



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

A Response to Louisiana's Land Loss

A Report by the Louisiana Coastal Wetlands  
Conservation and Restoration Task Force

17APRIL2006

## CWPPRA Task Force Member Agencies

- U.S. Army Corps of Engineers (represented by New Orleans District): 504-862-2204 or <http://www.mvn.usace.army.mil/pd/projsasp/main.asp>
- U.S. Department of the Interior (represented by U.S. Fish and Wildlife Service): 337-291-3100 or <http://www.fws.gov/coastal/CoastalGrants/>
- U.S. Department of Agriculture (represented by Natural Resources Conservation Service): 318-473-7690 or <http://www.la.nrcs.usda.gov/programs/cwppra.html>
- U.S. Department of Commerce (represented by NOAA National Marine Fisheries Service): 225-389-0508 or [http://www.nmfs.noaa.gov/habitat/restoration/projects\\_programs/CWPPRA/index.html](http://www.nmfs.noaa.gov/habitat/restoration/projects_programs/CWPPRA/index.html)
- U.S. Environmental Protection Agency (represented by Water Quality Protection Division of EPA Region 6): 214-665-7275 or <http://www.epa.gov/region06/6wq/at/cwppra.htm>
- Louisiana’s Governor’s Office (represented by Governor’s Office of Coastal Activities): 225-342-3968 or <http://www.goca.state.la.us/CWPPRA-Home.html>

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Cover photos: CWPPRA Projects

Top left: Boston Canal/Vermilion Bay Bank Protection Project – Boston Canal Shoreline Protection

Top right: West Bay Sediment Diversion Project- Dredging of Diversion Channel

Bottom left: Timbalier Island Dune and Marsh Creation - Barrier Island Restoration

Bottom right: Bayou LaBranche Wetland Creation Project – Emergent Marsh

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# Louisiana Wetlands

## Provide Security and Essential Resources to the Nation

The traditional image of Louisiana's wetlands makes for a striking visual. Photos often depict a grassy expanse of vegetation with shrimp boats trawling and sea birds dotting the horizon. The image is accurate, but its serenity can be misleading. Within that tranquil scene are assets worth billions of dollars that serve our nation across an array of economic sectors.

## Protection of National Assets

Louisiana's coast is one of the most hurricane-prone regions in the U.S. Fortunately, its wetlands provide a natural buffer during storms by absorbing surging water. While wetlands can not prevent the devastating effects of major hurricanes such as the recent Hurricanes Katrina and Rita, wetlands are known to significantly reduce the storm surges associated with the more frequent tropical storms and smaller hurricanes. Data gathered after Hurricane Andrew in 1993 allowed scientists to estimate that every 3.8 to 4.3 miles of wetlands reduce storm surge by an average of one foot. In Louisiana's flat, low-lying coastal areas, these reductions in storm surge can mean the difference between an area that survives a storm and one that suffers significant damage. A 2004 study of Louisiana's coastal infrastructure indicated a total asset value of approximately \$96 billion. The wetlands enhance protection of this infrastructure, much of which directly serves the nation's needs for energy, navigation, and fisheries.

***"We're in a race against the clock. We cannot save every acre of land, but we can sustain the value of this remarkable landscape — understanding that such a complex problem requires a comprehensive solution."***

***- Former Senator  
John Breaux***

## Energy Security

Energy is the lifeblood of the U.S. economy, and Louisiana's coastal wetlands enhance protection of one of the system's primary arteries. The oil and gas industries have concentrated their activities within south Louisiana to take advantage of nearby refining capacity as well as the coast's proximity to offshore exploration zones. The network of energy facilities located in and around Louisiana's wetlands moves more than 26% of both the nation's natural gas and crude oil supplies (Figures 1 & 2). In 2003, the volume of crude oil and natural gas flowing through Louisiana's energy corridor represented \$150 billion in energy value. In 2001, the Federal Government received \$5 billion from royalties and related fees associated with oil and gas activity off coastal Louisiana. The recent upsurge in gasoline prices will undoubtedly increase this figure.

A great deal of infrastructure is required to support this level of activity. For example,

approximately 14,000 miles of pipelines run through the marshes of coastal Louisiana. The wetlands enhance protection of this and other energy infrastructure from storm damage (Figure 3). While not representing fair market value, in 2003, this function alone gave the

wetlands an estimated per acre intrinsic value of \$50,000, or \$30,000,000 per square mile. Without the shelter provided by wetlands, Louisiana's energy infrastructure would be crippled, and the security of the nation's energy supply could be compromised.

