No time to lose -

An ecosystem of enormous national significance is vanishing into the Gulf of Mexico at an alarming rate. In Louisiana, roughly one acre of coastal wetlands washes into the sea every half hour. With every acre lost, an essential habitat moves closer to extinction.

Photo: Corps of Engineers

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

In the past century, Louisiana has lost more than one million acres from its coast due to both human and natural factors that disrupted ecological stability. If this loss continues, a resource required for essential natural processes will vanish at a catastrophic cost to our nation.

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 industries. In terms of human life, the value of these wetlands is beyond estimation.

As this land disappears, hurricanes and tropical storms hit shore ever closer to the two million people who live near the coast. Healthy marsh provides a buffer to storms, and its ability to absorb high water and slow wind is key to survival for coastal communities. But every year, as wetlands lose ground, these forces hit closer to home.

Photo: Michael Maples

The historic Leeville Cemetery is sinking into the Gulf of Mexico.

Without intervention, this ecosystem will vanish from the national landscape. Already, coastal communities are sinking into the gulf. Fisheries and energy production are at risk. An entire culture is threatened. In all, more than 1,900 square miles of marsh have turned into open water, and the loss of land continues. Every half hour, an area approximately the size of a football field disappears.

Turning the Tide

The fight to keep coastal Louisiana on the map

www.LaCoast.gov

Front and Back Cover Photos: Guy Fanguy

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

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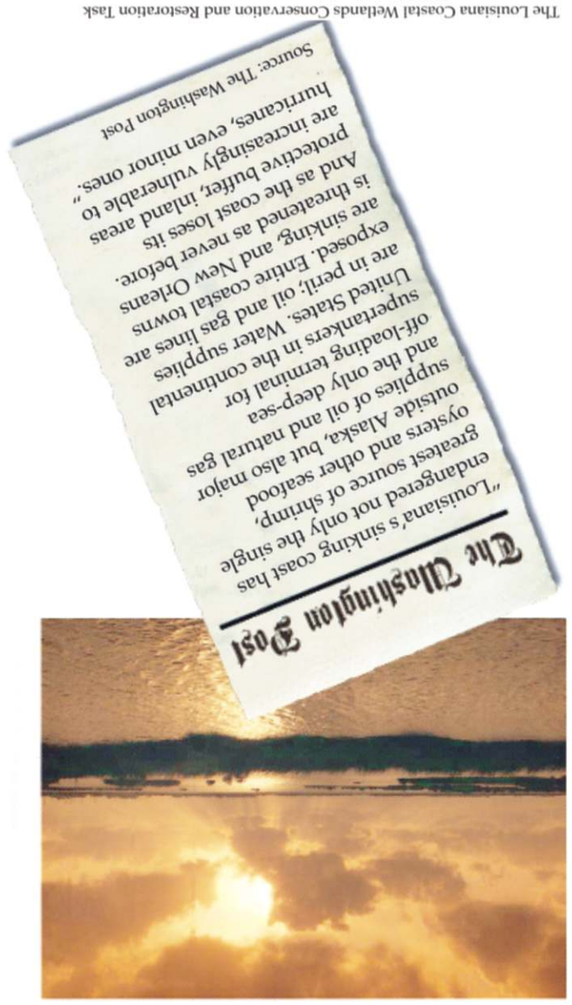
The Coastal Wetlands Planning, Protection and Restoration Act (Public Law 101-646, Title III-CWPPRA) was authorized by Congress and signed into law by President George Bush in 1990 and reauthorized in 2001 until 2009.

The Louisiana Coastal Wetlands Conservation and Restoration Task Force oversees CWPPRA in Louisiana:

* State of Louisiana, Governor's Office
* 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
* U.S. Department of the Army - U.S. Army Corps of Engineers, New Orleans



This is not just Louisiana's wetland; this is "America's Wetland."

Why is losing this ecosystem a national crisis?

Louisiana's coastal wetlands protect:

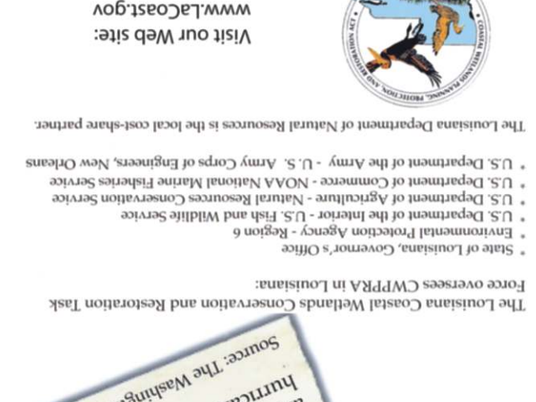
* About 2 million people including the New Orleans metropolitan area;
* Four of the nation's 10 largest ports, which operate from the Louisiana coast, handling 21 percent of the nation's waterborne commerce; and
* More than 43,000 oil and gas wells, two Strategic Petroleum Reserve storage sites and one of the nation's largest natural gas distribution centers.

