

WATER MARKS

Summer 1998

WaterMarks is published quarterly 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 enhancement projects nationwide, designating approximately \$35 million annually for work in Louisiana. The state contributes 15 percent of the cost of project construction.



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About this Issue's Cover . . .

Cypress stands are a common feature in wetlands throughout Louisiana.

(ACOE photo)

Louisiana Coastal Wetlands Planning, Protection and Restoration News

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For more information about Louisiana's coastal wetlands and efforts planned and under way to ensure their survival, check out these sites on the World Wide Web:

<http://www.lacoast.gov>

<http://www.savelawetlands.org>

Icon Legend

CWPPRA engineers rely on four basic techniques when creating, protecting or restoring coastal wetlands. In issues of *WaterMarks*, the techniques used in each project are identified by the icons explained below.

Vegetative

Vegetative techniques replace plant life lost through water ponding, erosion and saltwater intrusion.

Structural

Structural techniques use natural and man-made materials to protect existing wetlands subject to erosion or subsidence.

Sedimentary

Sedimentary techniques mimic the natural process of accretion (wetland building) by using diverted or dredged sediments.

Hydrologic

Hydrologic techniques increase or decrease the amount of water flowing into or out of wetlands, returning water flows to more natural patterns.

Hurricanes: Foul Winds or Fair?

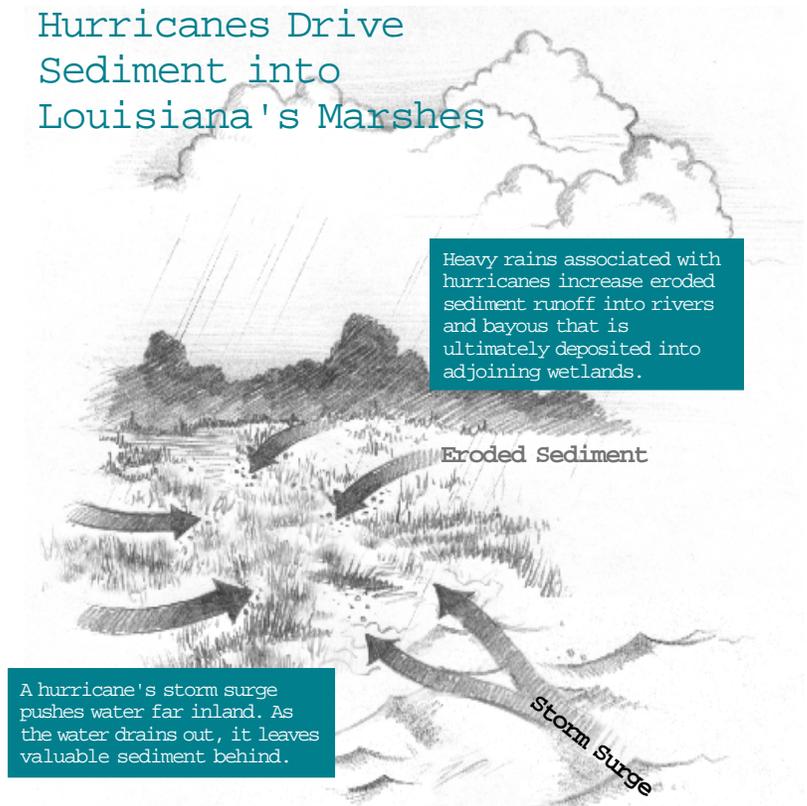
In the early morning hours of August 26, 1992, Hurricane Andrew slammed into the southern coast of Louisiana. With wind gusts of over 130 mph and a 15-foot storm surge pushing far inland, the storm's immediate impact on Louisiana's wetlands and barrier islands was soon apparent:

- millions of fish killed by oxygen depletion
- 70 percent of the oyster reefs in the Barataria-Terrebonne National Estuary damaged by a blanket of sediment
- major sand losses on 70 percent of Louisiana's barrier islands
- barrier islands stripped of beach and dune vegetation that provided habitat for marine birds
- coastal marshes shorn of above-water vegetation

In spite of these grim outcomes, scientists like Karen Westphal of the Center for Coastal Energy and Environmental Resources say there can also be a fair wind associated with hurricanes, even those like Andrew. "Although they are clearly destructive, in the long run hurricanes can also have positive effects," says Westphal.

continued on the following page...

