

# WATER MARKS

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Louisiana Coastal Wetlands Planning, Protection and Restoration News

December 2014 Number 50



Restoration builds on  
CWPPRA's experience

**Funding + Expertise  
→ Gulf Coast Recovery?**

2010

2014



**December 2014**

Number 50

*WaterMarks* is published two times a year by the Louisiana Coastal Wetlands Conservation and Restoration Task Force to communicate news and issues of interest related to the Coastal Wetlands Planning, Protection and Restoration Act of 1990.

This legislation funds wetlands restoration and enhancement projects nationwide, designating nearly \$80 million annually for work in Louisiana. The state contributes 15 percent of total project costs.

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**ABOUT THIS ISSUE'S COVER . . .**

*As the fifth anniversary of the Deepwater Horizon oil spill approaches, coastal restoration projects funded with fines and penalties paid by parties responsible for the disaster take shape. CWPPRA's knowledge and experience, developed over the past 20 years, lay the foundation for much of the thinking and many of the proposals to redress deterioration and damage along the Gulf Coast.*

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Environmental Protection Agency

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## PENALTIES FOR DISASTER RAISE HOPE FOR WETLANDS

# Louisiana Devotes Oil-Spill Money to Coastal Restoration

**N**early five years ago the explosion of the Deepwater Horizon drilling rig claimed eleven lives and spewed millions of gallons of oil into the Gulf of Mexico some 40 miles off Louisiana's coast. Today, evaluating the disaster's consequences on the region's society, economy and ecosystems continues. Although money can never compensate the people and families who suffered death, injury or loss of livelihood as a result of the disaster, the responsible parties are paying, in compliance with federal laws, criminal, civil and administrative fines and penalties. This money is directed into three fund-

ing streams for redressing environmental damages and restoring natural resources: the Deepwater Horizon Natural Resources Damage Assessment (NRDA), the RESTORE Act's Gulf Coast Restoration Trust Fund and the National Fish and Wildlife Foundation's Gulf Environmental Benefit Fund.

### Reasons for hope

Louisiana's fragile wetlands were already in dire straits before bearing the brunt of the catastrophe's damage. Following the devastating hurricanes of 2005 – Katrina and Rita – and 2008 – Gustav and Ike – Louisiana had demonstrated its commitment to the coast by pass-

ing the state's Master Plan for coastal protection and restoration. "Approving the Master Plan clearly indicated that a unified Louisiana

CWPPRA has initiated more than a dozen barrier island restorations, including Raccoon Island Shoreline Protection and Marsh Creation (TE-48). Under the federal sponsorship of the Natural Resources Conservation Service and the local sponsorship of the Coastal Protection and Restoration Authority, the project contributed to a catalog of successful techniques that could guide restoration of Shell Island and Chenier Ronquille, undertaken as part of the Natural Resources Damage Assessment (see sidebar, page 4). The Gulf of Mexico Alliance provides big-picture overviews and comprehensive lists of individual projects financed with oil spill fines and penalties. Access their Deepwater Horizon Project Tracker at <http://www.gulfofmexicoalliance.org/>



## Deepwater Horizon Natural Resource Damage Assessment

Authorized under the Oil Pollution Act of 1990 (OPA) and the Louisiana Oil Spill Prevention and Response Act of 1991 (LOSPRA)

Under the terms of the Oil Pollution Act, companies responsible for an oil spill must pay the full cost of the clean-up. In addition, they must reimburse the cost of assessing damages to natural resources. The Natural Resource Damage Assessment (NRDA) process catalogues and quantifies the extent of environmental harm from a spill. The collected data is then used to determine all costs to restore, replace, rehabilitate or acquire the equivalent of the ecological resources harmed. Responsible parties must compensate the public both for these costs and for the loss of use of those resources. The amount of funds owed under NRDA are determined after the damage assessment is completed and a restoration plan is finalized. Responsible parties could pay the amount defined in the restoration plan, or they could challenge it, initiating further legal action.