Louisiana's coastal wetlands are an irreplaceable ecosystem essential for:

* Ensuring water quality by filtering pollutants and preventing saltwater intrusion into water supplies;
* Supporting over a billion dollar commercial and recreational fishing industry that relies on estuaries as nurseries for many species of fish and shellfish;
* Providing sanctuary for thousands of animal and plant species;
* Supporting wintering ducks in the Mississippi Flyway; and
* Ensuring the survival of south Louisiana's rich cultural heritage, defined in part by the natural abundance of its coastal marsh.

Coastal land loss in Louisiana has already resulted in:

* 1,900 square miles of coastal land lost since 1930;
* Increased storm surge and higher waves recorded during storms;
* The Gulf of Mexico encroaching on coastal communities; and
* Problems with agricultural irrigation and threats to drinking and industrial water supplies.



Between the two extremes - extinction 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. The marsh protects 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.

Photo: Corps of Engineers

Since 1990, CWPPRA projects have created or protected thousands of acres of land along Louisiana's dynamic coast.

The marsh's mixture of salt and fresh water is an essential nursery for shrimp, crabs, and a variety of fish species. Annually, the dockside value of Louisiana's commercial seafood harvest is more than $342 million, and recreational fishing is a $944 million industry.

This ecosystem is home to 73 percent of the plant and animal species listed as threatened or endangered in Louisiana. The state's wetlands provide habitat for more than five million migratory waterfowl each year.

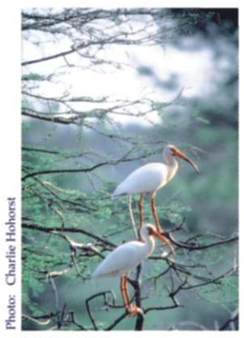


Photo: Charlie Hohorst

White Ibis
More than 400 species of birds can be found in south Louisiana, most of them in the coastal zone.

For the people who call south Louisiana home, the cost of doing nothing is 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 stores formed by 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 these natural resources vanish, a part of America's prosperity vanishes.

Multi-faceted problem -

Why is Louisiana facing such a critical level of land loss? The crisis confronting this state and the nation has multiple causes. Among them is the levee system completed on the Mississippi River to contain high water after the Great Flood of 1927. Construction of canals and waterways for the oil and gas industry further weakened the basic integrity of this landmass. In addition, natural processes have contributed to the problem: storms, sea level rise, erosion, and subsidence, or compacting of the soil, have taken a toll.

Photo: Guy Fanguy

Four of the nation's top 10 ports operate from Louisiana's coast. Louisiana ports handle about 21 percent of America's waterborne commerce.

For centuries, periodic overflow of the Mississippi River helped build the Louisiana coast through sedimentation--a natural land-building process that balances erosion and subsidence. Fresh river water delivered essential sediment and nutrients to marshes. When the levees became a tourniquet 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 core landmass, salt water began to intrude upon and kill existing freshwater vegetation. The root system 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.

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 United States Senator John Breaux of Louisiana, this legislation funds a multi-faceted coastal rehabilitation program. It is managed by a task force of five federal agencies and state government joined in the common goal of saving one of America's most valuable natural resources.

As of January 2004, more than 60 CWPPRA projects have been constructed. During the 20-year life span of each project, over 74,000 acres of land are expected to be created or protected.

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. In addition, this extreme level of loss has created a crisis situation that, to overcome, must rely on consensus building and a comprehensive restoration plan.

Photo: Louisiana Office of Tourism

Some experts predict a 20-foot storm surge could swamp New Orleans without the coastal marsh as a hurricane buffer.

To address this need, CWPPRA funded a 1998 report, "Coast 2050: Toward a Sustainable Coastal Louisiana," that outlines strategies for a multibillion dollar restoration effort. Coast 2050 includes multiple strategies for restoring about 500,000 acres of Louisiana's coast over the next 50 years. These strategies are being refined into achievable landscape level solutions by the CWPPRA agencies through the Louisiana Coastal Area (LCA) effort. Restoring coastal Louisiana will be one of the largest and most complex environmental and engineering projects ever undertaken.

Photo: Charlie Hohorst

Great Blue Heron
Both native and migratory birds depend on Louisiana's barrier islands, cheniers and coastal marshes for survival.

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

Approach to the task -

The goal of coastal restoration projects funded by CWPPRA is to re-establish degraded wetlands and restore natural processes where possible. Some projects redirect fresh water into marshes suffering from saltwater intrusion. Others protect the coast with rock dikes or with improvements to barrier islands that slow wave action against the shore. Additional projects involve depositing dredged soil into marshes, while several include planting new vegetation using species proven to thrive in marsh conditions.

