

# What can YOU do?

Whether you live near the coast or far away in a major metropolitan city, Louisiana's coastal wetland loss affects you. From the gas you put in your car, the fuel that heats your home, and the seafood supplied to restaurants and grocery stores, Louisiana's coastal riches are valued and enjoyed nationwide. Public participation is vital to help turn the tide in this national crisis. Everyone is encouraged to take part in this planning, protection and restoration of our nation's coastal wetlands.

Here are a few things you can do to address our nation's wetland loss crisis, and help "Turn the Tide!"

- \* Attend CWPBRA public meetings
- \* Attend Coastal Protection and Restoration Authority (CPRA) meetings
- \* Subscribe to WaterMarks (CWPBRA's news and information publication)
- \* Subscribe to the Breaux Act Newsflash (www.LaCoast.gov)
- \* Study coastal wetland loss and restoration issues
- \* Become a coastal restoration volunteer

CONTACT US FOR MORE INFORMATION AT:  
www.LaCoast.gov or (337) 266-8623



As the science of wetland restoration evolves, public participation is a key element in assuring the continuation of these vital programs.

## A multifaceted problem...

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. In addition, natural processes compounded the problem as storms, rising sea level, erosion, and subsidence (compacting of the soil) have all taken a toll on coastal Louisiana.



The oil and natural gas industries have a value exceeding \$16 billion a year. Twenty-six percent of U.S. oil and natural gas production originates, is transported through, or is processed in Louisiana's coastal wetlands.

For centuries, periodic overflow of the Mississippi River helped build the Louisiana coast through sedimentation, a natural land-building process that offsets erosion and subsidence. Fresh river water delivered essential sediment and nutrients 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 deterioration.

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 land in place; without it, the land crumbles. As salt water seeps into freshwater areas, vegetation dies and the process, steadily moving inland, continues to repeat itself. Combined with reduced freshwater inflow from the Mississippi River, the result is a starving ecosystem under attack.



Runoff from farms, cities and factories flows into the Mississippi River drainage basin. The nitrates and phosphates that eventually reach the Gulf of Mexico create algae blooms that decompose, depleting the water of oxygen. Hypoxic waters are commonly known as "dead zones."



The Coastal Wetlands Planning, Protection and Restoration Act (Public Law 101-646, Title III-CWPBRA), signed into law by President George Bush in 1990 and reauthorized in 2005, provides approximately \$60 million annually for coastal restoration in Louisiana.

Implementation of the CWPBRA program is managed through a federal-state partnership comprised of:

- \* State of Louisiana, Governor's Office
- \* U.S. Department of the Army - U. S. Army Corps of Engineers, New Orleans
- \* U.S. Environmental Protection Agency - Region 6
- \* U.S. Department of the Interior - U.S. Fish and Wildlife Service
- \* U.S. Department of Agriculture - Natural Resources Conservation Service
- \* U.S. Department of Commerce - NOAA National Marine Fisheries Service

The Louisiana Department of Natural Resources is the local cost-share partner.



# Turning the Tide

The fight to keep coastal Louisiana on the map

For more information on Louisiana's Coastal Wetlands Planning, Protection and Restoration Act (CWPBRA) visit us at:  
[www.LaCoast.gov](http://www.LaCoast.gov)

## 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.

Between the two extremes - collapse and preservation - lies a natural world that supports almost one-fourth of the domestic oil and gas production and the largest seafood harvest in the lower 48 states. Wetlands protect one of the largest shipping and fuel production corridors in the U.S. from hurricanes and open sea conditions. Just one of Louisiana's major ports receives about a million barrels of oil every day—roughly 13 percent of the nation's foreign oil supply.



With 500 million tons of waterborne cargo passing through Louisiana's system of deep-draft ports and navigation channels, the state ranks first in the nation in total shipping tonnage. When Hurricane Katrina made landfall on August 29, 2005, it stalled the transportation supply lines for imports and exports in the area.

The coast's estuaries, with their mixture of salt and fresh water, provide an essential nursery for shrimp, crabs, and a variety of fish species. Annually, the dockside value of Louisiana's commercial seafood harvest averages \$310 million, and recreational boating and fishing is a billion dollar industry.

Scientists estimate that 79 species of animals and plants found in U.S. wetlands are either threatened or endangered due to wetland loss. The state's wetlands provide habitat for over five million migratory waterfowl each year.