**Purpose:** to evaluate the impacts of the Deepwater Horizon oil spill on natural resources and services and ensure that the environment and the public are made whole by

- restoring, rehabilitating, replacing or acquiring natural resources or services equivalent to those injured
- addressing specific injuries
- conducting oversight and monitoring

### Funding:

- Funds can be used only to address damage connected to the oil spill.
- BP agreed to fund up to \$1 billion in early restoration projects in the Gulf. As of late 2014, approximately \$370 million of early restoration funds were allocated to four projects in Louisiana.
  - Projects require agreement with BP on ecosystem benefits; early restoration projects are credited against the final assessment of BP's liability.
- Ongoing NRDA findings will result in additional funds, with a final determination of damages reached at the conclusion of the NRDA process.

### Funded project status:

- In Louisiana, early restoration projects currently under construction
  - Lake Hermitage Marsh Creation
  - Louisiana Oyster Culch Restoration
- Gulf Coast-wide, 54 Early Restoration Plan projects approved by October, 2014, including
  - Louisiana Outer Coast Restoration (Caillou Lake Headlands, Chenier Ronquille, Shell Island, and Breton Island restoration)
  - Louisiana Marine Fisheries Enhancement, Research and Science Center

### NRDA Trustees:

- National Oceanic and Atmospheric Administration (on behalf of the Department of Commerce)
- Department of Interior (participating agencies: U.S. Fish and Wildlife Service, National Park Service, U.S. Geological Survey, Bureau of Land Management)
- Environmental Protection Agency
- Department of Agriculture
- Gulf states Alabama, Florida, Louisiana, Mississippi, Texas (Louisiana representatives: Coastal Protection and Restoration Authority; Louisiana Oil Spill Coordinator's Office; Departments of Environmental Quality, Wildlife and Fisheries, Natural Resources)

was taking responsibility for its coast,” says Morgan Crutcher, technical and policy analyst at the Coalition to Restore Coastal Louisiana. “However, Louisiana’s wetlands are not just a state issue. They are as essential to the nation as they are to the state.”

To gain national support for restoring Louisiana’s coast, Crutcher says two questions must be answered: Why restore Louisiana’s wetlands? And, is it possible? “Why’ is easy,” says Crutcher. “Just look at any of the numerous reasons that coastal Louisiana is important to the nation – its seafood industry, its oil and gas production, its ports and navigation system, or its vital wetland habitat for wildlife and fish. Louisiana’s coastal region supplies goods and services that the entire country depends on. And healthy wetlands protect these benefits as well as coastal and inland communities by slowing hurricane winds and absorbing storm surge.”

To answer the second question, Crutcher points to the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) as proof that restoration is possible. Since CWPPRA’s passage in 1990, active projects have created, protected or restored close to 100,000 acres. And while building land, creating habitat and protecting

## Resources and Ecosystems Sustainability, Tourist Opportunities and Revived Economies of the Gulf Coast States Act (RESTORE Act) Gulf Coast Restoration Trust Fund

coastal interests, CWPPRA has developed and tested a variety of approaches to ecosystem restoration, among them shoreline protection, vegetative planting, marsh creation, barrier island restoration, use of dredged materials, water diversions and hydrologic restoration.

Incorporating public participation in its selection process for more than two decades, CWPPRA has placed nearly 200 projects on its annual priority lists. With allocations since the act's passage totaling \$1.5 billion, CWPPRA has not been able to build them all; some projects remain in the engineering and design phase, some have been removed from the priority project lists and some have been transferred for construction through other programs, such as Louisiana's Coastal Protection and Restoration Authority.