CWPPRA projects have benefited the coast while creating a real-world framework for restoration research and technology. Although successful, CWPPRA is only part of the solution. To holistically meet the challenge of reversing land loss, established techniques and project scale must go to the next level. The catastrophic level of loss in Louisiana requires both landscape-level 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.

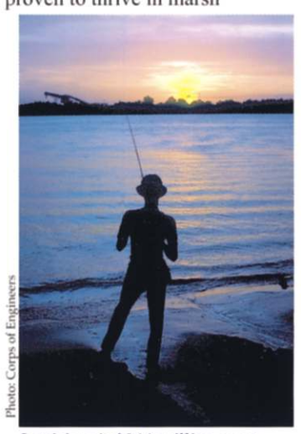


Photo: Corps of Engineers

Louisiana's $944 million sport fishing industry relies on wetland nurseries to feed and protect a variety of fish species.

Photo: Guy Fanguy

Louisiana ranks first in the nation in crude oil production and second in natural gas, but offshore platforms built in bays are threatened by open sea conditions as the wetlands disappear.

The cost of no action -

When close to 2,000 square miles of land disappear from the economic and organic infrastructure of not just a state but also a nation, a natural disaster becomes a national crisis. In Louisiana, an entire ecosystem is at a cross-roads between extinction and preservation.

Over 100 Years of Land Change for Coastal Louisiana

20 0 20 40 60 Kilometers

10 0 10 20 30 40 Miles

N

Land Loss 1932 - 2000

Predicted Land Loss 2000 - 2050

Land Gain 1932 - 2000

Predicted Land Gain 2000 - 2050

Louisiana Land Change Study Boundary

In the past century, Louisiana has lost more than 1,900 square miles of coastal land, an area roughly the size of Delaware. By 2050, without further intervention, the national landscape could lose another 700 square miles from this valuable ecosystem, which supports the nation's oil and gas production, seafood harvest and shipping industry. As the first line of defense against the implosion of this ecosystem, the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) has constructed more than 60 projects expected to benefit 74,000 acres of coastal landscape while building a framework for long-term solutions to save "America's Wetland." The CWPPRA projects highlighted below illustrate various restoration techniques implemented to combat land loss throughout the coastal zone.

Bayou LaBranche Wetland Creation (PO-17)
Project area - 487 acres
Net benefit after 20 years - 203 acres
Cost - $3.67 million
Located next to Interstate 10 just outside of New Orleans, the Bayou LaBranche Wetlands Project deposited 2.7 million cubic yards of sediment dredged from Lake Pontchartrain to create new, emergent marsh in what had formerly been an open water area. This project is providing needed habitat to coastal organisms, but more critically, this project also created land to provide protection to New Orleans from land loss and potentially lethal hurricanes.

Baton Rouge
Lake Charles
Lafayette
Lake Pontchartrain
Slidell
New Orleans
Vermilion Bay
Morgan City
Houma
Breton Sound
Terrebonne Bay
Grand Isle

Holly Beach Sand Management (CS-31)
Project area - 8,901 acres
Net benefit after 20 years - 330 acres
Cost - $19.3 million
The goals for the Holly Beach shoreline protection project are to protect roughly 8,000 acres of marsh wetlands and to create and protect about 300 acres of beach dune along the shore. More than 1.7 million cubic yards of sand deposited on the beach will be protected by an existing rock breakwater system. Homes, businesses, coastal marshes and the area's only hurricane evacuation route were at risk because of chronic shoreline erosion. Holly Beach represents the largest beach shoreline protection project in the country.

Little Vermilion Bay Sediment Trapping (TV-12)
Project area - 964 acres
Net benefit after 20 years - 441 acres
Cost - $894,000
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 and involved the creation of over 23,300 linear feet of earthen, vegetative terraces. In addition to creating marsh, this project is trapping sediment which will help sustain the terraces and promote additional marsh growth.

Whiskey Island Restoration (TE-27)
Project area - 4,926 acres
Net benefit after 20 years - 1,239 acres
Cost - $7.7 million
Without restoration efforts, Whiskey Island was expected to be lost by 2007. The plan for this CWPPRA project included the creation of 657 acres of back island marsh using material dredged from the bay north of the island. Sediment was pumped to restore 3.2 miles of the island. Projects such as this do not only extend the life of valuable island habitat, but also represent the first line of defense against coastal erosion.

North Lake Mechant Landbridge Restoration (TE-44)
Project area - 8,877 acres
Net benefit after 20 years - 604 acres
Cost - $26 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. This project will help to turn the tide on wetland loss.

West Bay Sediment Diversion (MR-03)
Project area - 12,910 acres
Net benefit after 20 years - 9,831 acres
Cost - $22.3 million
To rehabilitate declining wetlands in West Bay, fresh water and sediment from the Mississippi River is 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 completed by the CWPPRA task force in 2003.

Map prepared by: U.S. Geological Survey, National Wetlands Research Center, Lafayette, LA