Hurricanes Drive Sediment into Louisiana's Marshes



Marshes can actually benefit from the effects of hurricanes and related weather systems. First of all, hurricanes typically increase precipitation in the regional area. This added rainfall increases eroded sediment runoff into rivers and bays. As these water pathways overflow their banks, they deposit the extra sediment in marsh and wetland areas, encouraging wetlands growth. The second beneficial effect relates to the hurricane's storm surge. As this surge rides the front edge of the hurricane front, it pushes water up into Louisiana's marshes and rivers. While this water usually drains out in 24 hours, the sediment it carries is left behind, further nourishing the marsh.

Hurricanes:

Foul Winds or Fair?

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For example, the intensity of rain during hurricanes and tropical cyclones causes high soil runoffs, even when conditions have been dry. As a result, rivers carry high levels of sediment to estuaries threatened by rising sea levels. Storm surges that accompany hurricanes play a similar role by dispersing massive quantities of water deep into the state's marshes. These flood waters normally drain within 24 hours, and according to Dr. Abby Sallenger of the USGS

Center for Coastal Geology, "It's absolutely true that this hurricane-caused flooding adds critical sediment and nutrients to marshes."

Studies also show that hurricanes generally have little long-term effect on emergent marsh. While foliage may be stripped, the stimulation from new nutrients brought by the hurricane quickly returns the beds to their original condition.

Even the erosion to beaches, which is often distressingly obvious, may have benefits to other parts of

the coastal ecosystem. For example, in those instances in which hurricanes cut deep into beaches, the result can be the formation of new habitat that supports dunes grasses, salt marsh and sea grasses.

Some scientists also contend that in the long run mangroves and other tree species benefit from the effects of hurricanes.

Even the erosion to beaches may have benefits to other parts of the coastal ecosystem.



Despite the benefits that hurricanes can provide to coastal wetlands, communities like this one along the Barataria Bay waterway can suffer devastating damage.

(ACOE photo)

They say hurricanes perform the same cleansing function as forest fires in maintaining the overall conditions for healthy coastal forests.

But Westphal cautions that making the case for the long-term benefits of hurricanes shouldn't obscure the very real and significant negative consequences. "You need to see both sides of this issue," says Westphal. "And that's because fundamentally it's a debate about ecological trade-offs. Just how those trade-offs balance out, however, is going to take a lot more hard data." m

Eight years and more than eighty projects later, the Breaux Act's 10,000 acres of protected wetlands look good to pundits and politicians, but what about the view at ground zero? Are completed priority projects living up to local expectations? Here's what some project managers and coastal residents have to say about two completed projects.

Projects at Ground Zero:

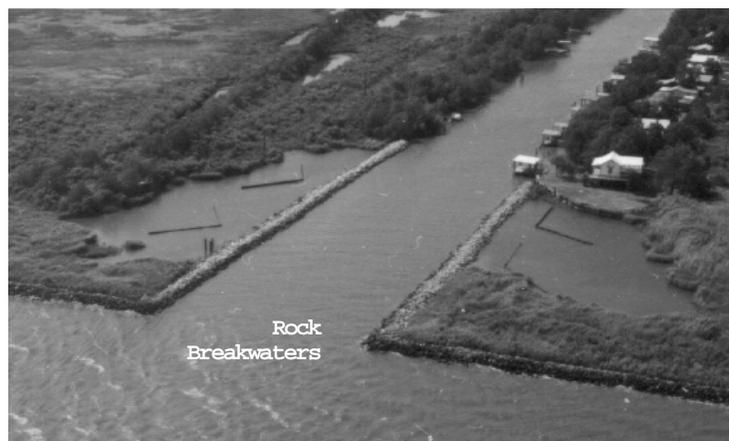
A Local Perspective

Boston Canal/Vermilion Bay Shoreline Protection



The photo above shows the junction of Boston Canal and Vermilion Bay before project construction. Water was displacing marsh ground and encroaching on local structures.

(NRCS photo)



Rock Breakwaters

Post-construction results are illustrated dramatically in the second photo above. The rock breakwaters are limiting the effects of tidal erosion and have helped the sediment-trapping fences accumulate new ground.

(ACOE photo)

"It's certainly put an end to erosion," says Donald Sagerera, Vermilion police jury president, as he stands along a rock breakwater, part of the Boston Canal/Vermilion Bay Shoreline Protection Project. Completed in two phases in late 1994 and mid-

1995, the NRCS/DNR project protects more than 466 acres of freshwater wetland and open water along the northwest shore of Vermilion Bay.