Although CWPPRA may not receive any of the oil spill money directly, the importance of the program is pervasive. "People who understand CWPPRA's origins and accomplishments realize that it has laid the groundwork for understanding the coast's problems and solutions," says Tanner Johnson, director of the National Fish and Wildlife Foundation-administered Gulf Environmental Benefit Fund. "As a result of CWPPRA, Louisiana is in position to identify

**Purpose:** to fund restoration and protection of the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, coastal wetlands and economy of the Gulf Coast region; can address large-scale, comprehensive ecological restoration

**Funding:** penalties collected for civil and administrative violations of the Clean Water Act

- Amount of penalties to be determined through court proceedings; estimated total between \$5 billion and \$21 billion
- 80 percent of penalties will be allocated to the Gulf Coast Restoration Trust Fund, 20 percent to the Oil Spill Liability Trust Fund
- The Gulf Coast Restoration Trust Fund will
  - divide 35 percent of its funds equally among the five Gulf states for ecosystem restoration, economic development and tourism promotion (Louisiana will direct 70 percent of its share to the Coastal Protection and Restoration Authority and 30 percent to coastal parishes)
  - allocate 30 percent plus interest to the Gulf Coast Ecosystem Restoration Council to administer ecosystem restoration under its comprehensive plan
  - allocate 30 percent plus interest to the Gulf Coast Ecosystem Restoration Council to divide among Gulf states, according to a formula described in the RESTORE Act, for implementing council-approved state expenditure plans for ecological and economic recovery
  - allocate 2.5 percent plus interest to the Gulf Coast Ecosystem Restoration Science, Observation, Monitoring and Technology Program (administered by the National Oceanic and Atmospheric Administration, in consultation with U.S. Fish and Wildlife Service, Gulf States Marine Commission, Gulf of Mexico Fishery Management Council)
  - allocate 2.5 percent plus interest to the states for Centers of Excellence research grants, to focus on science, technology and monitoring related to Gulf restoration

**Funded project status:** The first addendum to the Funded Priorities List, focusing on water quality and habitat restoration, will be released for public comment in 2015. Once the full amount to be paid to the Trust Fund is determined, future project lists may include geographically larger and more expensive projects.

### Gulf Coast Ecosystem Restoration Council members:

- Department of Commerce (Chair)
- Department of Agriculture
- Department of the Army
- Environmental Protection Agency
- Department of Homeland Security
- Department of the Interior
- Gulf states
  - Alabama
  - Florida
  - Louisiana (represented by Louisiana Coastal Protection and Restoration Authority)
  - Mississippi
  - Texas



## Gulf Environmental Benefit Fund

**Purpose:** to finance projects through the Gulf Environmental Benefit Fund that

- restore coastal habitat, remedy harm and reduce future risk to natural resources
- identify projects of the highest priority
- maximize environmental benefits through consultation with state and federal resource managers

**Funding:** Clean Water Act criminal penalties

- Funds approved projects in the Gulf Coast states
- NFWF will receive more than \$2.544 billion over five years in criminal penalties from BP and Transocean, 50 percent of which (\$1.272 billion) is directed to Louisiana for barrier island restoration and river diversion projects

**Funded project status:**

- Since 2013, Louisiana awarded more than \$221.2 million for five projects and one program:
  - Caminada Beach and Dune Increment II:
    - Engineering and design
    - Construction
  - East Timbalier Island: Engineering and design
  - Mid-Barataria Sediment Diversion: Engineering and design
  - Lower Mississippi River Sediment Diversions: Planning
  - Increase Atchafalaya Flow to Terrebonne: Planning
  - Adaptive Management: Louisiana River Diversions and Barrier Islands
- Funding for additional projects expected by 2015

**Administrator:**

National Fish and Wildlife Foundation (a congressionally chartered, not-for-profit, conservation grant-making corporation)

and prioritize the right projects, with confidence that it is investing wisely. “

### Shortfall forces tough questions

Restoration is expensive – Louisiana’s Master Plan calls for \$50 billion to be spent over 50 years – although when the loss of communities, environmental services and storm protection is considered, inaction is even more costly. “Even with the state committed to the Master Plan, even with the monetary windfall resulting from a catastrophe, there is not, and will not be in the foreseeable future, all the money that Louisiana needs to restore its coast,” says Crutcher.

“There is no blank check,” says Rex Caffey, professor and natural-resource economist with Louisiana State University AgCenter and Louisiana Sea Grant. “Successfully addressing this problem requires two things: finding more money and using what money we have with greatest efficiency. In other words, we have to maximize revenue and minimize cost.”

