Louisiana Coastal Wetlands Planning, Protection and Restoration News

Water Marks

Winter 1998

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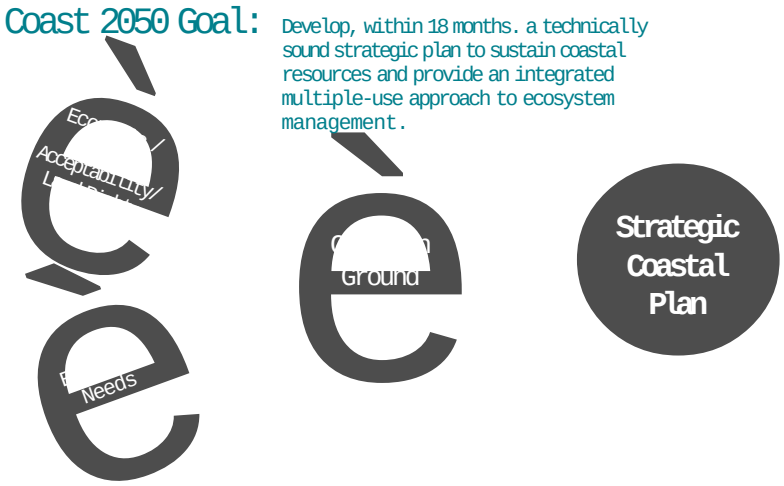
State, Federal and Local Officials Unveil Coast 2050 Initiative

There's always someone saying that the sun will come out tomorrow, but coastal Louisiana's tomorrow still looks gloomy and cloud-covered. Projections about coastal land loss unveiled earlier this year by Louisiana State University paint a grim forecast for the future of coastal Louisiana. But a new venture among coastal restoration's key players shows strong promise for the coast's future.

Assembled over the summer, the new program — called "Coast 2050" — is a cooperative effort among the Louisiana Coastal Conservation and Restoration Task Force, the Louisiana Wetland Conservation and Restoration Authority, and Louisiana's coastal parishes. Together, these agencies will work to resolve Louisiana's growing wetlands and coastal land loss problems.

Improving Cooperation

At the heart of Coast 2050 is the need to establish better coordination among agencies in charge of coastal restoration. "In the past, we've all been working toward the same goal but going about it in different ways," explains Col. Bill Conner, district engineer for the New Orleans District of the U.S. Army Corps of



Coastal Restoration Goes to Washington

Louisiana's coastal restoration experts met with a White House working group this fall to review past, present and future coastal restoration efforts in Louisiana. Members of the White House Interagency Working Group were informed about Louisiana's accomplishments and introduced to the Coast 2050 initiative during the meeting. The group has since recommended quarterly follow-up meetings to keep Washington advised of wetlands issues in Louisiana. m

Icon Legend

CWPPRA engineers rely on four basic techniques when creating, protecting or restoring coastal wetlands. In issues of *Water Marks*, 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.

Engineers and chair of the Louisiana Coastal Conservation and Restoration Task Force. "Now, with every significant player on the same field, we can start working as a team to speed up the process."

And speeding up the process is exactly what Coast 2050 intends to do. Developing a "...technically-sound strategic plan to sustain coastal resources and provide an integrated multiple use approach to ecosystem management" is the goal Coast 2050 plans to meet before December 1998. "It essentially means that we want to implement a plan that ensures the continued livelihood of the coastal habitat with as small effect as possible on coastal users and residents," explains Conner. The new, uniform plan will build on current restoration efforts and integrate planned efforts from existing programs like the Breaux Act (CWPPRA).

Since its inception, Coast 2050 has held a series of meetings across coastal Louisiana, gathering comments and input from coastal residents, business and industry, and state, federal and local agencies. Once these meetings are complete, the member agencies will meet to review the meeting results and existing restoration efforts before formulating the strategic plan. m

About the Cover . . .
Volunteers plant smooth cordgrass (*Spartina alterniflora*) along one of Louisiana's many coastal beaches.