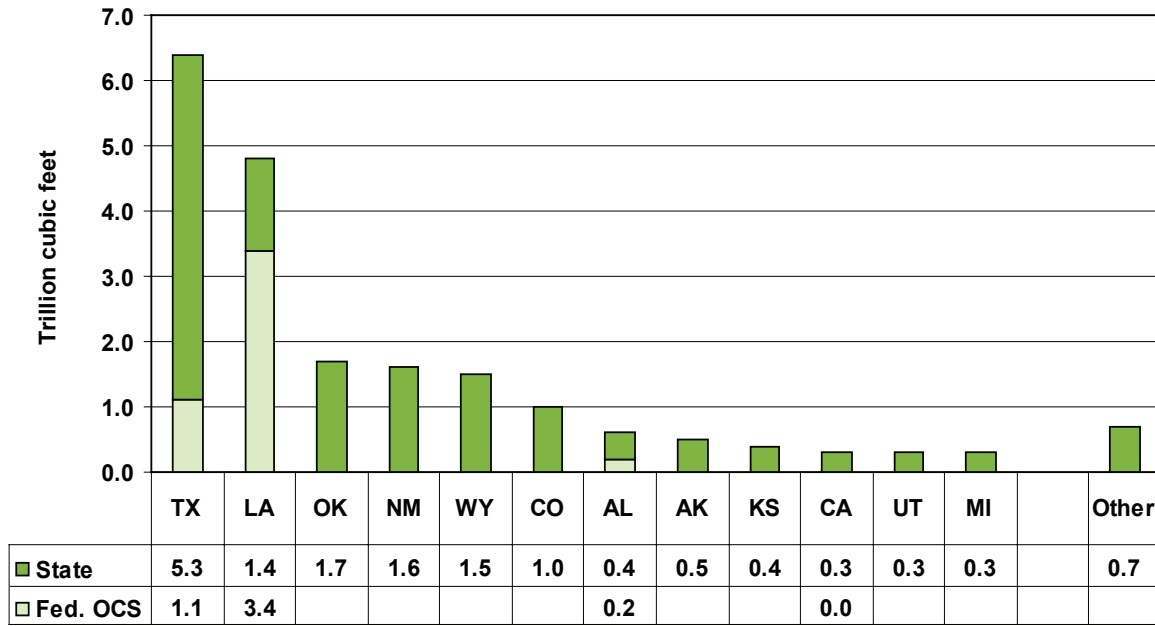


Figure 1. 2003 US Marketed Gas Production by State

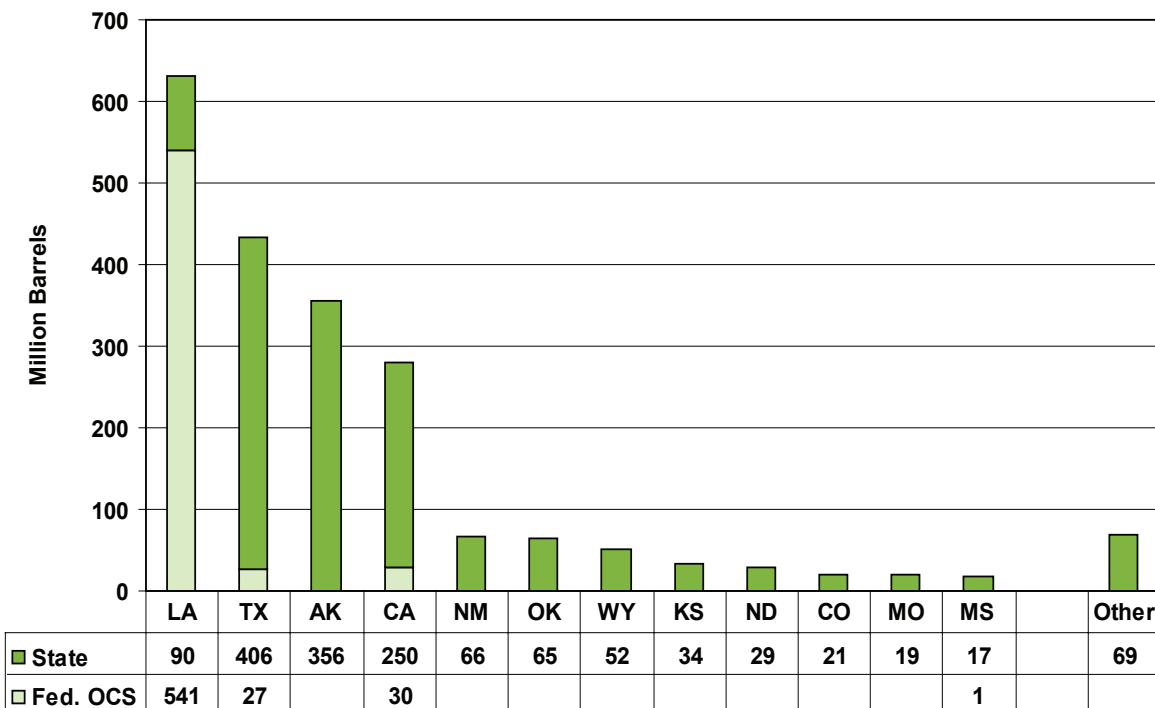


Figure 2. 2003 US Oil Production by State

Source for Figures 1 & 2: Louisiana Department of Natural Resources, Office of Technology Assessment.





Figure 3. Threatened Oil Facility

## Navigation Security

Nearly 3,000 miles of deep and shallow-draft channels are located in Louisiana's wetlands. Five of the 15 busiest ports in the U.S., ranked by total tons, are located in south Louisiana, handling cargo valued at over \$75 billion. South Louisiana ports carry 21% of all U.S. waterborne commerce and ship 57% of U.S. grain exports. The wetlands protect these waterways from hurricanes and storm surge, and in so doing ensure the flow of goods to and from U.S. markets. This flow directly affects the ability of thousands of U.S. workers to do their jobs and obtain the services they need.

## Fisheries and a Flyway

No other region in the U.S. supports the diverse fish and shellfish species seen in Louisiana's wetlands. Louisiana is by far the nation's largest shrimp (36%), oyster (50%), and blue crab (26%) producer. The region also provides almost one-third (by weight) of the fish harvested in the lower 48 states. These resources are gathered in south Louisiana and shipped throughout the world, providing jobs for 40,000 Louisiana citizens alone,

not to mention the thousands of jobs outside of Louisiana. The retail sales level for the total commercial and recreational fisheries harvest in coastal Louisiana was \$2.85 billion in 2003. The Louisiana Department of Wildlife and Fisheries has

preliminarily estimated the retail level losses to the State's fisheries industries due to Hurricanes Katrina and Rita at \$2.3 billion over the next two years.

The Mississippi Flyway passes directly over coastal Louisiana. More than 3.5 million migratory waterfowl spend the winter in Louisiana's coastal wetlands. In addition, the wetlands and coastal ridges provide stopover habitat to millions of neotropical migratory birds on their journeys across the Gulf of Mexico. Hundreds of bird species as well as the jobs and recreational opportunities associated with birding, hunting, and eco-tourism all depend on coastal habitats. In 2001, \$1.6 billion was expended for fish and wildlife recreation with \$6.2 billion in total economic benefit.

Louisiana's coast directly supports national goals of energy security, fisheries and wildlife conservation, and enhanced trade. However, this unique region is disappearing before our eyes, eliminating benefits that our nation has relied upon for decades.

# A Land in Peril

## Losing One of Our Nation's Key Economic Zones

For all the abundance generated within Louisiana's coast, the wetlands themselves are dying. The cumulative effects of human and natural activities in the coastal area have severely impaired the deltaic processes and shifted the coastal area from a condition of net land building to one of net land loss.