Under these circumstances Louisiana faces tough choices. While it is clearly imperative, as Caffey points out, to make the best use of the money available, it is far less evident what that best use is. The measure of success



Environmental Protection Agency

The Gulf Environmental Benefit Fund, administered by the National Fish and Wildlife Foundation (see sidebar, page 6), directs funds derived from Deepwater Horizon oil spill criminal penalties to building high-priority coastal restoration projects. In Louisiana, the Coastal Protection and Restoration Authority (CPRA) has selected a project initiated by CWPPRA, Diversion into Maurepas Swamp (PO-29), as a candidate for construction. The original project's lead, the U.S. Environmental Protection Agency, and the local sponsor, CPRA, set the goals of restoring natural swamp hydrology, increasing sediment and nutrient loading, increasing substrate accretion, retaining and increasing existing swamp vegetation and reducing salinity levels.

for a scientist looking at building land slowly over 50 years is quite likely to differ from that of a coastal homeowner watching water lap at the foundation of his house.

“Building land slowly may cost less,” says Caffey, “but in some cases it be might better to spend more money and build fewer acres faster. Should we invest in levees to protect all of our communities, even though we know levees are unsustainable

in the long run? How do we spend the money we do have to address our local communities’ real and present danger while acting responsibly toward Louisiana’s future? And who decides how to do restoration, when to do restoration, whom to do restoration for? These are questions we have to ask, the discussions we must have.”

“Ironically, disasters – storms and oil spills – have

given Louisiana resources to address its coastal crisis,” says Johnson. “Deepwater Horizon fines and penalties present a once-in-a-generation opportunity for conservation investment. With its Master Plan, Louisiana is well positioned to make the most of investing in coastal restoration. Needs still outweigh current resources, but I’m optimistic that if the state can maintain its focus, it will achieve success.” **WM**

## NEW ENDEAVORS BENEFIT FROM CWPPRA'S EXPERIENCE

# CWPPRA Lays the Cornerstone for Coastal Restoration

**T**he Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) has been building land and enhancing coastal protection in Louisiana for more than 20 years. While many coastal residents cite acres of newly created fish and wildlife habitat, recovering marshes and restored barrier islands as significant achievements, CWPPRA's contributions to coastal restoration are largely off the map.

### CWPPRA develops restoration expertise

A pioneer in designing and building coastal restoration projects, CWPPRA has swelled the body of scientific and engineering knowledge that informs such endeavors worldwide, and the information collected by CWPPRA's Coastwide Reference Monitoring System (CRMS) is believed to comprise the largest and most comprehensive data base

on wetland conditions anywhere. "CWPPRA's knowledge and experience help us to limit risk and increase the likelihood of success when designing and implementing coastal restoration projects," says Mel Landry, marine

CWPPRA has learned that restoring the coast involves the complex interplay of many factors, not the least of which are people. Interagency cooperation, scientific collaboration, citizen participation and political alliances are components as essential to restoration as are sand, sediment and vegetation.







André de Alencar Lyon, Natural Resources Conservation Service



U.S. Fish and Wildlife Service



U.S. Fish and Wildlife Service



U.S. Fish and Wildlife Service

What technique works best where? For years CWPPRA has been examining innovative techniques for restoring the coast. Its demonstration project program allows scientists and engineers to test new ideas on a small scale and with a relatively modest budget while providing restoration agencies with cutting-edge science and field-tested results. In the projects pictured above, barriers of various materials, configurations and placements were evaluated for their efficacy in protecting shorelines.

habitat resource specialist and NOAA’s technical lead for restoration in Louisiana under the Natural Resource Damage Assessment (NRDA). “Thanks to CWPPRA, we know what is likely to work – and what isn’t.”

Such knowledge was acquired over decades by the scores of professionals involved in CWPPRA projects. “CWPPRA has served as a training ground for

biologists, ecologists, project planners and engineers,” says Kevin Roy, a biologist with the U.S. Fish and Wildlife Service. “The expertise available to restoration professionals today is due in large part to CWPPRA.”