Water Marks

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Water Marks is published twice 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 enhancement projects nationwide, designating approximately $35 million annually for work in Louisiana. The state contributes another 25 percent toward the costs of project construction.

Task Force member agencies:

- Department of the Army
- Department of Agriculture
- Department of Commerce
- Environmental Protection Agency
- Department of the Interior
- State of Louisiana

Please address all questions, comments, suggestions and changes of address to:

Water Marks Editor
Public Affairs Office
New Orleans District
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, LA 70160-0267
(504) 862-2201
http://www.lacoast.gov

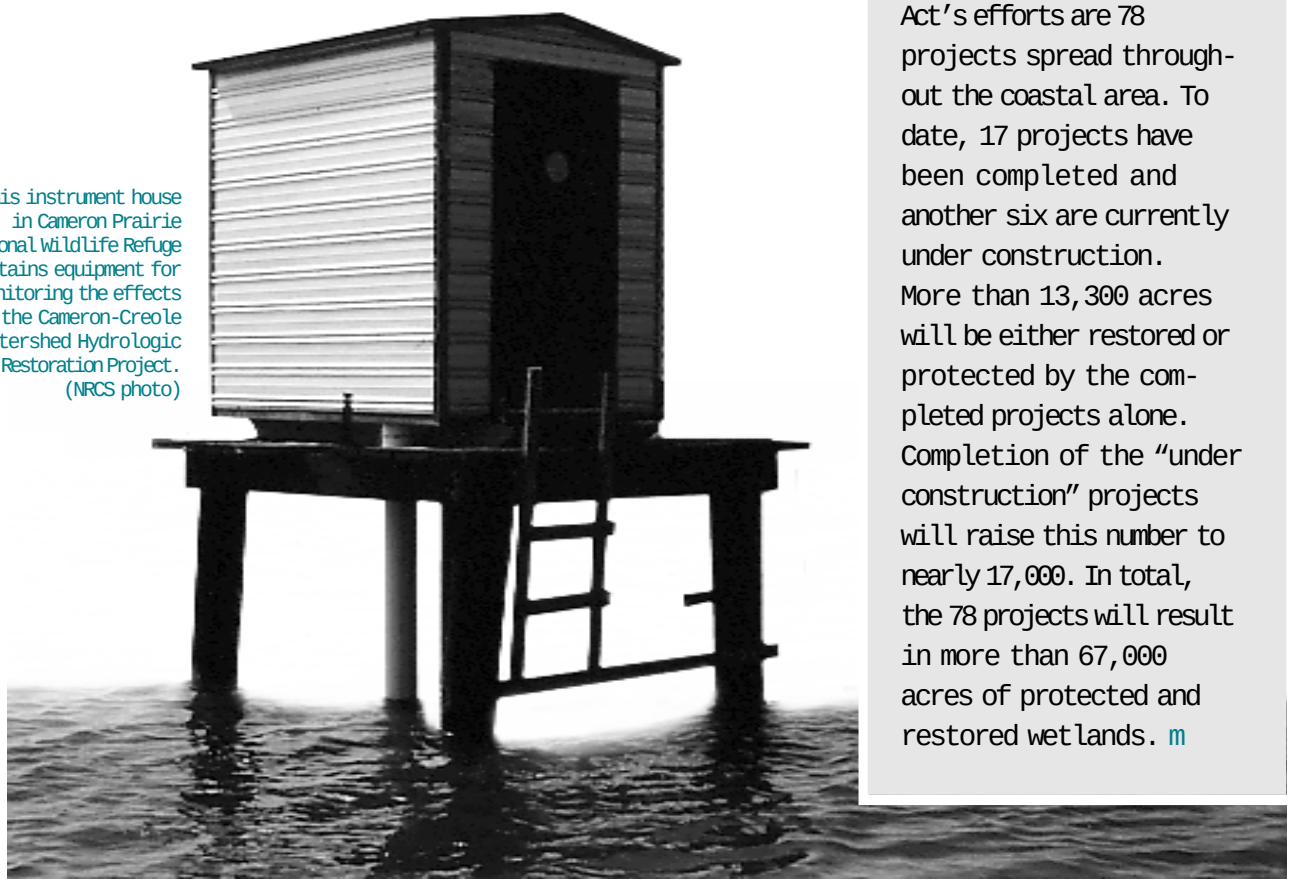
Five Coastal Restoration Projects Dedicated

