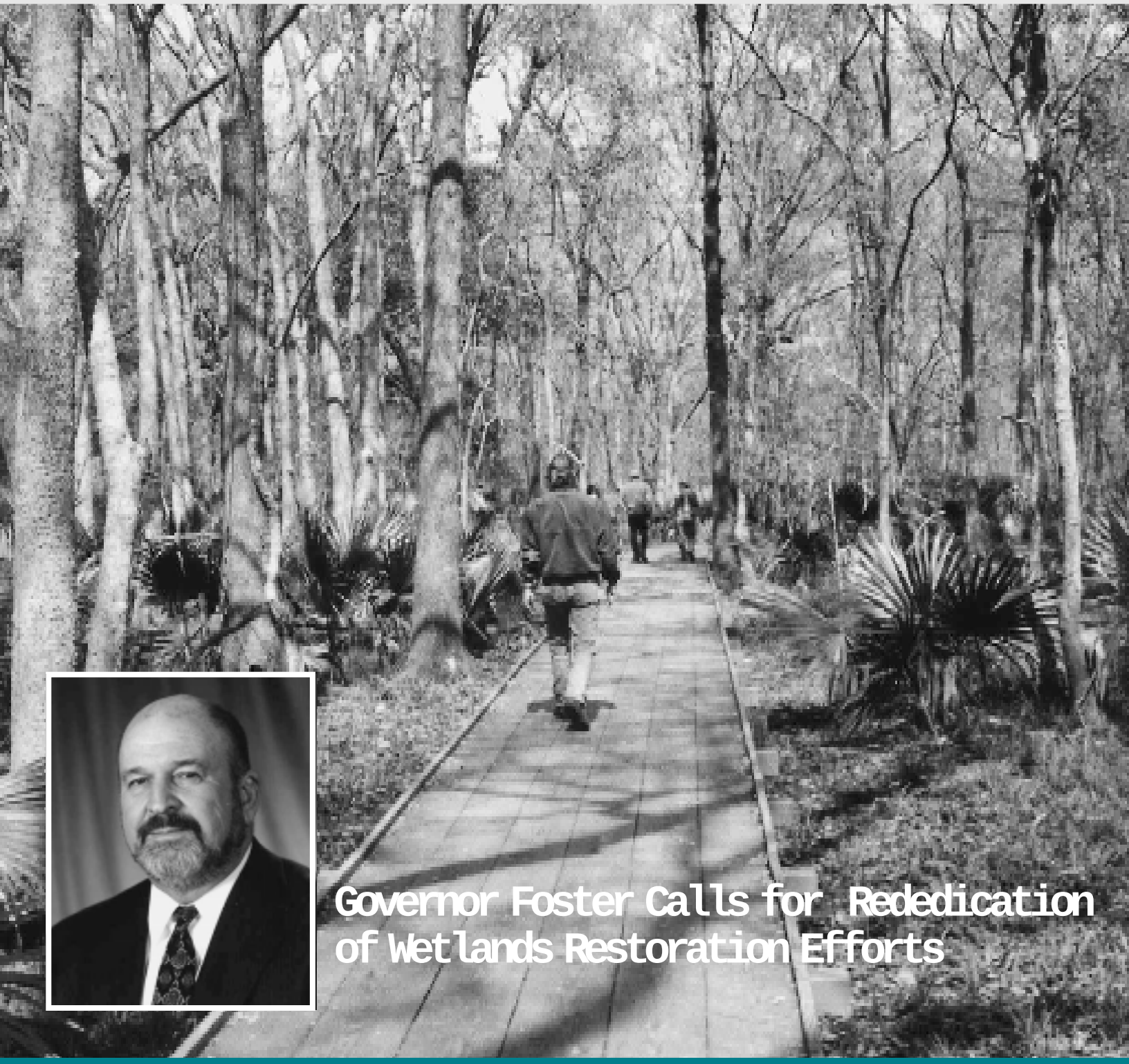
Louisiana Coastal Wetlands Planning, Protection and Restoration News

Water Marks

Summer 1997



Governor Foster Calls for Rededication of Wetlands Restoration Efforts

Inside This Issue: Mississippi River Diversion / Page 4 • Educator Inspires Students / Page 6 • Water Marks Interview / Page 12

Governor Foster Urges Rededication of Restoration Efforts

Making wetlands protection and restoration a top priority was the word from Governor Mike Foster at a National Wetlands Month kickoff press conference on May 1 in Baton Rouge. The governor stated that Louisiana needs to "spend whatever time necessary" to protect the state's precious wetland resources. An avid outdoorsman, Foster related his own sense of loss at the alarming disappearance of coastal wetlands and urged rededicated efforts from all those involved in solving Louisiana's coastal problem.