For the people who call south Louisiana home, the cost of doing nothing has a high price tag. A cultural heritage made famous by Mardi Gras has deeper roots than parties and parades. It is a heritage of family and friends, hunting and fishing, cooking and community. It is defined, in part, by the prosperity that comes from living near the rich marshes, estuaries and fossil fuel mines hidden in the wetlands.

It may cost \$14 billion or more to restore Louisiana's coast. However, experts put the cost of inaction at roughly \$100 billion. Our nation cannot afford to lose this critical infrastructure for energy production, commercial shipping, oil and gas distribution, and seafood harvests. If our natural resources vanish, a part of America's prosperity vanishes.

## A pro-active resolution...

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

Since 1990, more than 145 CWPBRA projects have been constructed or approved for construction. During the 20-year life span of each project, over 70,000 acres of land are expected to be created or protected, and an additional 320,000 acres enhanced.



Located in Plaquemines Parish, La., the CWPBRA West Bay Sediment Diversion Project is the largest wetlands restoration effort of its kind in the world. The project's primary purpose is to rebuild marsh. The project is a partnership between the U.S. Army Corps of Engineers and the Louisiana Department of Natural Resources. The 85 percent federal share is funded by the Coastal Wetlands Planning, Protection and Restoration Act.

Although current funding levels do not support all of the necessary restoration required for a sustainable ecosystem, CWPBRA 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.



Spraying dredged sediment to restore marshes to specific elevations is one of the techniques used to reverse coastal wetland loss.

# 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 from its coast. Every 42 minutes one acre, an area roughly the size of a football field, vanishes. With 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 and support for these critically important national industries. In terms of human life and culture, the value of these wetlands is beyond estimation.



Residents of Louisiana are gladdened by the recovery of the state bird, which thrives in warm, coastal estuarine environments. Designated as endangered in 1970, the Brown Pelican's U.S. population now exceeds historic levels.

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



More than 1,900 square miles of Louisiana's coastal wetlands have disappeared into the sea.

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.



Storm surge from Hurricane Katrina (Aug. 29, 2005) devastated the town of Buras, Louisiana. The Buras water tower was completely destroyed.

## Approach to the task...

Each year CWPBRA has four regional planning teams that meet and accept projects nominated by the public, or various civic and nonprofit organizations. A coast-wide planning 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 costs, need, feasibility and overall benefit for each project. The Technical Committee then conducts public hearings to release findings and receive comments about these candidate projects. The Technical Committee recommends up to four of the 10 candidate projects (and may also recommend demonstration projects). Lastly, the CWPBRA Task Force selects projects to receive funding.

Based on careful assessment and consideration, the CWPBRA 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 changing process. To effectively manage coastal restoration, intervention 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 CWPBRA program, are needed to achieve success.