Before project construction began, banks at the junction of Boston Canal and Vermilion Bay were eroding at an alarming rate. Engineers decided that rock breakwaters and sedi-

ment-trapping fences installed along the shoreline would lessen the erosion and improve sediment accumulation. "Before long, dirt simply displaced the eroding water," explains Sagerera. Only eight months after construction, volunteers helped plant nearly 14 miles of smooth marsh cordgrass to help strengthen the newly accumulated soil.

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So Far, So Good: Looking Back

1989

Louisiana establishes trust fund for coastal restoration.
The trust fund sets aside \$5 to \$25 million of taxes and royalties per year from oil and gas reserves for coastal wetland restoration.



November 1990

Coastal Wetlands Planning, Protection and Restoration Act (CWPRA or Breaux Act) signed into law by President Bush.
This legislation provided the first national mandate for coastal wetlands restoration, designating 70% of its authorized funds to Louisiana restoration projects (\$35 - 40 million per year).



October 1991

Priority Project List #1 approved.
Fourteen restoration projects approved with an estimated cost of \$48 million.



November 1991
Priority Project List #2 approved.
Fourteen restoration projects approved with an estimated cost of \$45 million.



January 1991

Task Force meets for first time.
The Breaux Act Task Force is given administrative responsibilities for federal and state restoration projects in Louisiana. The Task Force represents the Department of the Army, Environmental Protection Agency, Department of the Interior, Department of Agriculture, Department of Commerce and the state of Louisiana.

October 1992

Priority Project List #2 approved.
Fifteen restoration projects approved with an estimated cost of \$54 million.



November 1992

Louisiana Coastal Wetlands Restoration Act approved.
The plan, prepared by the Task Force, sets the direction to the state of Louisiana for proposing wetland restoration projects, with a focus on natural processes.

at 8 Years of the Breaux Act

1993
Project List #3

Projects ap-
an estimated
illion.

1994

First project completed.
Vegetative Plantings
demonstration at West
blackberry covers 98 acres
at a total cost of \$15,000.

1993

Coastal Wetlands
Plan completed.
Prepared by the Breaux Act
responds to Congress'
to restore and prevent the loss
wetlands in Louisiana by
over 200 specific regional
with emphasis on restoring
processes that sustain wetlands.

June 1995

First issue of *Water Marks* published.

Published by the Breaux Act Task Force to communicate the magnitude of the crisis and the progress made toward restoring Louisiana's coastal wetlands.



July 1996

Tenth project completed.
Vegetative Plantings
Demonstration on Timbalier Island protects 169 acres at a cost of \$96,500.



Spring 1997

Coast 2050 initiated to integrate coastal restoration/protection efforts.

A joint planning initiative of the Louisiana Wetland Conservation and Restoration Authority and the Breaux Act Task Force, Coast 2050's goal is to develop community-based planning for a sustainable and productive coast.

Summer 1995

Breaux Act Task Force agrees to shift emphasis to "big picture projects."

At least two-thirds of annual funding dedicated to projects extensive enough to affect major portions of Louisiana's coastal basins.

August 1996

Breaux Act goes on-line at www.lacoast.gov

The home page informs visitors about Breaux Act's history, status of projects, facts and figures about coastal Louisiana and links to related informative sites.

November 1997

State's Coastal Wetlands Conservation Plan approved.

Plan's guarantee that state development will not result in net coastal wetland loss reduces Louisiana's share of project construction costs from 25 to 15 percent.

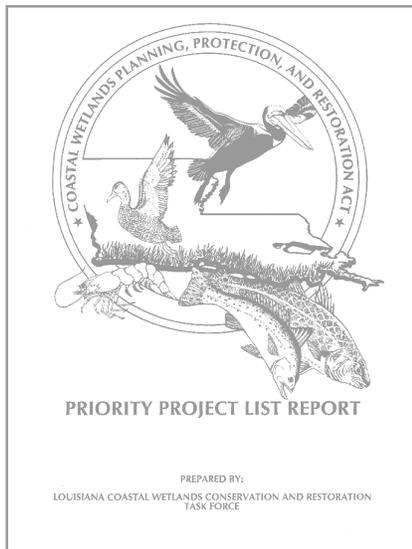
May 1997

Priority Project List #6 approved.

Eleven projects approved with an estimated cost of \$39 million.



Quick News



Task Force Chooses Candidates for 8th Priority List

Task Force agencies have selected 12 candidates to be evaluated for the 8th Priority Project List. Top vote-getters at a Planning and Evaluation Subcommittee meeting April 24 were Upper Oak River Freshwater Introduction Siphon, Sabine Refuge Marsh Creation (Revised), Hopedale Hydrologic Restoration, Bayou Bienvenue Pumping Station/ Terracing, Constance-Holly Beach Sand Beach Management Plan, and Humble Canal Hydrologic Restoration.