### CWPPRA fosters and tests new tools and techniques

CWPPRA has become known as an incubator for new ideas and approaches to restoring coastal ecosystems. Through its demonstration-project program, CWPPRA can test innovations on a small scale and develop an inventory of successful methods to incorporate into larger projects. CWPPRA demonstration projects have experimented with materials and techniques applicable to a vari-

ety of types of projects, from shoreline protection to water diversions, and in all kinds of coastal ecosystems, from freshwater marshes to barrier islands. Some CWPPRA projects, like the Mississippi River Reintroduction into Bayou Lafourche, have been taken on by other entities (in this instance, by the state of Louisiana), and some complete their service residing in the body of research that helps coastal specialists resolve challenging problems.

### CWPPRA models interagency cooperation and collaboration

“CWPPRA is administered by five federal agencies and the state of Louisiana,” says Britt Paul, assistant state conservationist for water resources at the Natural

Resources Conservation Service. It is a structure that many feared would hobble its effectiveness. “At first it was difficult to envision all of us coming to agreement on anything. Initially it wasn’t easy, and we experienced growing pains. But now, for the most part, we work together toward the same goals.”

CWPPRA has proved that agencies that naturally have different priorities and different perspectives not only can work together but benefit by doing so. “A big strength of CWPPRA is a cross-agency structure that fosters dialog, flexibility and compromise,” says Roy. “Although ‘restoration by committee’ might sound difficult, CWPPRA has evolved this practice over time. It serves as a model for other multiple-agency organizations, including those administering funds from Deepwater Horizon fines and penalties.”

### CWPPRA involves the public

CWPPRA’s process of project selection and development promotes transparency and encourages citizens’ participation. “CWPPRA has always been a grass-roots, ground-up program,” says Roy. “Task Force meetings are open to the public and invite public comment. Anyone – an individual, an organization, a parish, an agency – can nominate



From mud to marsh grass, CWPPRA projects have been combating coastal land loss in Louisiana since 1990. While every restored acre is valued, many of CWPPRA’s most notable contributions are intangible: serving as an incubator for developing different restoration approaches, fostering public involvement in project selection and modelling interagency cooperation.

a project and monitor the process that narrows the list and moves the best projects forward. Sometimes it’s difficult – there has to be a lot of give-and-take and willingness to compromise – but it works.”

### CWPPRA designs projects that others can construct

Each year CWPPRA places promising candidates on its Priority Project List. The project then moves through evaluation into engineering and design. Sometimes other restoration entities – Louisiana’s Coastal Protection and Restoration Authority, for example – take a selected project and assume responsibility for its construction. “By identifying issues of local concern and having ‘shov-

el-ready’ projects, CWPPRA increases the overall chances for restoration success,” says Roy. “Attracting other programs with readily available construction money supports CWPPRA’s interest in moving restoration forward, and CWPPRA enhances these programs by providing projects that they can implement quickly.”

“Though some of CWPPRA’s approaches to restoring the coast have changed over the years,” says Paul, “CWPPRA’s mission remains essentially the same: to protect coastal vegetated wetlands. While rebuilt marshes are critical to Louisiana’s future, CWPPRA’s contributions, including its ability to work with other parties toward a common goal, reach far beyond that measure.” **WM**

“THERE IS WORK OF ALL SHAPES AND SIZES TO BE DONE”

## CWPPRA’s Role Key as Restoration Gains Speed

“For years the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) was the only game in town,” says Brad Inman, a senior program manager with the U.S. Army Corps of Engineers. “The program is renowned for putting projects on the ground. Though never lavishly funded, for more than two decades CWPPRA has been a steady and reliable player in Louisiana’s coastal restoration arena. It remains a crucial channel for federal support.”