"It's an important moment," says Scott Clark, senior project manager for Breaux Act projects for the U.S. Army Corps of Engineers in New Orleans. "Finding solutions has never been and could never be a project for just one action group or government agency — the task is simply enormous." According to Clark, finding solutions requires continued cooperation among agencies.

Cooperation at Cameron-Creole

One good example of agency cooperation is the Cameron-Creole Watershed Project in Cameron Parish. Designed to benefit more than 600 acres of wetlands east of Calcasieu Lake, the project will re-establish historic

Governor Foster meets with high school students from the Marsh Maneuvers program at his May 1 National Wetlands Month press conference. Marsh Maneuvers is a program offered by the Cooperative Extension Service of Louisiana State University. It is available to senior 4-H students from around the state who want to learn more about Louisiana's coastal wetlands.

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.

water conditions and eliminate excessive saltwater ponding in the watershed's southern end.

The project, which was completed early this spring, was a joint effort of the state of Louisiana and the U.S. Fish and Wildlife Service (USFWS). Before construction was even begun, the state and USFWS first reached a cost-sharing agreement to split the project's $776,000 construction cost. As construction neared completion, the state, in conjunction with USFWS, developed a monitoring plan to assess the project's performance. When construction was completed and the plan approved, the state began a 20-year monitoring schedule. Should the project not perform as expected, the state and USFWS will meet to devise a solution.

Cooperation, however, isn't limited simply to Cameron-Creole. "All projects slated for construction have a cost agreement in place before the first dirt is turned and a monitoring plan ready before the contractor heads home," says Clark. To date, more than 50 cost-sharing agreements have been signed between the state and sponsoring federal agencies, and the state is monitoring all of the projects completed so far. m

About the Cover . . .
The boardwalk at Bayou Sauvage National Wildlife Refuge allows New Orleanians to enjoy the natural beauty of the wetlands.

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

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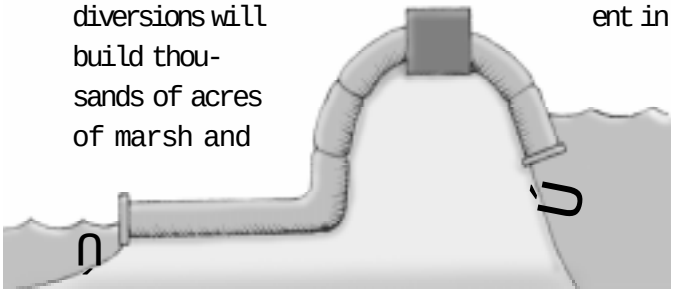
Diverting the Mighty Mississippi — One Answer to a Mighty Big Problem

With billions of dollars in goods, services and infrastructure at stake, engineers are finalizing their proposals to divert the Mississippi River into Louisiana's coastal wetlands.

The proposed diversions, one of which could draw off 70 percent of the river's flow, are the focus of a major effort to put a brake on coastal wetlands loss. "The idea is to put the Mississippi back in the business of sustaining and creating new wetlands," says Tim Axtman, diversions study manager.

If successful, the diversions will build thousands of acres of marsh and play a determining role in neutralizing the loss of wetlands in Louisiana. The diversions would replicate the action of the river prior to the existence of the levee system. By siphoning, pumping or cutting through the levee, diversion projects can move millions of gallons of water from the Mississippi into targeted wetlands. The infusion of fresh water and sediment will offset the sinking of the marsh floor, bring essential nutrients, reduce salinity levels in the wetlands, and allow the return of freshwater vegetation.



A siphon draws water out of one area and sends it into another.

While there are other methods that will accomplish these goals, none of them compare with the dramatic results inherent in diverting the Mississippi. "The power of the river is as close as we get to a 'magic bullet' in the field of coastal wetlands restoration," says Axtman. "It's the antithesis of the band-aid approach."