Five coastal restoration projects that will restore or protect almost 10,000 acres of wetlands in Cameron and Calcasieu parishes were dedicated August 12 at Cameron Prairie National Wildlife Refuge. U.S. Senator John Breaux and members of the Louisiana Coastal Wetlands Conservation and Restoration Task Force took part in the ceremonies.

The five Breaux Act-funded projects are:

- Cameron-Creole Watershed Hydrologic Restoration
- Cameron-Creole Maintenance
- Cameron Prairie National Wildlife Refuge Shoreline Protection
- Clear Marais Bank Protection
- Sabine National Wildlife Refuge Shoreline Protection

The federal agencies, working with the Louisiana Department of Natural Resources, which built the projects were the U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, and Natural Resources Conservation Service. m



This instrument house in Cameron Prairie National Wildlife Refuge contains equipment for monitoring the effects of the Cameron-Creole Watershed Hydrologic Restoration Project. (NRCS photo)

The Acres Keep Climbing

At the core of the Breaux Act's efforts are 78 projects spread throughout the coastal area. To date, 17 projects have been completed and another six are currently under construction. More than 13,300 acres will be either restored or protected by the completed projects alone. Completion of the "under construction" projects will raise this number to nearly 17,000. In total, the 78 projects will result in more than 67,000 acres of protected and restored wetlands. m

Six volunteers of a 150-member volunteer group attach webbing to a sand-trapping fence at Fourchon Beach along the Gulf of Mexico in Lafourche Parish. Volunteers constructed 5,000 feet of sand-trapping fence last April to help create new sand dunes on the beach, which has experienced dramatic erosion over the years. (NRCS photo)

Volunteers Work to Protect Fourchon Beach

A 5,000-foot sand-trapping fence built by volunteers along Fourchon Beach in south Louisiana is creating new sand dunes that will help protect the beach from further deterioration from the Gulf of Mexico.

Over 150 volunteers worked on the project last April in an effort organized on the local level by the Lafourche-Terrebonne Soil and Water Conservation District. Other agencies and sponsors involved included the U.S. Department of Agriculture – Natural Resources Conservation Service (NRCS), Louisiana Serve Commission of the Office of Lt. Governor Kathleen Blanco, Americorps members, and Chevron Oil Company.

"I can't say enough about the volunteers and their work to help our parish," said Warren J. Harang Jr., chairman of the local conservation district. "The volunteers, who included conservation district, NRCS and coastal zone management personnel, really worked hard that weekend to install the fence in the wind and rain. They hauled heavy posts, dug post holes, attached fabric webbing and did the hundreds of things necessary for the demanding job."

Over the years Fourchon Beach has been ravaged by wave action created by storms and hurricanes. According to Don Gohmert, NCRS state conservationist, sand-trapping fences have been successful in similar situations. "The constant wind from the Gulf blows sand and sediment along beaches and other shorelines, and the fences will help trap those particles to start the formation of sand dunes. The fence at Fourchon will work with nature to form sand dunes that will lessen and absorb the force of waves from the Gulf and also protect adjoining fragile interior estuary and marsh areas from erosion," said Gohmert.