Since its passage in 1990, CWPPRA has constructed more than 100 projects. Some of them have involved only a few hundred acres while others have encompassed thousands. Cumulatively, CWPPRA projects

built to date have the potential of protecting up to 100,000 acres of Louisiana’s wetlands. To augment such efforts to save its coast, the state of Louisiana has devised a Master Plan that sets coastal priorities, delineates large-scale projects and coordinates construction.

The importance of CWPPRA’s experience and expertise is clearly evident in the Master Plan. Louisiana’s Coastal Protection and Restoration Authority (CPRA), the agency responsible for the plan’s development, drew on the deep understanding of wetland ecology and the extensive practical skills of CWPPRA-affiliated restoration professionals to craft a strategy based on sound scientific and engineering principles.

The plan cites CWPPRA as key to meeting the state’s goals, especially by providing cutting-edge, field-tested information and by trying out new processes to ensure the success of larger projects.

Over the years CWPPRA has tested and vetted numerous different concepts for restoring the coast, conducting experimental, small-scale demonstration projects to reveal the potential as well as the pitfalls of new ideas. While such projects have

Scientists and engineers working for CWPPRA agencies have accumulated a trove of knowledge about restoration techniques that work successfully in Louisiana’s unique coastal environment. CWPPRA’s experience will guide Louisiana as it implements its Master Plan for Coastal Protection and Restoration.





Ed Levine, Scientific Support Coordinator, Office of Response and Restoration, National Ocean Service

increased the knowledge base of restoration science, the need to explore innovative approaches continues. “Techniques that CWPPRA refined are now part of the state’s Master Plan,” says Morgan Crutcher, a policy analyst with the Coalition to Restore Coastal Louisiana. “CPRA relies on CWPPRA for developing innovations, and that will not change.”

“Other programs focus only on construction and do not offer the diversity of experience and approaches that CWPPRA contributes,” says Britt Paul, assistant state conservationist for water resources at the Natural Resources Conservation Service. “No technique works the same way in every place; we count on CWPPRA to provide a mix of project

types and tools to restore our coast.”

### Building more than land

CWPPRA’s contributions are not limited to tools, techniques and acreage. Over its 24-year history the program has become renowned for modeling interagency cooperation and public engagement. “There is widespread support for CWPPRA,” says Inman. “CWPPRA’s experience, coupled with its project selection process that involves the public and determines local concerns, gives valuable guidance to the state’s Master Plan.”

With its proven track record, its ability to respond to critical, local issues and its competency in swiftly putting projects on the ground,

Repairing damages from hurricanes and floods costs the Gulf Coast region about \$14 billion annually<sup>1</sup>. Rebuilding after Hurricane Katrina cost the federal government approximately \$45.5 billion<sup>2</sup>, with about \$14 billion spent to rebuild New Orleans’ levee system<sup>3</sup>. With no action, the land-sea interface will continue to move inland and threaten communities, whereas rebuilding healthy wetlands will mitigate storm surge, flooding and wave energy.

<sup>1</sup> *The Importance of Mississippi Delta Restoration on the Local and National Economies*, Batker, David et al <sup>2</sup>[www.datacenterresearch.org](http://www.datacenterresearch.org)  
<sup>3</sup> [www.marketplace.org](http://www.marketplace.org)

CWPPRA is well positioned to supplement restoration efforts financed by Deep-water Horizon oil spill fines and penalties. “Even while the longer process of large-scale projects is unfolding, the kind and scale of projects that CWPPRA conducts remain vital to developing a sustainable coast,” says Paul. “CWPPRA has the



Natural Resources Conservation Service

As efforts to restore Louisiana's coast accelerate with the implementation of the state's Master Plan, CWPPRA will continue to improve the wetland restoration "tool box" by building projects, cultivating innovations and refining techniques.

capacity to provide shovel-ready projects when funds become available, moving quickly from project selection through design to implementation. Even as better-funded efforts come on board, CWPPRA continues to have a role to play.”

