Louisiana’s land loss problem is multifaceted, but both human and natural factors have contributed to this crisis. The Mississippi River levee system, built after the Great Flood of 1927 to contain high water, significantly contributed to the problem. The levee system, while protecting communities from high waters, disrupted the natural aquatic flow, drainage, and sedimentation of the wetland hydrology. Construction of canals and waterways for the oil and gas industry further weakened the integrity of these wetlands, compounding the problem as storms, rising sea level, erosion, and subsidence (compacting of the soil) have all taken a toll on coastal Louisiana.

For centuries, periodic overflows of the Mississippi River helped build the Louisiana coast through sedimentation, a natural land-building process that offsets erosion and subsidence. Freshwater and sediment delivered essential sediments to marshes. When the levees became an obstacle to fresh water and sediment flow, wetlands no longer received the nourishment necessary to remain healthy and offset natural processes.

Furthermore, as canals and commercial waterways dissected the wetlands, salt water began to intrude upon and kill existing freshwater vegetation. The root systems of these plants holds the wetlands, salt water began to intrude upon and kill existing freshwater vegetation. The root systems of these plants holds the wetlands. The coastal protection levee system, built after the Great Flood of 1927 to contain high water, significantly contributed to the problem. The levee system, while protecting communities from high waters, disrupted the natural aquatic flow, drainage, and sedimentation of the wetland hydrology. Construction of canals and waterways for the oil and gas industry further weakened the integrity of these wetlands, compounding the problem as storms, rising sea level, erosion, and subsidence (compacting of the soil) have all taken a toll on coastal Louisiana.

The cost of no action...

When close to 2,000 square miles of land disappear from the economic and organic infrastructure of our state and nation, a natural disaster becomes a national crisis. In Louisiana, an entire ecosystem is at a cross-roads between collapse and preservation.

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Between the two extremes - collapse and preservation - lies a natural disaster becomes a national crisis. In Louisiana, an entire ecosystem is at a cross-roads between collapse and preservation. The coast’s estuaries, with their mixture of salt and fresh water, provide essential nursery for shrimp, crabs, and a variety of fish species. Annually, the decibel value of Louisiana’s commercial and recreational harvest is $12 billion dollars, and recreational boating and fishing is a billion dollar industry.

In 2005, shutdowns due to hurricanes Katrina and Rita exposed the dependence of our nation on the Gulf region’s oil, gas, fuel and shipping infrastructure. Costs of one billion dollars per day were experienced by the American public, as oil and gas was unable to reach south Louisiana immediately following the storms.

A pro-active resolution...

To address the need for immediate action, Congress passed the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) in 1990. Sponsored by former U.S. Senator John Breaux of Louisiana, this legislation funds a multi-faceted coastal restoration program that is managed by a task force of five federal agencies and the state of Louisiana. The goal of CWPPRA is to fund coastal restoration projects that create, restore and protect degraded wetlands, and restore natural processes where possible.

Since 1990, more than 156 CWPPRA projects have been constructed or approved for construction. During the 20 year life span of each project, over 525,000 acres of land are expected to be created or protected, and an additional 550,000 acres enhanced.

The goal of CWPPRA is to fund coastal restoration projects that create, restore and protect degraded wetlands, and restore natural processes where possible.

Although current funding levels do not support all of the necessary restoration required for a sustainable ecosystem, CWPPRA continues to address immediate restoration needs while establishing a foundation of strong science, public participation, and agency cooperation that will continue to serve as the cornerstone of future programs.

No time to lose...

An ecosystem of enormous national significance is vanishing into the Gulf of Mexico at an alarming rate. In the past century, Louisiana has lost more than one million acres of wetland from its coast. Every hour one acre, an area roughly the size of a football field, vanishes. Every acre lost, an essential habitat moves closer to extinction. Billions of dollars in seafood production, oil and gas revenue, and commercial shipping will be lost without Louisiana’s coastal wetlands, which provide the basis for a range of coastal activities that are critically important to our nation. In terms of human life and culture, the value of these wetlands is beyond estimation.

As this land disappears, tropical storms and hurricanes like Katrina and Rita strike populated areas with greater force and bring devastation to the many people and businesses that live and depend on this valuable region. Healthy marsh provides a buffer to these storms, and the wetlands’ ability to absorb high water and to slow strong winds is key to the survival of coastal communities. Every year, as wetlands lose ground, these forces hit harder and closer to home.

Approach to the task...

Each year CWPPRA has four regional planning teams that meet and accept projects nominated by the public, or various civic and nonprofit organizations. A core team then selects up to 20 projects and six demonstration projects from the nominated list. In the next step, 10 candidate projects and three demonstration projects are selected for more detailed assessments. Work groups evaluate aspects such as cost, need, feasibility and overall benefit of each project. The Technical Committee then conducts public hearings to receive feedback and make decisions about which projects to fund.