While many studies have been conducted to identify the major contributing factors, most studies agree that land loss and the degrada-

tion of the coastal ecosystem are the result of both natural and human induced factors, producing conditions where wetland vegetation can no longer survive and wetlands are lost. Establishing the relative contribution of natural and human-induced factors is difficult. Changes in hydrology and ecologic processes manifest gradually over decades and in large areas, while other effects, such as storm damage, occur in a single day and impact relatively localized areas. For barrier shorelines, complex interactions between storm events, longshore sediment supply, coastal structures, and inlet dynamics contrib-

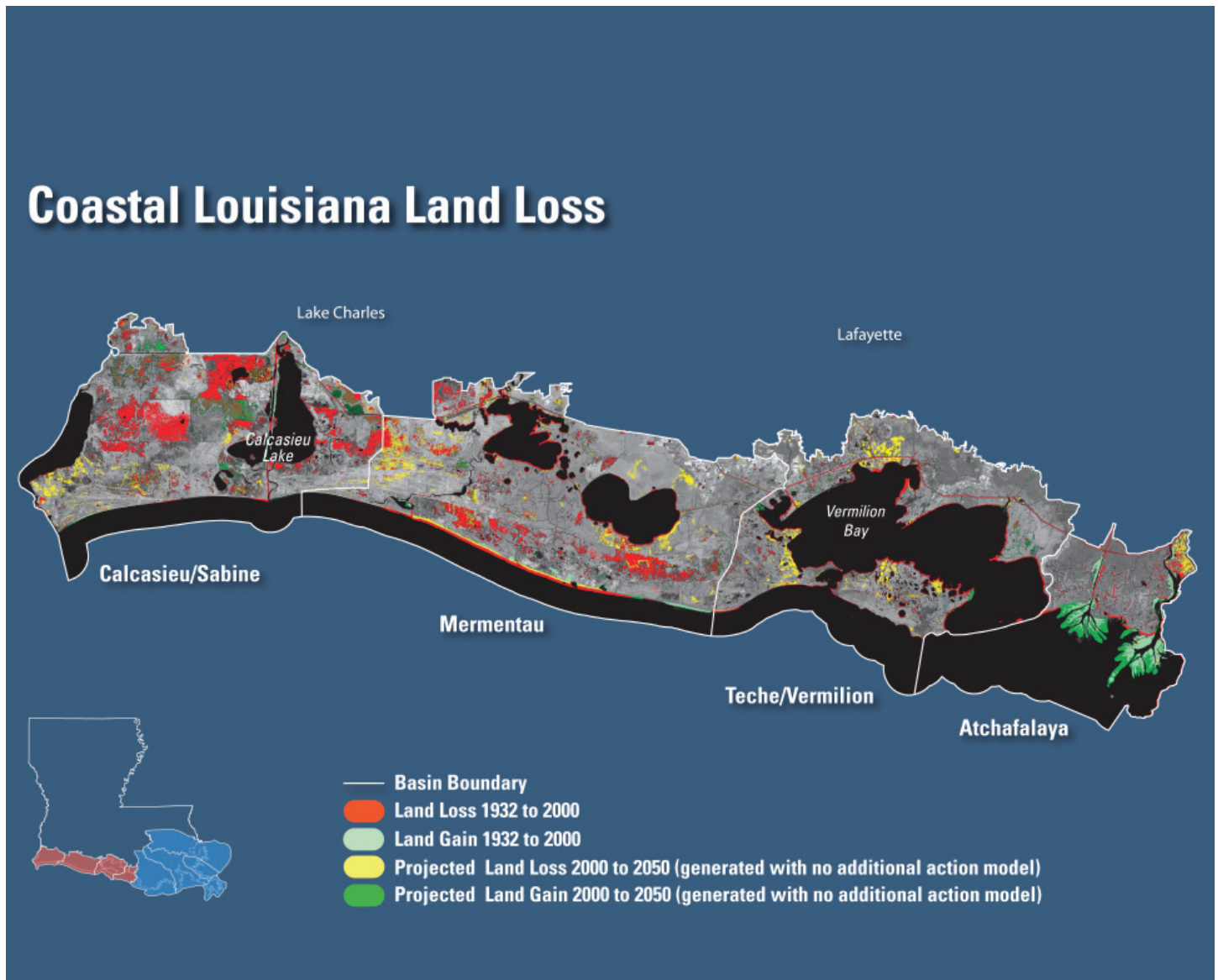


Figure 4. Historical and Projected Land Loss by Basin

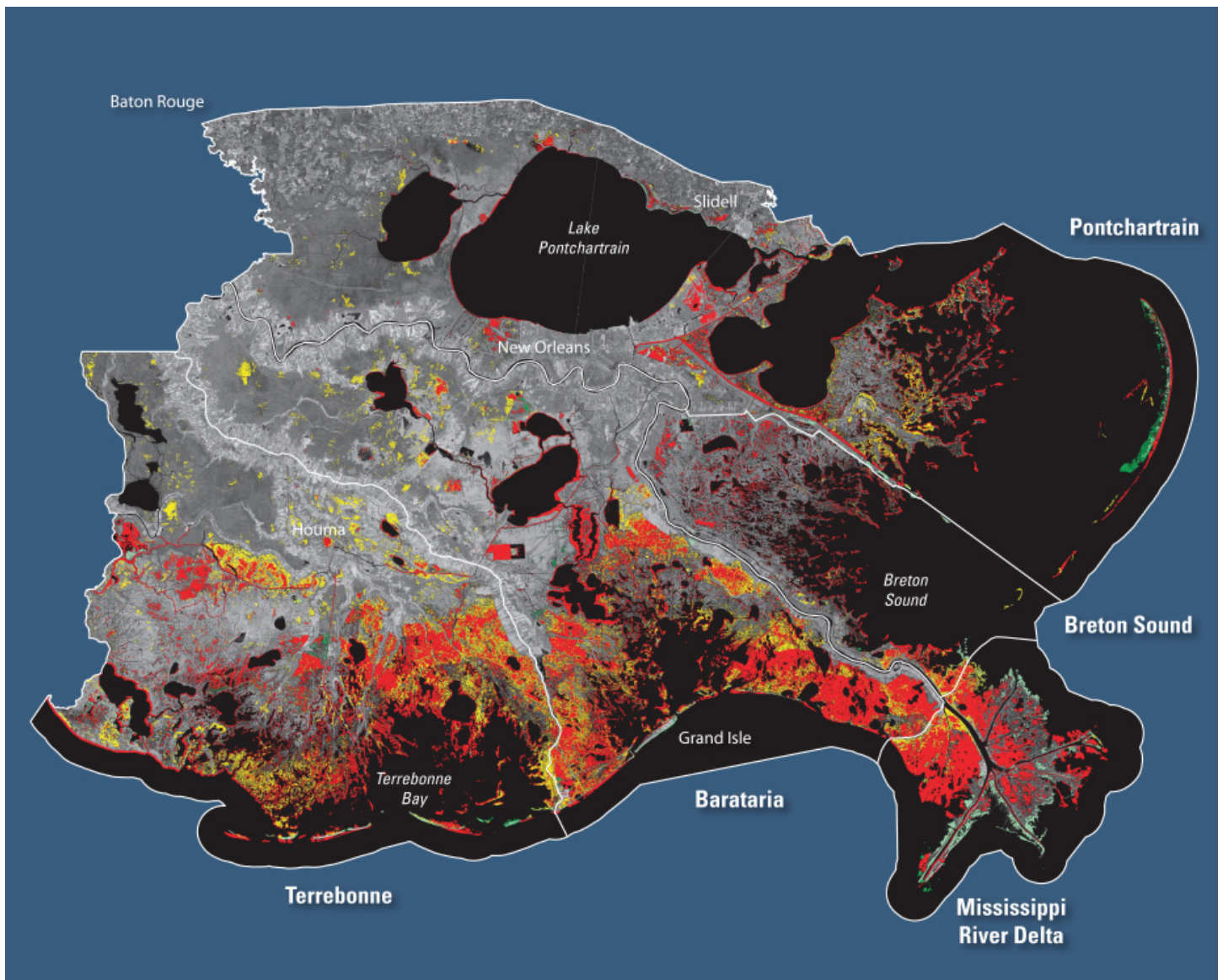


ute to the erosion and migration of beaches, islands, and cheniers. When the Mississippi River built the wetlands, its annual floods spread tons of water and sediment across south Louisiana, creating an ecosystem that endured for thousands of years. But in the last century, the river's floods were contained by levees. Because the river's water and sediment are channeled into the Gulf of Mexico, the wetlands do not receive the sediment and nutrients necessary to allow them to be sustainable. Rising sea level, saltwater intrusion from petroleum exploration and navigation channels, subsidence, and a host of

other contributing factors result in land loss and degradation. As a result, the wetlands are rapidly converting to open water.

## How Much Land Is Louisiana Losing?

During the 20th century, coastal Louisiana has lost over 1.2 million acres (1,875 square miles), an area more than 25 times larger than Washington, D.C. Scientists estimate that the State will lose an additional 431,000 acres (673 square miles) by 2050 (Figure 4). During the decade of 1990 to 2000, land loss cost Louisiana approximately 15,300 acres



(24 square miles) per year, largely through conversion of vital coastal wetlands to open water. Preliminary estimates from the U.S. Geological Survey indicate that 75,520 acres (118 square miles) of marshland along Louisiana's coast were shredded or sank as a result of Hurricanes Katrina and Rita, further exposing the area to the detrimental effects of powerful storms. In some areas, the losses incurred from these two hurricanes exceeded estimates of future land loss over the next 50 years. Sadly, it has become common to hear south Louisiana residents reminisce about tracts of land their families used just 10 or 20 years ago---land that is now under water.

## National Implications

If this rate of loss is not reduced, critical energy infrastructure may be damaged or destroyed. Pipelines, offshore support centers, and other facilities constructed for inland conditions will be exposed to the open water of the Gulf of Mexico.