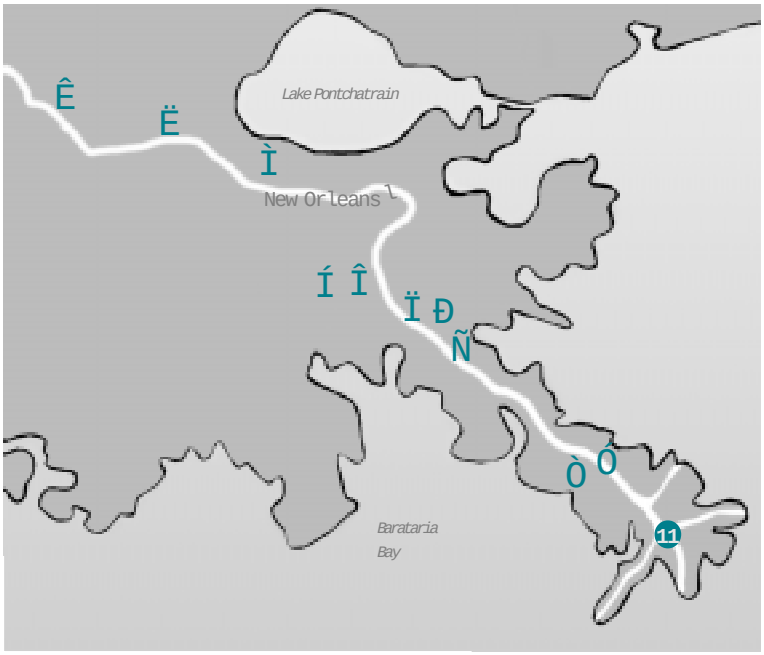
As with any potent medicine, however, there are questions about possible side effects of large scale diversions. For example: Taking large quantities of water from the main channel could adversely affect the shipping industry and jeopardize ports at New Orleans and Baton Rouge. Diversions could cut into the availability of water downstream for drinking and home use.

A cut in the levee allows fresh water and sediment to flow through and create new marshes.

Diversions could reduce flows downstream, leaving areas like the birdfoot delta at the Mississippi's mouth short on sediment and, as a result, susceptible to land loss. Rebuilding wetlands could raise major questions about who owns the new land and, more importantly, who owns the mineral rights.

Diversions could expose recovering wetlands to all the hazards associated with oil spills from shipping accidents, emissions from the scores of upstream chemical and petrochemical plants, and large-scale fertilizer runoffs from as far away as the upper Midwest. Diversions could cause a disruption of fisheries, affecting recreational and commercial fishing.

On the other hand, the risks of no action, or action that Governor Foster describes as "too little too late," are even greater. According to Axtman, "We've all come to accept the fact that we have a mighty big problem. The next step is to accept that we need an equally big solution." m



Proposed Diversion Sites

Project	Type	Method	Cost	Effect
1 Mini-siphon	Freshwater	Siphon	Low	Improve water circulation; relieve stagnant conditions
2 Reserve Relief Canal	Freshwater	Siphon	High	Improve circulation and supply of nutrients
3 La Branche Sediment Pumping	Sediment	Dredge and place	Mod.	Direct wetlands creation
4 Myrtle Grove Sediment Diversion	Sediment	Controlled structure	High	Hydrologic land building
5 Myrtle Grove Freshwater Diversion	Freshwater		High	Salinity modification; improvement of nutrient and fine sediment supply
6 W. Pt. ala Hache	Sediment		Low/ Mod.	Sediment Enrichment
7 W. Pt. ala Hache Siphon Enlargement	Freshwater	Enlargement of siphon	Low/ Mod.	Increased nutrient and fine sediment supply
8 Bohemia Sediment Diversion	Sediment	Uncontrolled spillway	High	Hydrologic land building
9 Fort Jackson Sediment Diversion	Sediment	Uncontrolled channel	Mod.	Hydrologic land building
10. New Navigation Channel	N/A	Channel construction	High	Separation of navigation from sediment delivery
11. Programmatic Sediment Mining	Sediment	Dredge and place	Mod.	Direct wetlands creation

Educator Inspires Student Commitment to Wetlands

Sue Ellen Lyons

"A friend and I who work together say that we don't teach science as much as we teach passion." So says Sue Ellen Lyons, a high school teacher from Holy Cross School in New Orleans. Her passion for wetlands conservation and her inspiring teaching methods earned her the 1996 National Wetlands Educator of the Year Award, given by the Environmental Law Institute and the Environmental Protection Agency.

Lyons is a Louisiana native who grew up, as she says, "on and in Lake Pontchartrain." She has a master's degree in science education and has been teaching for 31 years, the last 19 at Holy Cross, an all-boys Catholic school on the banks of the Mississippi River. Lyons has always incorporated the issue of wetlands conservation into her classes, but in 1988 she began offering Environmental Science as an upper-level elective. The class, split into two sections of 65 students, is often standing room only and usually one of the first elective classes to fill up.