The dunes and marsh areas along Fourchon Beach, which is near Grand Isle, work together to

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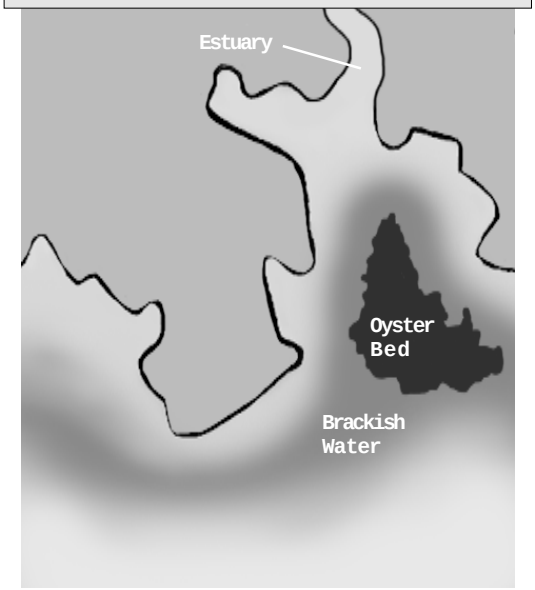
Oyster Changes in Store When Wetlands Are Restored

On a good day, the world may be your oyster, but if you're a coastal Louisianian, day in and day out the oyster might be your whole world. Oysters and oystering are the basis of a unique culture in southern Louisiana. For some families, generation after generation have devoted their lives to growing, harvesting and selling oysters. Like many industries, however, oystering is seeing changes, and some of those changes could come from efforts to restore Louisiana's coastal wetlands.

Despite oysters' ability to withstand wide variations in water salinity, drastic changes, like the constant introduction of fresh water into a traditionally brackish area, will kill resident oyster beds. Many of the proposed efforts to restore or protect Louisiana's coastal wetlands will require just such an introduction of large amounts of fresh water.

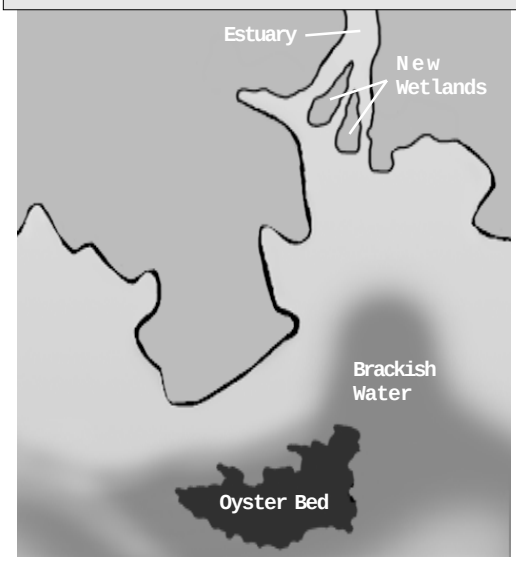
Will this freshwater influx destroy Louisiana's oyster industry? No, but it will change things. Most significantly, some oyster beds might ultimately be displaced. "It's easiest to visualize if you see a line in

An Oyster Bed: Present Day



In the illustration at left, an oyster bed is indicated by the black area, surrounded by brackish water (shown in gray) near the mouth of a freshwater estuary, such as a bayou or river.

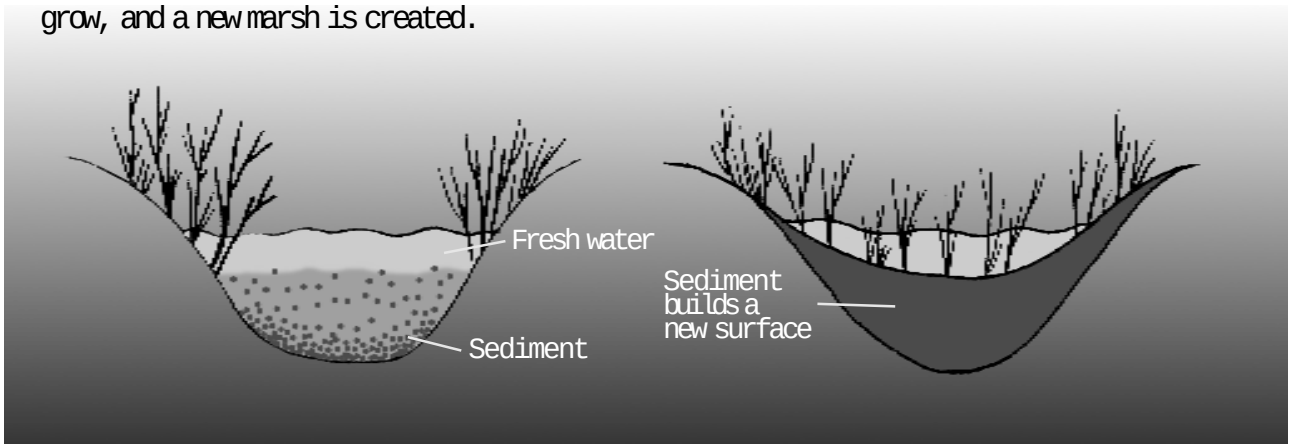
A Change in Location: 3-5 Years in the Future