These facilities include a component of the Strategic Petroleum Reserve as well as the Henry Hub, one of the nation's major natural gas distribution centers. Should present trends continue, the nation could experience further disruptions in the delivery and pricing of crude oil and gas, conditions which could be destabilizing to the economy as a whole. For instance, after Hurricanes Katrina and Rita the price of gasoline rose over 60 cents a gallon in southeastern Idaho – a long way removed from coastal Louisiana. More than two months after Hurricane Katrina and one month after Hurricane Rita, the Minerals Management Service reported that oil and gas production levels were only 68% and 55%, respectively, of the Gulf region's production capability.

As witnessed after Hurricanes Katrina and Rita, oil and gas availability was further reduced by the magnitude of storm-induced spills. The Coast Guard estimated that more than 7 million gallons of oil was released, which is nearly two thirds of the 11 million gallons of oil spilled during the Exxon Valdez incident in Alaska. Unlike the Valdez spill which poured from a single source, these hurricane related spills are scattered at sites throughout southeast Louisiana (Figure 5). As the long-term environmental impacts of these spills are yet to be determined, the ability of wetlands to enhance protection to energy infrastructure is needed now more than ever.

Shipping will be similarly affected. As wetlands erode, it will become much more expensive to maintain national waterways and ports in south Louisiana. U.S. taxpayers will likely be required to pay these increased maintenance costs.

With continued wetland loss, many commercially important fisheries stocks will plummet as the spawning, breeding, and foraging grounds of fish and shellfish become open water. This could result in rising prices and shortages of resources that are readily available today, and not just for fish-related products. For example, the poultry industry relies on menhaden fish meal to feed its chickens. As Louisiana is by far the nation's largest producer of menhaden, reductions in menhaden fisheries stocks could result in higher prices for poultry.

As evidenced by recent events, the increased risk from hurricanes to infrastructure and human life cannot be ignored. According to 2000 census data, approximately two million people, or over 50% of Louisiana's citizens, lived in Louisiana's coastal parishes. The





Figure 5. Post-Hurricane Katrina Oil Spill

2005 landfall of two strong hurricanes in coastal Louisiana, Hurricanes Katrina and Rita, displaced and disrupted the lives of hundreds of thousands of people. Over a thousand lives were lost and many coastal communities were totally devastated. As land loss continues, areas once protected by wetlands are now more vulnerable to storm surge and hurricane impacts.