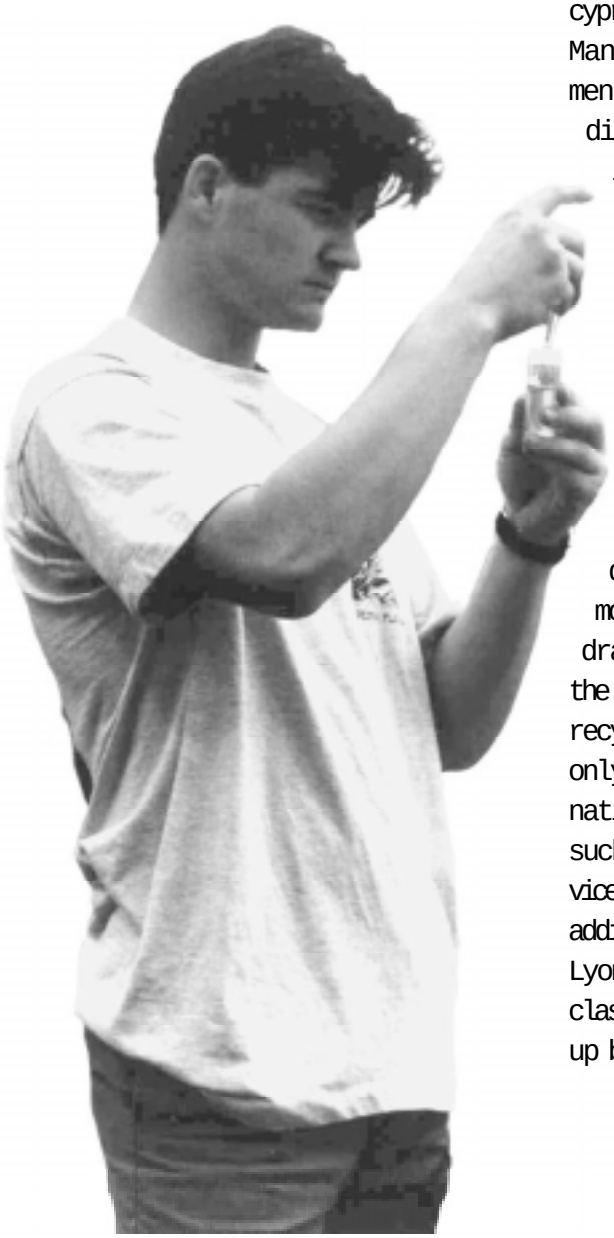
In her class, Lyons makes her students aware that the quality of life they wish to enjoy depends on their ability to solve the problems faced by the wetlands today. She shows them how every aspect of their lives is affected by these issues, and leads them into active stewardship roles. As a result, many of her former students have gone on into environmental or science-related careers.

Peer teachers help other students dip-net for aquatic invertebrates and small fish at Turtle Cove Environmental Research Station at Pass Manchac.

"For most kids a class takes up a year of their lives. If they learn something and enjoy it, that's great," says Lyons. "But when they want to live it, to continue studying it for life, that's what's most gratifying for a teacher. Every opportunity I get, I try to empower them to believe one of them will make a difference or solve some of these problems. And I am convinced that one of them will."

The success of Lyon's classes may be due to many things: the fact that the environment is a hot topic in Louisiana, the hands-on characteristics of the class,

the students' personal involvement in the issue (many enjoy hunting, fishing, and camping in the area), and Lyons' teaching methods themselves. "She's really cool," says junior Barrett Johnson. "It's not like a regular class, but more like a project. We learn by accident while she talks to us."