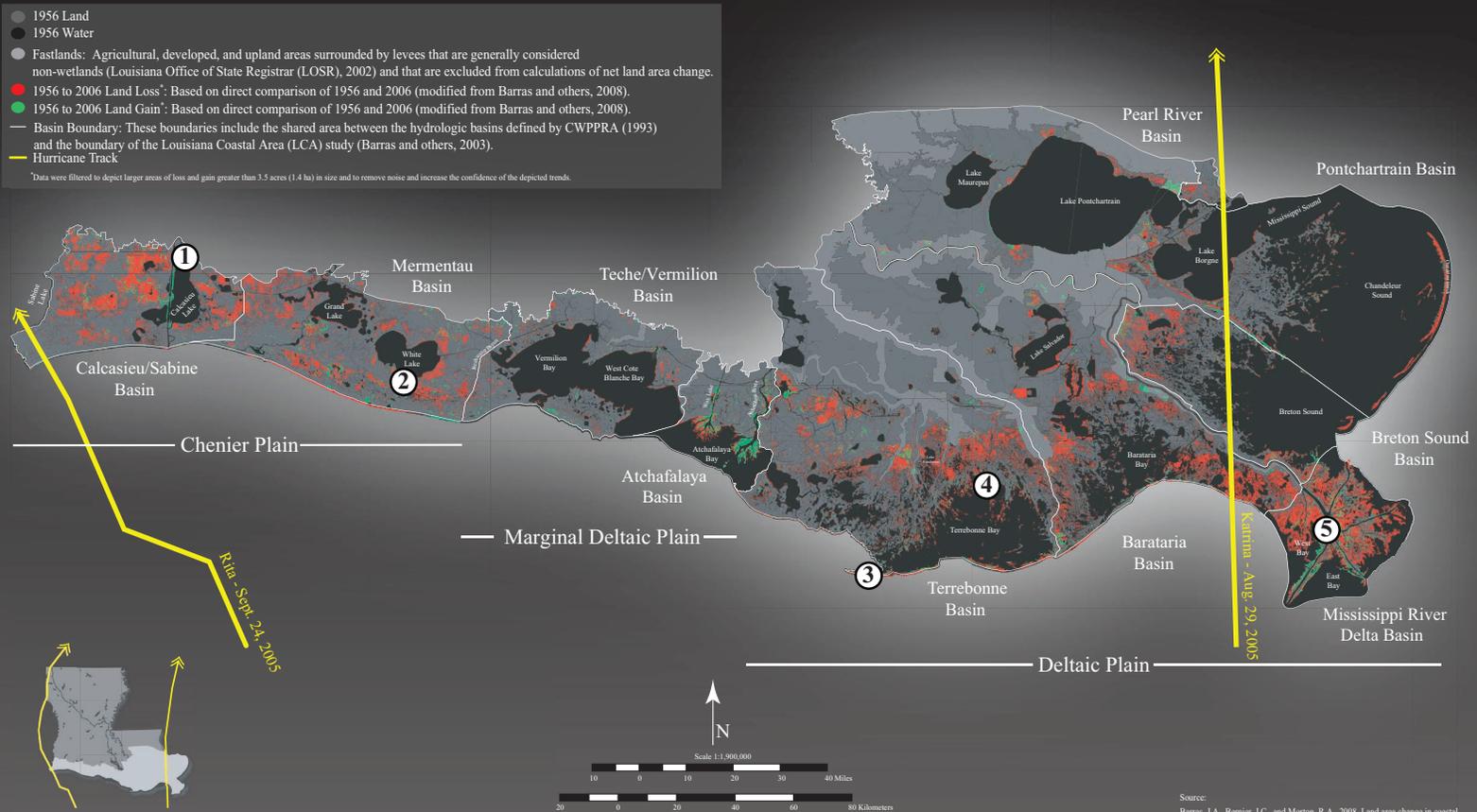
CWPBRA projects have benefited the coast while creating a real-world framework for restoration research and technology. Although successful, CWPBRA is only part of the solution. To meet the challenge of reversing land loss, established techniques and project scale must go to the next level. The catastrophic level of wetland loss in Louisiana requires both landscape-scale restoration and greater stakeholder involvement in reaching a common goal: a sustainable coastal Louisiana. CWPBRA 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.



Louisiana is by far the nation's largest producer of shrimp, oysters and blue crab.

# Coastal Wetlands Planning Protection, and Restoration Act (CWPPRA)

## Land Area Change in Coastal Louisiana from 1956 to 2006:



Source: Barras, J.A., Bemis, J.C., and Morton, R.A., 2008. Land area change in coastal Louisiana-A multidecadal perspective (from 1956 to 2006). U.S. Geological Survey Scientific Investigations Map 3019, scale 1:250,000, 14 p. pamphlet.

### Examples of CWPPRA Restoration Techniques:

Between 1990 and 2009, CWPPRA has completed or initiated 145 projects.



**1 Black Bayou Culverts Hydrologic Restoration (CS-29)**  
 Project area - 72,378 acres  
 Net benefit after 20 years - 540 acres  
 Cost - \$5.9 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.



**2 Pecan Island Terracing (ME-14)**  
 Project area - 3,550 acres  
 Net benefit after 20 years - 442 acres  
 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 trapping sediment which will help sustain the terraces and promote additional marsh growth.



**3 Timbalier Island Dune and Marsh Creation (TE-40)**  
 Project area - 663 acres  
 Net benefit after 20 years - 273 acres  
 Cost - \$16.8 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.



**4 North Lake Mechant Landbridge Restoration (TE-44)**  
 Project area - 7,577 acres  
 Net benefit after 20 years - 604 acres  
 Cost - \$39.5 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.



**5 West Bay Sediment Diversion (MR-03)**  
 Project area - 12,910 acres  
 Net benefit after 20 years - 9,831 acres  
 Cost - \$33.3 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 199 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 Technical Report (Draft) U.S. Army Corps of Engineers, New Orleans District).

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