“In my opinion, CWPPRA is vital,” says Skip Haller, a Louisiana private landowner. “I am 73 years old. I have watched the coast deteriorate and I have watched it partially recover. Every effort to rejuvenate Louisiana’s marshes is important, but CWPPRA gets projects done. If it continues alongside other state and federal programs, I am optimistic that Louisiana’s wetlands will again become sustainable and flourish.”



## Possible funding sources for Louisiana coastal restoration include

### Coastal Protection and Restoration Trust Fund

- \$30 million annually from royalties and severance taxes on mineral development.

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

- \$80 million annually; after 2018, funds are dependent on the act's reauthorization.

### Gulf of Mexico Energy Security Act (GOMESA)

- \$200 million to \$500 million directed to Louisiana annually under GOMESA's Phase II, beginning in 2017. The act shares Gulf of Mexico Outer Continental Shelf (OCS) oil and gas leasing revenue among Gulf states and the Land & Water Conservation Fund for coastal restoration projects.

### Louisiana Department of Natural Resources (LDNR) in-lieu fee mitigation fund

- \$1 million annually. As an in-lieu mitigation sponsor, LDNR combines mitigation fees to fund restoration projects.

### Louisiana Department of Transportation and Development (LDOTD)

- \$4 million annually. LDOTD continues to contribute to restoration funding following the passage of Louisiana's Coastal Protection and Restoration Act, which merged LDOTD's levee engineers with the Department of Natural Resources' scientists and engineers.

### Water Resources Development Act (WRDA)

- \$7 billion authorized for Louisiana in 2007; continued funding highly unpredictable. Act authorizes studies and small projects for navigation, flood control, environmental restoration, recreation, hurricane and storm damage reduction, bank stabilization, ecosystem restoration, shore protection, aquifer storage and recovery and navigation mitigation. In Louisiana, WRDA projects implemented by the U.S. Army Corps of Engineers in conjunction with the state.

Currently amounts from other potential sources, such as income from conservation banking, transfers from state budget surpluses and revenue from local or state tax increases, are only speculative.



Natural Resources Conservation Service

“Dedicated restoration funding is critical. Without funding, a plan simply sits on a shelf.”  
*Mabus Report, America's Gulf Coast: A Long Term Recovery Plan after the Deepwater Horizon Oil Spill, published in September of 2010*

# WATERMARKS INTERVIEW WITH JEROME ZERINGUE

Chairman of the Coastal Protection and Restoration Authority  
and the Governor's Executive Assistant for Coastal Activities

## Is Money Enough?

**WATERMARKS:** For years the news from coastal Louisiana has been gloomy and seems only to get worse – continuing land loss, battered by storms, drenched by a massive oil spill. What keeps us from walking away from the coast?

**ZERINGUE:** Louisiana's coast is too valuable, too important to the entire nation, to abandon it. Restoring our coast is both the smart thing and the right thing to do.

Some inherently pessimistic people say efforts to restore the coast are too little, too late, but both science and our experience indicate that Louisiana's Master Plan will work, that we can achieve our land-building goals. We base our optimism on two proofs of success: how much land we are creating through programs, including CWPPRA, that are on the ground right now; and the numerous measures, from building flood walls to adopting building codes, that we

are taking to better protect our communities from storms.

**WATERMARKS:** Environmental restoration is expensive! Is money the only obstacle to restoring the coast?

**ZERINGUE:** Money may not be the only obstacle, but it is a major one. Implementing the state's Master Plan basically depends on two things: getting enough money and finding enough sediment for our land-building goals.

Even though upstream locks and dams have cut the Mississippi River's sediment load to about half of its historic levels, that's still enough to build the land we want. But right now we're using less than one percent of what's available. We need to maximize its use, find better ways to capture it and to get it from the river into the wetlands.

And, similarly, we need to maximize every possible funding stream, both those



already in place like CWPPRA, CIAP and GOMESA, and those with potential to develop. They include opportunities in the emerging field of conservation banking, through which environmental processes become marketable. Businesses or communities could compensate for their failure to meet environmental regulations by funding restoration and receive credit for the wetlands filtering water or sequestering carbon.