In this illustration, increased freshwater flow in the nearby estuary has constructed new deltaic wetlands but also altered the salinity of the bay. With the change in water conditions, the original oyster bed has died off and a new oyster bed has developed in the newly-established brackish conditions. It is important to note, however, that this development is not immediate. It could take from three to seven years for this new bed to develop.

Accretion: Building New Wetlands

As fresh water moves into an area it carries sediment and nutrients along with it. These particles build up or accrete, allowing a new surface to rise out of the water. Plants begin to grow, and a new marsh is created.



the water where the oyster beds are," says one expert. "If the line is currently at Point A, by the time you introduce a large amount of fresh water near that location, you alter the salt content in the water and the line will move towards saltier water. It won't disappear. It simply moves farther away, and so will the oysters."

Unfortunately, neither market nor seed oysters simply move when they want to — they don't move at all. It will take time — probably a few years — for the oysters in the swimming veliger stage to re-establish themselves in new brackish conditions. So, why introduce fresh water and displace the oysters? Because fresh water is the primary ingredient for building new marsh. It's important to remember that fresh water carries nutrients and sediment. As fresh water is constantly moved into a new area, the nutrients nourish the marsh plants that help hold the soil in place. If there is sufficient sediment in the water, the sediment builds up, or accretes. Eventually, new surface rises out of the water, plants spring up, and a new marsh is born.

And healthy marsh is crucial to the continued viability of both oysters and oystering in Louisiana. As marsh decays, it forms the detritus and nutrients that grow the oyster's food. And, in addition to providing habitat for a wide variety of species, the coastal wetlands play a vital role in keeping salt water from intruding too far inland. Remember that oysters survive best in brackish water — water that isn't totally fresh or totally salt. In either of those environments, oysters eventually die. Also, most new wetlands that will be created near existing oyster beds will ultimately become brackish. Over the long term, creating new freshwater wetlands now will guarantee brackish areas in the future, thereby guaranteeing a future for oysters and oysterers.

Failing to build new marsh will only allow salt water to intrude farther and faster. Before long, much of the marsh will be gone and there will be no fuel for the estuarine food web. Salt water will have moved inland, and oysters and oystering families alike will be gone. m

CWPPRA *Quick News*

First Construction Phase Complete on Gulf Intracoastal Waterway to Clovelly Project

The first construction phase of the Gulf Intracoastal Waterway (GIWW) to Clovelly Hydrologic Restoration Project is complete. Three rock weirs, one channel plug with culvert, one channel plug and one rock channel lining have now been installed.