The loss of coastal Louisiana communities and habitats presents a high cost to the nation. We are losing one of the most vital and unique regions of our country. Whether one considers the human cost, the risks to infrastructure, the danger to wildlife and landscape, or the loss of an entire way of life for many, it is clear that bold action must be taken.

## *Responding To Louisiana's Land Loss*

### *CWPPRA's Track Record*

In 1990, awareness about the impacts of Louisiana's land loss crisis was growing, thanks in large part to Louisiana Senators John Breaux and J. Bennett Johnston. In response, Congress enacted the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA), the first Federal statutorily mandated restoration of Louisiana's coastal wetlands and the first stable source of federal funds dedicated exclusively to the long-term

restoration of coastal wetlands. Since then, Louisiana has received an average of approximately \$50 million each year for coastal restoration projects through CWPPRA. These federal funds are currently matched by a 15% state contribution.

The program limits planning expenditures to \$5 million each year. As a result, approximately 90% of CWPPRA's funds are spent on direct project costs. In the last 15 years, the program has constructed, is constructing, or has approved for construction 78 projects at a total cost of nearly \$624.5 million (Figure 6). These projects are expected to re-establish or protect a total of approximately 70,616 net acres and enhance 320,354 acres of additional wetlands (Table 1). Additionally, 47 projects at a total cost of approximately \$913.4 million are in engineering and design. These projects are anticipated to re-establish or protect approximately 32,665 net acres and enhance 194,859 acres of additional wetlands. Of these 47 projects, the engineering and design is

nearly complete for 11, but presently there are insufficient CWPPRA funds (\$262.3 million) for their construction. In 2004, Congress reauthorized the funding for the CWPPRA program through 2019.

The CWPPRA Program has been the State's primary tool for responding to wetland loss. The CWPPRA program emphasizes practical benefits to habitats and human communities while supporting the economic uses that make this region so valuable to the nation. The Congress, through CWPPRA, provides a consistent funding source for coastal wetlands restoration efforts which enables program managers to plan for the future.

CWPPRA is well known for employing a wide array of restoration techniques, including vegetation plantings, river diversions, hydrologic restoration, marsh creation, shoreline protection, sediment trapping, and stabilization of barrier islands. CWPPRA project areas range in size from less than 100