Task Force agencies will evaluate the 12 candidate projects for cost-effectiveness, longevity and sustainability, support for Restoration Plan strategy, supporting partnership, public support, and risk and uncertainty. The Task Force will make the 8th List selections in December. [m](#)

\$7.5 Million Projects Near Completion

Construction is over 50 percent complete on the Big Island Mining and Atchafalaya Sediment Delivery Restoration Projects in St. Mary's Parish. Work has been finished on the sediment delivery project, and about 40 percent of Big Island work is complete.

The \$7.5 million projects are designed to restore freshwater and sediment delivery processes to the northwestern and northeastern portions of the Atchafalaya River delta. The projects will initially create 1,200 acres of wetlands, with subsequent natural delta growth over the next 20 years expected to add an additional 3,000 acres of wetlands habitat. [m](#)



Construction on the first lobe island at Big Island is under way as shown in the photo above. Dredges collect sediment from the surrounding waters and pump it into the island area to build it up. (DNR photo)

West Belle Pass Project Under Way

The \$6.4 million West Belle Pass Headland Restoration project is now under construction. Approximately 2.5 million cubic yards of

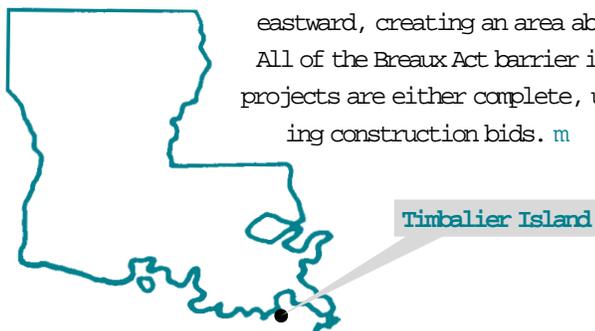


The West Belle Pass project area is situated behind the blue lines above. As dredged material is pumped into the project area, dry land eventually rises out of the open water and becomes marsh. (ACOE photo)

dredged material is being pumped into open water to recreate almost 200 acres of marsh on the western side of Belle Pass, in LaFourche Parish. The dredged material will be taken from Bayou Lafourche below Port Fourchon, providing incidental benefits to navigation. m

Work on East Timbalier Island Ready to Start

Designs are complete and work is expected to start Aug. 1 on two Breaux Act restoration projects on East Timbalier Island. Together, the two projects will create 215 acres of marsh. The first project will place 890,000 cubic yards of dredged material in three embayments along the shoreline, while the second will close breaches and reconnect the east and west ends of the island. Dredged material will be placed from the island's center to about 6,000 feet eastward, creating an area about 935 feet wide. All of the Breaux Act barrier island restoration projects are either complete, under way, or awaiting construction bids. m



Three Men And A Frog Speak Out

Singers Aaron Neville and Harry Connick Jr. and chef Paul Prudhomme have joined Kermit the Frog to support Louisiana's wetlands restoration efforts. The four celebrities will appear in 30-second public service announcements broadcast in Louisiana, as well as in other parts of the U.S., to raise public awareness of Louisiana's coastland deterioration. Kermit also uses the announcements to thank those who are restoring his relatives' homes. m



America's favorite amphibian takes center stage with three Louisiana celebrities in a new campaign to tell the nation about Louisiana's wetlands crisis. (DNR photo)

For the latest Breaux Act information, check out the web:
<http://www.lacoast.gov>

Projects at Ground Zero: A Local Perspective

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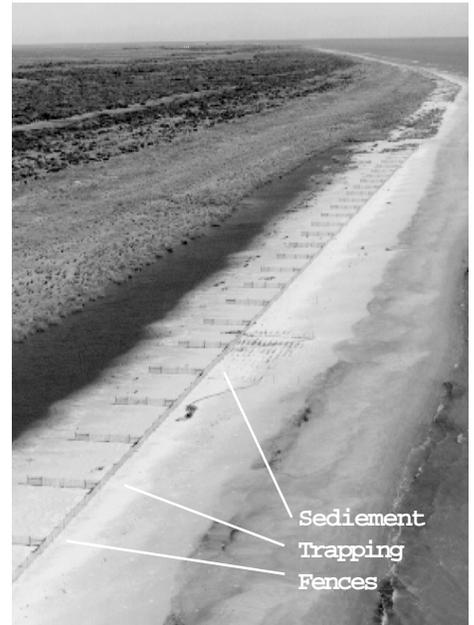
"It's all working according to plan and falling into place," says Segrera. "The area is stabilized, and the plants have established themselves." But he concedes that it's just the beginning. "Erosion is a gigantic problem everywhere along the coast. There are several hotspots that need to be addressed. There's still a lot to protect."