These components are the first phase in a Breaux Act project designed to return the flow of fresh water (from rainfall and an existing drainage pump) to natural watercourses, reducing the current rapid exit of water through man-made canals. The project will not only conserve fresh water, the lifeblood of marsh areas, but also reduce salinity spikes (areas of high salt concentrations from salt water). The project, located in Lafourche Parish, is jointly sponsored by the Natural Resources Conservation Services; Louisiana Department of Natural Resources, Office of Coastal Restoration and Management; and Lafourche Parish. m

A recently completed rock plug, installed as part of the GIWW to Clovelly Hydrologic Restoration Project, will protect fragile interior marshes from saltwater intrusion and rapid tidal exchange from exterior sources. (NRCS photo)

(L-R) Congressional, state and federal officials Jack Caldwell, Katherine Vaughan, Martin Cancienne, Don Gohmert and Mike Jefferson stand at the site of a rock weir constructed as part of the GIWW to Clovelly Hydrologic Restoration Project. (NRCS photo)

Raccoon Island Breakwaters Complete

Raccoon Island now has more protection from storms and hurricanes thanks to eight 300-foot offshore segmented breakwaters installed near the shore of the island. The large limestone rock structures will protect the newly rebuilt beaches and wetlands of this westernmost island of the Isles Dernieres chain, a location of prime importance to the Brown Pelican.

The Natural Resources Conservation Service (NRCS) and Louisiana Department of Natural Resources, Office of Coastal Restoration and Management, jointly sponsored the project.

Like Louisiana's other barrier islands, Raccoon Island is a remnant of early-period deltaic formation by the Mississippi River. These barrier islands play an important role in protecting the Terrebone, Barataria and St. Bernard estuaries and their surrounding wetlands from the destructive forces of high wave energy and storm surges.

In addition, the habitats provided by barrier islands are extremely valuable as migratory songbird resting and staging sites, waterfowl feeding and resting areas, and as protected shorebird feeding and nesting sites for gulls, terns and herons. m

An adult Brown Pelican tends to its chick. The birds are among those who will benefit from the new breakwaters at Raccoon Island.

Land Donation Moves Project Forward

The Natural Resources committees of the Louisiana House and Senate have approved the Louisiana Land and Exploration (LL&E) Company's agreement to donate land to the state for a number of planned restoration projects. This approval is the first step in a $5.5 million Breaux Act project, the West Belle Pass Headland Restoration Project, which will benefit 2,500 acres of marsh.

Designed to halt the continuing encroachment of Timbalier Bay into the marshes of Belle Pass, the project will entail building over 180 acres of land.

Plans for the project include the use of dredged material from the U.S. Army Corps of Engineers' maintenance dredging of Belle Pass and Bayou Lafourche, the filling of canals and small waterbodies, as well as construction of dams and controls. Construction was set to begin in early November. m

CWPtionary

Marsh Loss

Marsh loss is the destruction of marsh, often divided by location into two broad categories: shore erosion and interior loss. Shore erosion is the breakdown of shorelines caused by the actions of marine forces such as winds, currents, tides and wakes. Their continued effect gradually wears down the soil and eventually blows or washes it away.

Interior loss is caused by a variety of factors. The leveeing of the Mississippi River over the last two centuries so that people could inhabit Louisiana has been a major contributor. Historically, freshwater flooding from the rivers each spring left massive amounts of nutrient-rich sediment in the outlying wetlands. This sediment nourished existing plants and created new soil that was a fertile medium for vegetation. The roots of plants that sprouted in these soils helped hold the soil in place. Now that the levees keep the river from carrying sediments and nutrients to the wetlands, interior loss has increased.

The numerous canals, large ones for navigation and smaller ones for oil and gas extraction, that criss-cross the coastal marshlands are another cause of marsh loss. The canals that connect to the Gulf allow salt water to intrude into fresher wetlands. This saltier water can kill freshwater marsh vegetation, and if no other plants replace it, the soil can be washed away, causing a pond to form where marsh once was. In some places, hurricanes or other storms push salty water inland, killing the marsh. In addition, canals and their adjacent spoil banks can trap water and "drown" marsh — that is, the waterlogged soil allows chemical reactions that kill the plants.