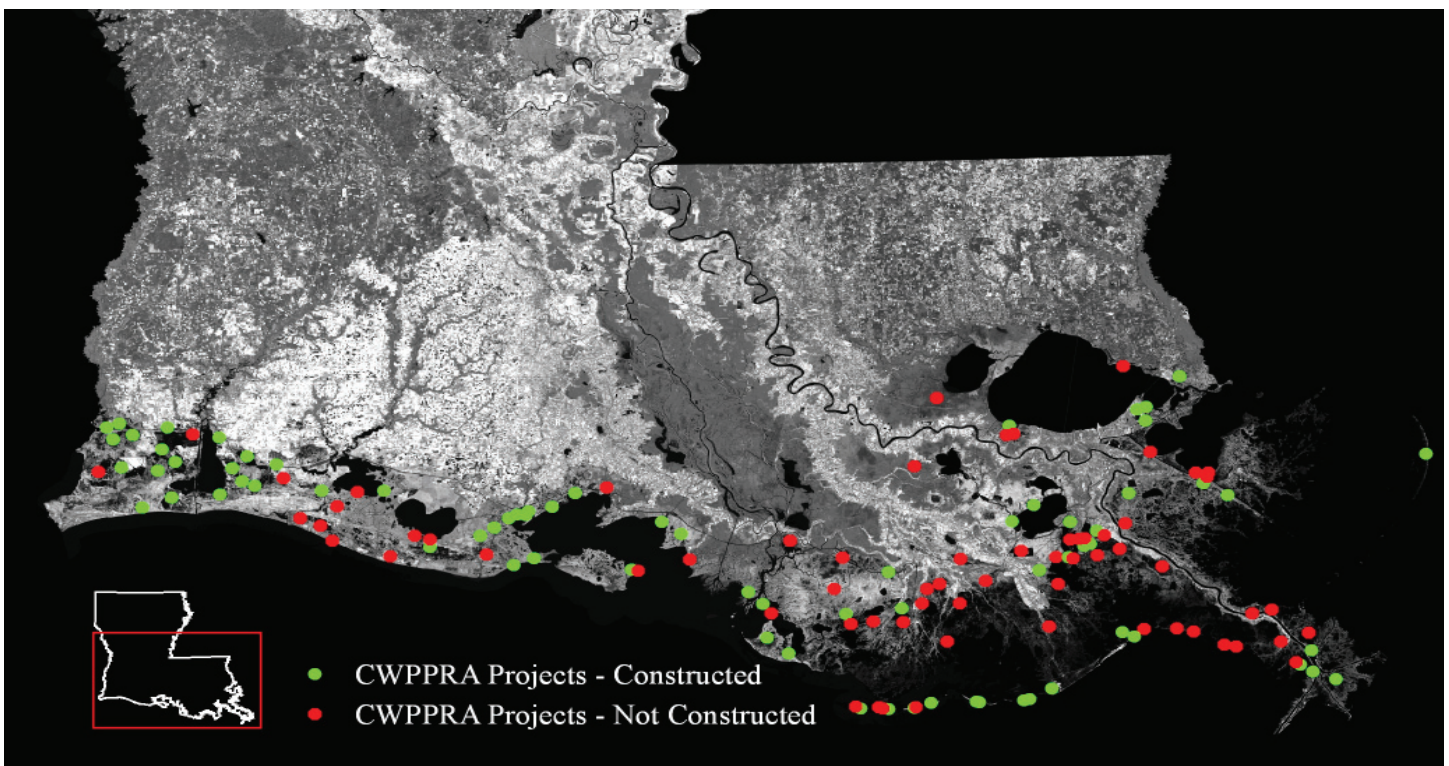


Figure 6. CWPPRA Projects: Constructed as of January 2006 and Not Constructed



Basin	# Projects	Re-established Acres <sup>1</sup>	Protected Acres <sup>2</sup>	Total Net Acres <sup>3</sup>	Enhanced Acres <sup>4</sup>	Cost
Pontchartrain	9	2,223	3,199	5,422	8,868	\$34,273,381
Breton Sound	2	1,069	0	1,069	12,987	\$7,719,940
Miss. River Delta	3	12,740	413	13,153	1,185	\$28,434,514
Barataria	13	1,750	3,742	5,492	26,500	\$250,883,109
Terrebonne	14	1,307	4,552	5,859	45,304	\$114,926,979
Atchafalaya	2	3,400	392	3,792	756	\$9,609,551
Teche/Vermilion	9	2,417	3,448	5,865	30,671	\$29,222,093
Mermentau	7	905	3,323	4,228	15,384	\$40,457,657
Calcasieu/Sabine	18	6,534	13,217	19,751	178,699	\$91,247,317
Coastwide <sup>5</sup>	1	0	5,985	5,985	0	\$17,734,918
<b>CONSTRUCTED<sup>6</sup> TOTALS</b>	<b>78</b>	<b>32,345</b>	<b>38,271</b>	<b>70,616</b>	<b>320,354</b>	<b>\$624,509,459</b>
<sup>1</sup> Areas with a net gain in wetlands over future without project conditions. Acres restored by marsh creation, terraces or river reintroductions.						
<sup>2</sup> Areas protected from loss that would have been lost under future without project conditions.						
<sup>3</sup> Sum of re-established and protected acres present at the end of 20 years.						
<sup>4</sup> Areas in which specific functions have been intensified/improved. Project area marsh at year 20 minus total net acres.						
<sup>5</sup> Coastwide Nutria Control Program.						
<sup>6</sup> Constructed includes projects that are constructed, under construction or approved for construction.						

Table 1. CWPPRA Projects Constructed to Date

acres up to tens of thousands of acres. Using different project types and sizes has enabled the program to respond more fully to the individual circumstances in each project area.

The program also is able to respond to immediate restoration needs. Typically, CWPPRA projects are taken from the design phase to construction in three to five years. This quick turn-around time allows the program to meet urgent restoration needs and to react promptly to changing environmental conditions.

CWPPRA addresses near-term restoration needs while other large-scale planning efforts are undertaken.

## A Collaborative Approach

Through its governing structure, the program emphasizes intergovernmental cooperation. Five federal agencies sit on the Louisiana Coastal Wetlands Conservation and Restoration Task Force, commonly referred to as the CWPPRA Task Force, and each agency

brings a different, and complementary, perspective to the table. These agencies include the U.S. Fish and Wildlife Service, the Natural Resources Conservation Service, the NOAA National Marine Fisheries Service, the U.S. Environmental Protection Agency, and the U.S. Army Corps of Engineers. The Louisiana Governor's Office represents the State on the Task Force while the Louisiana Department of Natural Resources is the local cost share sponsor for project implementation.

A Technical Committee, Planning and Evaluation Subcommittee, Environmental and Engineering Work Groups, and similar entities are responsible for project planning and engineering. The CWPPRA Task Force also retains the services of Louisiana academic coastal scientists to advise as needed. Each project built is assessed throughout its lifetime using an intensive monitoring program. The feedback gained by monitoring allows the program to continually improve project



designs and establishes information on the performance of restoration techniques under different local circumstances.

Strong links have also been made among the federal, state, and local government agencies, nongovernmental organizations, and the public. The process of identifying and selecting the projects to be built uses a “bottom-up” model that encourages local constituencies to contribute. This approach has created strong buy-in for projects from a broad array of interest groups throughout south Louisiana. Although some projects may have localized stakeholder concerns, all agree that coastal restoration is an issue that needs to be addressed.

The emphasis on collaboration and grassroots participation has had other implications for restoration projects as well. CWPPRA projects have tended to provide local benefits, with a sharp focus on enhancing habitat in areas of acute need. This approach has been entirely appropriate given the program’s budget and scope as well as the distress being felt by human and natural communities throughout the region. In recent years, CWPPRA has developed and implemented projects that, in combination, provide ecosystem-level benefits to large portions of the coastal zone.

