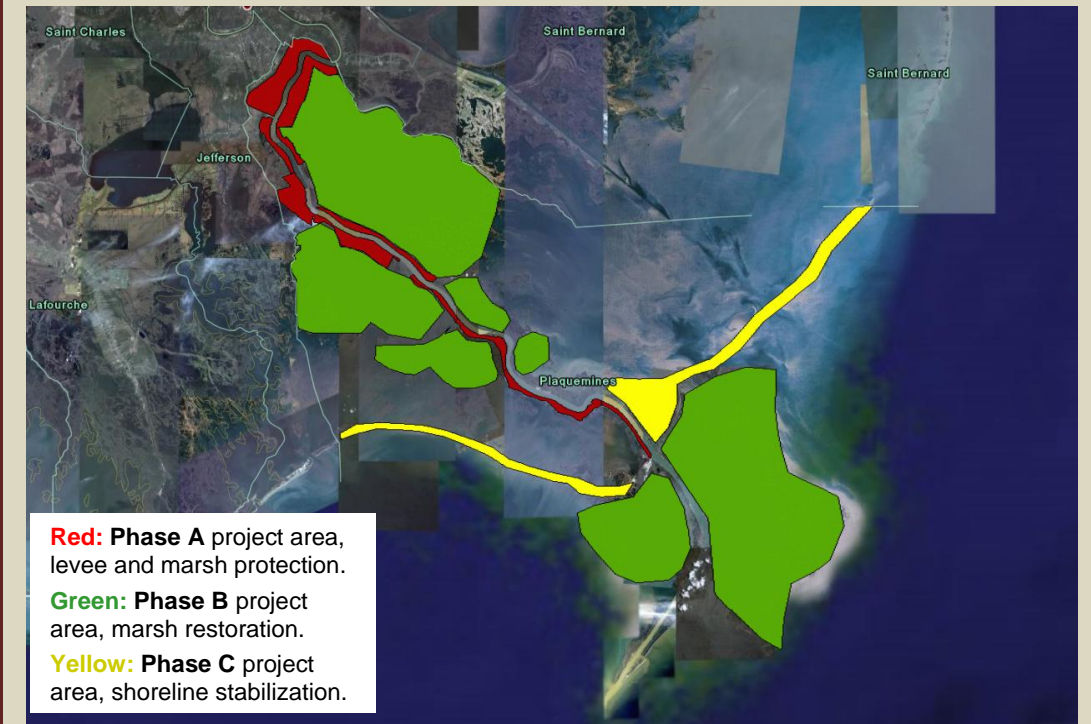
- Fort Jackson Diversion
- LCA Barataria Basin Shoreline
- LCA Diversion at White Ditch
- Mississippi River Delta Management Plan

(below) Forest ridge improvements result in the reduction of the wave action on top of tidal surge to a level below levee height, helping achieve the 100-year flood protection for the protected area in the Parish.



Source: Plaquemines Parish, "Coastal Restoration in Plaquemines Parish", a PowerPoint presentation given by Bill Nungesser, 2010.

Proposed Multi-phase Plaquemines Parish Coastal Restoration Projects



- Red:** Phase A project area, levee and marsh protection.
- Green:** Phase B project area, marsh restoration.
- Yellow:** Phase C project area, shoreline stabilization.

Source: GCR Associates, Inc.

(below) Mississippi River - Diversion of sediment from the Mississippi River to coastal areas is one tactic being used to restore the coast.



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Plaquemines Parish
MASTER PLAN