A third cause of interior loss is the overabundance of nutria. These large rodents can eat out acres of marsh. Unless populations are controlled by hunting or trapping, this destruction will continue. m

Don Gohmert (left) and Gary Fine insert treated timbers into the sand as part of the Fourchon sand-fencing effort. The group worked to construct 5,000 feet of sand-trapping fence at Fourchon Beach in south Louisiana along the Gulf of Mexico. (NRCS photo)

Volunteers Protect Fourchon Beach ...

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decrease storm surges and the resulting flooding of homes and businesses during tropical storms or hurricanes. The new dunes will be stabilized with plants and planting techniques developed by the NRCS plant materials program. m

Watermarks Interview...

Continued from page 12

these changes were made maliciously; the consequences of actions just weren't known at the time. People were familiar with the bounty of the land and didn't think it could ever be seriously affected.

Q So what needs to be done?

A We have to be committed to not only restoring public wetlands but private wetlands as well. But we can't change what was done over 100 years in five years, and it can't be done without outside money. Through the Stream companies, we work very hard at securing wetlands restoration money from large funding sources.

Q How do you feel about current federal and state efforts to save the coastal wetlands?

A Louisiana moved forward on this issue long before the federal government. The state has been in the forefront of making wetlands loss a national issue because the people of Louisiana recognized the problem.

CWPPRA is a great project, but in its present form is underfunded for the monumental tasks needed. If you think about the huge navigation, flood control and drainage projects and the public money that was spent on them, it's clear that the budget for restoring the damage they caused needs to be increased logarithmically. One hurricane on the coast can cause so much damage that we can see right away that the funds are inadequate.

Q What is the relationship between private companies like yours and CWPPRA?

A We work with public agencies at both the idea and implementation stages. We have also donated the land rights and private matching funds for restoration projects taking place on property owned by the Stream family and put together similar arrangements on other corporate land. In some instances, we have provided input to parishes who were trying to be certain that restoration dollars were being funneled to areas that need it most.

Q What do you see for the future of coastal wetlands?

A I'm very optimistic. In any problem-solving process you have to recognize the problem, formulate solutions and finally implement them. We're past the recognition stage and are into formulation and implementation.

It's a particular challenge to help the private landowner. We can't just say, "Let nature take its course," when there have been such tremendous alterations to nature — that would be catastrophic. Our only option is through management.

But we need more education, more awareness and more money. There's such a spirit in Louisiana for all of this, but I don't know if that's true in Washington. Our own congressional delegation is solidly behind CWPPRA and other wetlands restoration efforts. I'm optimistic that this is a challenge that can be met, but it will take lots of work and lots of time. m

"I'm optimistic that this is a challenge that can be met, but it will take lots of work and lots of time."

David Richard

The *Water Marks* Interview: *David Richard*

David Richard is executive vice president of Stream Property Management Inc., a private company that manages the Stream family estate in southwestern Louisiana, as well as 175,000 acres of corporate land in southern Louisiana. He also manages Stream Wetland Services, a consulting company specializing in wetlands restoration. Prior to his current position, he spent 16 years as a wildlife biologist with the Louisiana Department of Wildlife and Fisheries.

Q Why is the private sector motivated to address the problems of coastal wetlands loss?

A In the case of the Stream family, it's their awareness that long-term benefits come from being a good steward of the land. They know the advantages of maintaining and, whenever possible, enhancing wetlands. For some corporations, however, the motivation is also regulatory requirements. The policy initiated by the Bush administration requiring "no net loss" of wetlands meant mitigation efforts had to be put in place — if you destroyed an acre, you had to replace an acre.

Q Have privately owned wetlands suffered the same kinds of losses as public wetlands?

A Privately owned lands, which make up 85 percent of Louisiana's coastal wetlands, have been abused just like public lands. Large public projects have destroyed private wetlands and public wetlands alike. For example, the shipping channels that cut across the natural hydrologic barriers have allowed salt water to intrude into privately owned marshes, and the impact has been huge. Upland drainage projects have altered the natural supply of fresh water downstream and have caused flooding during wet periods and deprivation of fresh water during dry periods.

In the broadest sense, industrialization is really the culprit. But I don't think

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