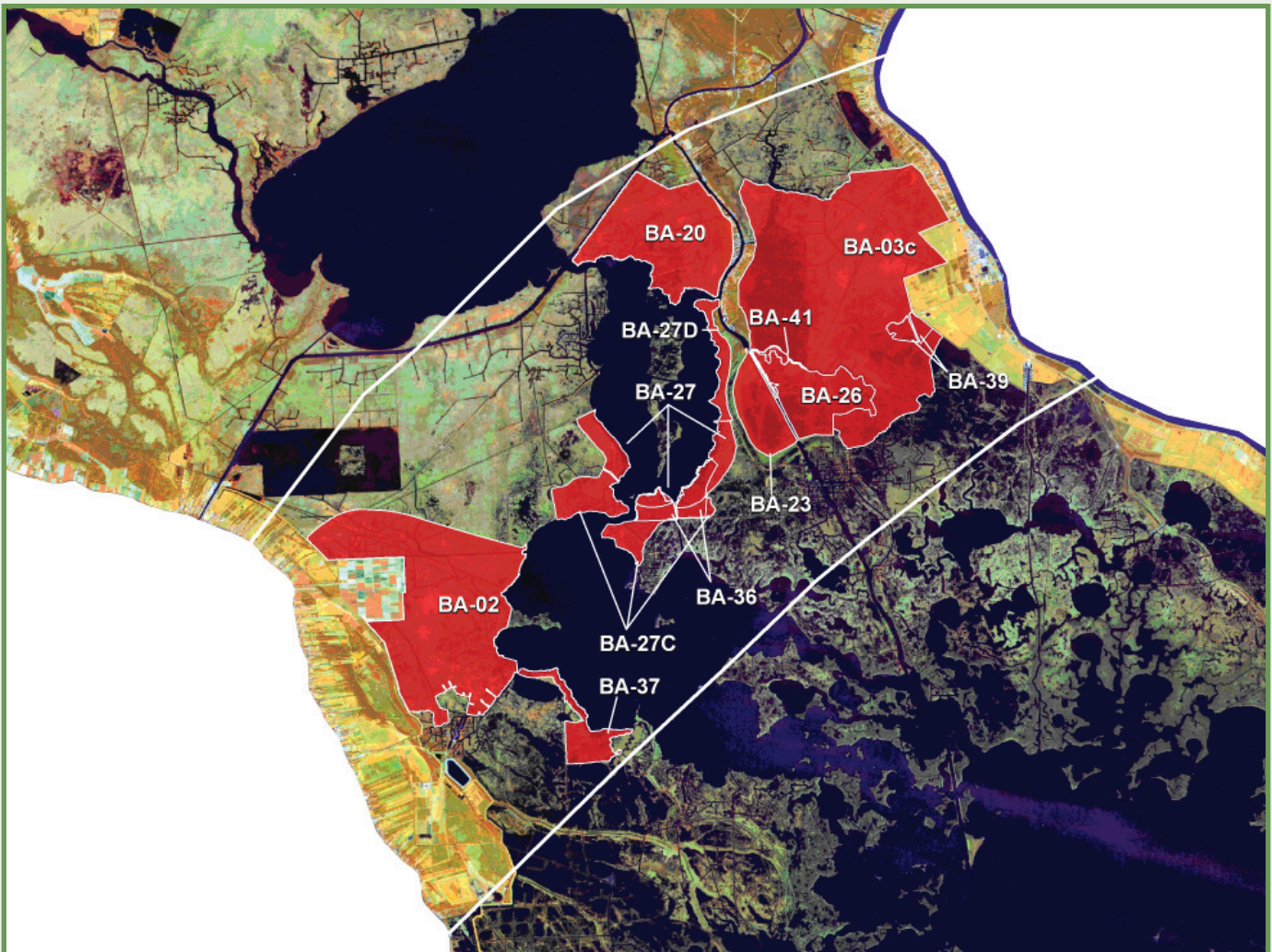
## Landscape Level Planning

Some parts of coastal Louisiana need larger restoration efforts than a single CWPPRA project can provide. CWPPRA projects can meet some of the needs of certain areas by building several interrelated projects that collectively address a problem at hand. Combining projects in this way can address basin-oriented goals of restoring critical

landforms, barrier shorelines, and historical hydrologic patterns. However, at current funding levels, the CWPPRA program cannot address all of the needs in all areas.

CWPPRA has led the effort toward landscape level planning for coastal Louisiana through the following activities: a) preparation of the *Louisiana Coastal Wetlands Restoration Plan* in 1993; b) development of *Coast 2050: Toward a Sustainable Coastal Louisiana* in 1998, a restoration plan which was the basis for the reconnaissance level document for the current Louisiana Coastal Area, Ecosystem Restoration Study (LCA Study) effort; c) preliminary investigation and engineering of a number of large scale projects that were precursors to features included in the proposed near-term LCA plan; and d) development and implementation of synergistic projects to address regional needs.

CASE STUDY: The Barataria Basin Landbridge is sinking and subject to erosion from nearby lakes and bayous -- a situation that threatens the communities of Barataria and Lafitte and also the west bank areas of New Orleans. Numerous oil and gas wells, pipelines, and storage facilities are also at risk. To address the problem, the CWPPRA Task Force approved a series of 12 projects costing over \$253 million. Projects in areas needing more immediate attention were approved first. When complete, the projects will strengthen the landbridge by re-establishing or protecting 5,400 acres and enhancing 27,500 acres.



*CWPPRA Projects Supporting Barataria Basin Landbridge*

# Comprehensive Coastal

## Restoration

### CWPPRA's Role in the Restoration Process

By the late 1990s, despite its accomplishments, it was evident that CWPPRA could not single-handedly confront the complex land loss problems facing coastal Louisiana.

While recognizing CWPPRA's important role, the CWPPRA Task Force began examining options for creating a companion program that could address the systemic problems fueling land loss in Louisiana. The resulting *Coast 2050: Toward a Sustainable Coastal Louisiana* report (Coast 2050 Plan) outlined a comprehensive set of restoration strategies for restoring south Louisiana's wetlands to a sustainable level. These strategies, endorsed by state and federal partners and local governments, were integrated into CWPPRA's project selection and planning process.

The Coast 2050 Plan provided the starting point for the LCA Study. The LCA Study began in 2003 and further delineated a sequence of projects for restoring south Louisiana's landscape to health. A near-term LCA Plan has since been derived from the study and is detailed in a January 2005 report from the Department of the Army Chief of Engineers. The plan identifies steps that are recommended in the next 10 years, including large scale initiatives, studies, and demonstration projects.

The LCA Plan envisions the construction of large civil works projects that would rehabilitate coastal Louisiana by, for example, reintroducing Mississippi River water into the wetlands. Implementing the near-term LCA Plan will cost approximately \$1.9 billion, and work is underway to secure authorization and funding through Congress. As the CWPPRA Task Force understands the proposed near-term LCA Plan, its approval would be good news for national energy, navigation, and fisheries interests, as well as for the communities of south Louisiana.

### Holding the Line

By continuing to preserve habitat in areas that need immediate help, CWPPRA projects offer an essential element to Louisiana's coastal restoration effort. The reality for coastal Louisiana is that large-scale projects funded through future restoration efforts could be many years down the road. In the meantime, Louisiana's land loss crisis will continue, and nationally important assets could pay the price. The CWPPRA Program's strengths and capabilities could continue to preserve or re-establish wetlands in targeted areas until large-scale efforts come on line.

The CWPPRA Program has demonstrated its ability to protect critical areas where restoration needs are immediate. Without CWPPRA or other restoration programs, unchecked wetland deterioration could render some large-scale projects infeasible. In the meantime, CWPPRA projects can help stave off wetland loss and prevent areas from reaching the point where cost-effective wetland restoration is no longer possible.