**WATERMARKS:** How much money is enough money? How do we know if it's enough?

**ZERINGUE:** The Master Plan calls for spending \$50 billion over 50 years. We based those numbers on a realistic expectation of funding and an assessment of what we can build with it over that time frame.

But the beauty of the Master Plan is that it is dynamic, just like the natural system. Fifty is scalable; if we have more, we will do more. If we have less, we'll do what we can with what we have. We're not focusing on the amount of money or the number of years, but on implementing sustainable projects.

The plan will be adaptively managed, just as projects are. By law we will re-evaluate the Master Plan every five years to reaffirm our assumptions and our goals, to ensure we're using the best available science and technology and to modify projects to improve performance.

**WATERMARKS:** Why should the nation help to pay the price of restoring Louisiana's coast?

**ZERINGUE:** In Louisiana we are now dealing with the results of decisions made decades ago to build levees and manage the Mississippi River. Those decisions brought a lot of good to the entire country, and the nation still depends on the resource of the river and its delta. So it's up to us all to reverse the trend of land loss and achieve sustainability in Louisiana's wetlands.

Look at the benefits derived from Louisiana's coast – oil and gas, seafood, a navigation system, habitat for

Neotropical avian migrants – the ecological benefits to the nation are unmatched anywhere. There are other special places in the country – for example, the Everglades or the San Joaquin Valley – but if they disappear, it doesn't affect anyone living outside of them. But if we lose Louisiana it will affect everyone in America, anyone who eats Louisiana's seafood or relies on goods that move in and out of its ports or enjoys zaedeco music and New Orleans jazz. It is not just square miles of land that the nation is losing, but an irreplaceable part of its economy, culture and history. **WM**

## WETLAND ECOSYSTEM SERVICES – PRICELESS!

- Purification of air and water
- Mitigation of hurricanes, floods and droughts; moderation of wind and wave force
- Detoxification and decomposition of wastes
- Partial stabilization of climate; carbon sequestration
- Maintenance of biodiversity
- Provision of recreation and aesthetic beauty

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**I**narguably, coastal restoration is expensive, and planners admit that securing \$50 billion to finance Louisiana's 50-year plan presents a challenge. But the costs of losing Louisiana's wetlands dwarf the expense of restoration. A 2010 report published by Earth Economics studied the economic impact of restoring – or failing to restore – Louisiana's wetlands. Three scenarios were evaluated:

- “No action:” do nothing
- “Halting net land loss:” conduct ongoing restoration to offset annual loss
- “Sustainable restoration:” restore 40% of the wetlands lost over the past 80 years in addition to offsetting annual loss

The entire report, *Gaining Ground – Wetlands, Hurricanes and the Economy: The Value of Restoring the Mississippi River Delta*, by David Batkar, et al, can be downloaded from [www.eartheconomics.org](http://www.eartheconomics.org).



## “NO ACTION” SCENARIO

Estimate of economic loss over 100 years:

### \$41 billion loss

- ✓ Deterioration of the delta and loss of ecosystem services continue
- ✓ Risk of loss of life increases
- ✓ Damages to communities, infrastructure and economic assets increase
- ✓ Relocation of people and economic productivity inevitable
- ✓ Storm-associated costs of insurance, relief efforts and national energy prices likely to rise

## “HALTING NET LAND LOSS” SCENARIO

Estimate of economic impact over 100 years:

### Avoids economic losses

- ✓ Small projects result in no net loss or gain of land
- ✓ Avoids losses under “no action” scenario
- ✓ Functions of the Mississippi River Delta are not restored
- ✓ No increase in storm protection or other ecosystem services

## “SUSTAINABLE RESTORATION” SCENARIO

Estimate of economic benefit over 100 years:

### \$62 billion benefit

- ✓ Large projects reconnect Mississippi River sediment, water and energy to the delta
- ✓ Avoids losses under “no action” scenario
- ✓ Recovery of approximately 40% of wetlands lost since 1930
- ✓ Hurricane protection of New Orleans and other delta communities increases
- ✓ Benefits continue to accrue in the future