Timbalier Island Vegetative Plantings/ Sand-Trapping Fencing

"We're trying to hold the beach," explains Darin Lee, Louisiana Department of

Natural Resources geoscience research specialist, reviewing the Vegetative Plantings Demonstration Project on Timbalier Island in Terrebonne Parish. Lee is part of a team monitoring the project's techniques and determining their application to other projects throughout the coast.

Built in two phases during 1995 and 1996, the project relies on sand-trapping fences to capture wind-blown sand, and vegetation to hold the sand together. "The fences have worked as designed," says Lee. "As the sand accumulated, it created short dunes that helped repel tidal action." When enough sand accumulated, vegetation was



Sediment-trapping fences line the beach at Timbalier Island after project construction in 1995. (ACOE photo)

then placed throughout the dunes. According to Lee, large sections of vegetation survived and are beginning to spread.

"Some losses have occurred, however," adds Lee. Strong tidal action from the Gulf and severe storms over the last two years have killed off some vegetation on the Gulf side of the island.

"Unfortunately, vegetation loss accelerates erosion, so we lose a little ground." But that's to be expected, says Lee. "Projects like Timbalier are demonstration efforts. They give us the opportunity to learn what techniques work and how long they will take. Before we start working on a grand scale, we need to know what works on the small scale." m



In some projects, success is hard won. The photo above reveals some of the damage suffered by sediment-trapping fences at Timbalier Island from storms in the Gulf of Mexico. (NRCS photo)

The Water Marks Interview



Dave Cvitanovich

Executive Assistant, Plaquemines Parish Government

Hurricanes recurrently hammer at Louisiana's coastline, tearing up marsh grass, breaching beaches and destroying wildlife habitat. But while scientists debate the significance of a hurricane's long-term effects, policy makers in places like Plaquemines Parish struggle with the effects of a different kind of storm.

Hurricanes have been colliding with Louisiana's coasts for eons. In fact, they've been an essential part of the natural process that created Louisiana's intricate coastal ecosystem. Why all the concern today?

You used the phrase "natural process." Before people came to Louisiana, the process was natural. For example, the storm surge from a hurricane would push salt water up into a marsh, the water would quickly drain back to the ocean, and fresh water from a freely flooding Mississippi would recharge the system. The ecosystem was in balance.

And people disrupted all that?

Let's say we've paid a price for progress. If we're going to live in Louisiana, we're going to need structures like levees. But levees have altered the balance of nature. By holding back flooding on the Mississippi, levees cut off our marshes from the fresh water

needed to balance the negative effects of a hurricane's storm surge. So every day we lose vegetation; we lose marsh; we lose more of our buffer.

So what can be done?

That's the question, isn't it? I can tell you that I saw

Hurricane Danny rip out vegetation to the point where the marsh actually disappeared and there was nothing left but open water. I've watched hurricanes eat up a thousand feet of beach in a day and dump five feet of grass on an oyster bed.

But by far, the most dangerous storms are those clashes we have among ourselves. Oyster fishermen, shrimpers, sport fishermen, hunters, business people – we all make heavy and conflicting demands on coastal resources.

Too many user groups.

Exactly. And until everyone is willing to find some flexibil-

ity in their position, we're not going to find common ground when it comes to saving the wetlands. Everyone wants a future filled with strong coastal marshes. That kind of building effort is going to take a lot of sediment and nutrient-rich fresh water. At the same time, the shrimp and oyster industries aren't sold on fresh water. While it clearly improves conditions in the long run, it can wreak temporary, short-term havoc on their resource. But we can't afford to be deadlocked when our future is literally washing away.

So one of the things we're working hardest at is opening up the lines of communication between these user groups. It's a high-wire act, and it's not unusual for everyone to be unhappy with us at once. But I've always believed that if you say nothing and do nothing, you are nothing. And unless the people of Plaquemines Parish stand together, in not too many years we're going to have nothing. [m](#)

"Until everyone is willing to find some flexibility in their position, we're not going to find common ground when it comes to saving the wetlands."