Though compact, CWPPRA projects deliver important cost-effective benefits. By address-



**CASE STUDY:** The Louisiana barrier island chain represents a first line of defense from storms and sea level rise that threaten coastal wetlands and communities. Once an almost continuous chain of beach and dune, the barrier islands have significantly deteriorated and the loss of the barrier islands is beginning to expose inland bays and petrochemical infrastructure to the gulf. To address the problem, the CWPPRA Task Force approved a series of individual projects to help hold the line as ecosystem-wide barrier island restoration is planned. In all, 10 projects costing over \$75.8 million have been implemented, with another 9 projects currently in construction or awaiting



*Louisiana: Barrier Island Restoration*

construction funds. Projects in areas needing more immediate attention were approved first. Combined, the implemented projects are re-establishing or protecting 4,800 acres and enhancing 71,600 acres, as well as helping to fortify the Louisiana coast.

ing localized problems as they arise, the projects prevent larger problems from developing. This responsiveness is particularly crucial after hurricanes and other storms. In these cases, CWPPRA projects can repair storm damage and prevent further destruction of habitat. CWPPRA projects would complement larger restoration efforts by correcting hot-spots of habitat degradation, a task crucial to the overall success of restoration in coastal Louisiana.

Louisiana's wetlands can be restored to a sustainable level, one that coexists with

human uses and communities. Achieving this equilibrium will require us to mimic nature's own land building processes, specifically the distribution of water and sediment through river diversions and other large scale projects.

In addition to these large-scale enterprises, ecosystem restoration must also be able to respond quickly to emerging land loss crises felt by human and natural communities. CWPPRA projects provide this level of local responsiveness while supporting the larger restoration efforts.

## Multi-Faceted Approach

CWPPRA is the largest of a group of coastal restoration programs which, collectively, can address a significant percentage of future coastal wetland loss. These programs include the Corps of Engineers' Navigation Maintenance Beneficial Use Program and the Continuing Authorities Program, as well as constructed Water Resources Development Act (WRDA) projects such as the Davis Pond and Caernarvon Freshwater Diversions, and state-only projects. Other restoration efforts include the North American Wetlands Conservation Act and private restoration efforts. Should authorization and funding be granted for the near-term LCA Plan, an even greater percentage of future wetland loss could be prevented. And, most recently, the Energy Policy Act of 2005 will provide coastal Louisiana with as much as \$540M over the next four years to mitigate some of the impacts of Outer Continental Shelf oil and gas production.

However, even with this impressive suite of programs, there still exists a tremendous unmet need to address future wetland loss in coastal Louisiana. Each of these programs aid in the effort to save Louisiana's embattled coast and only through program and agency partnerships will their full potential be realized.

**CASE STUDY:** The Caernarvon Freshwater Diversion was constructed in 1991 and consists of 5 large concrete box culverts at the Mississippi River to redistribute freshwater and sediments to the marshes surrounding Caernarvon and Lake Lery in St. Bernard and Plaquemines Parishes. The Caernarvon project, while successful, needed additional outfall management to ensure that the freshwater and sediment penetrated adjacent marshes. In response, the CWPPRA Task Force approved construction of the Caernarvon Diversion Outfall Management project (BS-03a) which was constructed in 2002 and involved placement of water control structures at strategic locations to better distribute the Caernarvon fresh water, especially during low discharge periods. This exemplifies the role of adaptive management, a foundation principle of CWPPRA.



*Caernarvon Freshwater Diversion Structure*



# Summary

The acres of coastal land disappearing each day endanger not only communities, but the viability of energy and navigation networks that directly support our nation's security and economy. Preliminary estimates from the USGS indicate that 75,520 acres (118 square miles) of marshland along Louisiana's coast were shredded or sank as a result of Hurricanes Katrina and Rita, further exposing the area to the detrimental effects of powerful storms. In some areas, the losses incurred from these two hurricanes exceeded estimates of future land loss over the next 50 years. The land loss crisis will not wait while details of large restoration projects are developed. Thus, with the damage caused by Hurricanes Katrina and Rita and in order to forestall future national consequences, the CWPPRA Task Force considers Louisiana's land loss crisis a special case, one that merits multi-faceted assistance.

The CWPPRA Task Force believes that ecosystem restoration programs should have time responsive projects, an interagency approach, predictable funding and a means to adjust to new science based information. Characteristics of the CWPPRA Program include:

- **Responsive** - By addressing land loss hot-spots, either in single projects or in tandem with larger efforts, the program is able to respond to urgent needs. Projects are usually completed in five years or less. This timeline allows the CWPPRA Program to address some land loss problems as they arise, thereby preventing manageable situations from becoming full blown environmental disasters.

***"It used to be that people would ask 'Where are the results? Is this just another study?'"***

***Now Louisianans are seeing real physical projects and not just studies on a library shelf."***

***- Former Senator John Breaux***

- **Interagency Approach** - The CWPPRA Program provides proven, cost effective projects developed by a highly experienced interagency team using a "bottom up" model that encourages local constituencies to contribute.
- **Predictable funding** - The CWPPRA Program has a dedicated stable federal funding stream through an excise tax on fishing equipment and fuel taxes on motorboats and small engines.
- **Fiscally responsible** - CWPPRA type projects hold the line while preparations are made for larger scale projects. Without the ability to stabilize rapidly degrading areas, such large scale efforts will become more difficult and costly to implement. In some cases, large scale projects will become infeasible without immediate action.
- **Complementary** – CWPPRA type projects can complement and provide synergy to other large scale restoration efforts. Both efforts



can each address different aspects of the coastal ecosystem degradation, thus resulting in greater overall project effectiveness over time.

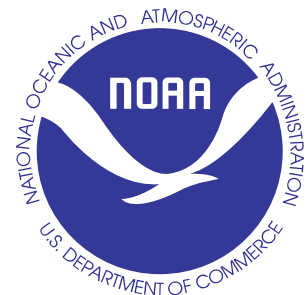
- Science based - The program's monitoring and adaptive management procedures provide a vehicle for field testing restoration techniques, thereby generating information that is essential to sustainable future restoration.
- Community Involvement – The program has strong local community involvement in project development and implementation.

In closing, the CWPPRA Program has a 15 year track record of success, it has been Congressionally authorized for funding through 2019, and it has a productive management structure involving multiple state and federal agencies that uniquely share decision-making.



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

Providing Effective Coastal Restoration Solutions for Louisiana Since 1990



CWPPRA website: <http://www.lacoast.gov/cwppra/index.htm>