The Technical Committee recommends up to four of the 10 candidate projects (and may also recommend demonstration projects) to the CWPPRA Task Force, which selects projects to receive funding.

Based on careful assessment and consideration, the CWPPRA Task Force selects projects that apply different methods to combat the wetland loss crisis. Some projects redirect fresh water into marshes suffering from saltwater intrusion. Others protect the coast with rock dikes or with improvements to barrier islands, thereby slowing wave action against the shore. Additional projects involve depositing dredged soil into marshes. Several projects include planting new vegetation using species that are proven to thrive in marsh conditions.

The practical hands on work of rebuilding a rapidly changing landscape is in itself a challenging process. To effectively manage coastal restoration, interagency strategies must adapt to a growing body of scientific knowledge and evolving restoration techniques. As a result, consensus building and a comprehensive restoration plan, both goals of the CWPPRA program, are needed to achieve success.

CWPPRA projects have benefited the coast while creating a real-world framework for restoration research and technology. Although validated, CWPPRA is only part of the solution. To meet the challenge of reversing land loss, established techniques and new projects must go to the next level. The catastrophic level of wetland loss in Louisiana requires both landscape scale restoration and greater stakeholder involvement in reaching a common goal - a sustainable coastal Louisiana. CWPPRA has taken the first steps in achieving this goal, and is continuing to provide the necessary framework and immediate response to address Louisiana’s coastal crisis.
Land Area Change in Coastal Louisiana from 1956 to 2006:

Examples of CWPPRA Restoration Techniques:
Between 1990 and 2012, CWPPRA has completed or initiated 148 projects.

- **Black Bayou Culverts**
  - Hydrologic Restoration (CS-29)
  - Project area: 72,378 acres
  - Net benefit after 20 years: $404 million
  - Cost: $7.3 million
  - The construction of Black Bayou Culverts included ten 10 ft. x 10 ft. concrete box culverts under Hwy 384 to help with drainage from Black Bayou to upper Calcasieu Lake. The construction of Hwy 384 altered and effectively blocked the bayou.

- **Pecan Island Terracing**
  - (ME-14)
  - Project area: 3,550 acres
  - Net benefit after 20 years: $442 million
  - Cost: $2.39 million
  - Terracing is one of the newest techniques in coastal restoration and has become an economical approach to direct marsh creation. This project is one of many similar projects in coastal Louisiana. In addition to creating marsh, this project is a 20-foot-wide terrace, which will help sustain the terraces and promote additional marsh growth.

- **Timbalier Island Dune and Marsh Creation (TE-40)**
  - Project area: 663 acres
  - Net benefit after 20 years: $273 million
  - Cost: $473.4 million
  - Without restoration efforts, Timbalier Island was projected to disappear by the year 2050. The objective of this project is to restore the eastern end of Timbalier Island through the direct creation of dune and marsh habitat.

- **North Lake Mechant Landbridge Restoration (TE-44)**
  - Project area: 604 acres
  - Net benefit after 20 years: $604 million
  - Cost: $35.1 million
  - This project illustrates how several techniques may be combined to address restoration needs within an area. Located in Terrebonne Parish, this area suffers from subsidence, saltwater intrusion, and shoreline erosion. Using dredged material, this project will help to turn the tide on wetland loss through marsh creation and shoreline protection.

- **West Bay Sediment Diversion (MR-03)**
  - Project area: 12,910 acres
  - Net benefit after 20 years: $9.831 million
  - Cost: $50.8 million
  - To rehabilitate declining wetlands in West Bay, fresh water and sediment from the Mississippi River are being reintroduced to the area using a conveyance channel. Dredged material from the construction of the conveyance channel has been deposited in the diversion’s outfall area to rebuild the dying wetlands in this large-scale sediment diversion project.

**After the storms...**

Hurricanes Katrina and Rita resulted in the destruction of more than 217 square miles of coastal wetlands during their landfalls. The loss attributed to these storms exceeds the wetland losses that had been projected to occur in the entire State over the next 20 years. Viewed in relation to New Orleans alone, all of the wetlands that were expected to erode in the New Orleans area over the next 50 years were lost in a single day during the landfall of Hurricane Katrina. In addition, Hurricane Katrina destroyed or substantially damaged about one half of the State’s barrier islands along the Gulf of Mexico (Louisiana Coastal Protection and Restoration (LACPR) Final Technical Report, U.S. Army Corps of Engineers, New Orleans District).

For more information on CWPPRA projects, visit: [www.LaCost.gov](http://www.LaCost.gov)