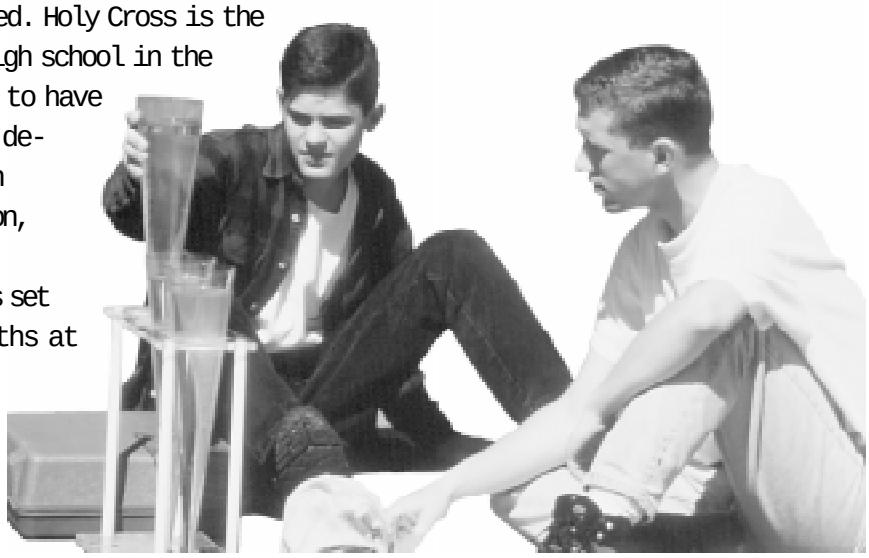


All of Lyons' classes take at least one weekend field trip to the wetlands, and involvement in at least two service activities is a requirement. Some of the activities include stenciling "No Dumping" signs on storm drains, planting aquatic grasses, participating in beach clean-ups and litter control, replanting cypress trees in the Manchac Wildlife Management area, and sinking discarded Christmas trees into the water to collect sediment. "When you invest yourself in something, then you care about it and you don't want anyone else ruining it," observes Lyons.

The students also operate Crusher I, a device that crushes used motor oil filters and drains them, allowing both the oil and the filter to be recycled. Holy Cross is the only high school in the nation to have such a device. In addition, Lyons' classes set up booths at environmental conventions and have put together a slide show set to music.

Lyons is especially proud of her upper level leadership class, known as FUR (Fighting Urban Runoff), whose members teach the other students on weekend field trips. Students in this group must have good communication and leadership skills, as they are responsible for writing grant proposals and speaking to the public, as well as peer teaching. The FUR students' projects take up hundreds of hours each year, and their efforts have garnered them 17 local, state and national awards. "They deserve it," says Lyons. "They work hard." m

At left, a student tests for water quality at Bayou Sauvage Urban National Wildlife Refuge. Below, members of Lyons' class use Imhoff cones to check sedimentation and turbidity at Turtle Cove.



CWPPRA *Quick News*

New Brochure and Slide Presentation Now Available

Featuring a cover photo of Louisiana 4-H youth planting marsh grass along an eroded shoreline in Vermilion Parish, a new publication titled "Coastal Wetlands Planning, Protection and Restoration Act (CWWPRA): A Commitment to Louisiana's Coastal Wetlands" is now available.

The brochure was funded by the Breaux Act Task Force and developed by the LSU Agricultural Center's Louisiana Cooperative Extension Service (LCES) and the LSU Sea Grant College Program.

The brochure introduces citizens to the justification for coastal restoration, the future with and without action, recommended restoration actions, and ways for interested citizens to become involved.

Front cover of the new CWPPRA brochure

Additionally, an associated slide presentation that closely follows the educational outline of the brochure has been developed by the LSU Agricultural Center/Sea Grant. Copies of the presentation will soon be available to all interested state and federal agencies.

To obtain copies of the brochure or invite a speaker to present the slide presentation, contact Jay Gamble at the U.S. Army Corps of Engineers Public Affairs Office in New Orleans at (504)862-2786. m

State Submits Coastal Wetlands Conservation Plan

Louisiana's Coastal Wetlands Conservation Plan has been submitted to federal agencies for approval, following its adoption at an April 30 meeting to which the nine members of the state's Congressional delegation, all 140 state legislators, and 390 interested Louisiana citizens were invited.

The plan, developed by the Louisiana Department of Natural Resources, represents a major cost savings to the state if it is approved. The state's share of financing for Breaux Act projects will be reduced from 25 percent to 10 percent for priority projects from lists 5 and 6, and to15 percent for all other future CWPPRA projects. m

Construction Completed on Falgout Canal Demonstration Project

Non-conventional wave-damping devices have been installed along 1,500 feet of the levee on the north bank of the Falgout Canal as part of a demonstration project located approximately 15 miles south of Houma. The devices are designed to dampen wave energy generated by frequent, large-vessel traffic through the canal. The levee, which is experiencing increasing rates of erosion, protects a large area of fragile marsh. Prior to the levee's construction the marsh was severely impacted by exposure to fluctuating water levels and salinity.

The experimental wave-damping devices, using various designs, orientations and construction materials, will also protect and aid in the establishment of smooth cordgrass (*Spartina alterniflora*) plantings behind the devices. The smooth cordgrass will function as an additional wave buffer and provide stabilization protection for the levee.

The project is sponsored by the U.S. Natural Resources Conservation Service. m

The impressive effect of wave-damping devices is best shown in this photo. While water to the left of the fence is fairly turbulent, water on the right is calm, thereby minimizing erosion.

NMFS Construction Efforts on Deck

The National Marine Fisheries Service (NMFS) will begin construction on two priority projects in 1997.

Point Au Fer Hydrologic Restoration — Area 2

Situated on Point Au Fer Island in western Terrebonne Parish, this project is divided into two areas. Construction efforts in Area 1 were completed in late 1996 and are designed to prevent shoreline breaching and restore natural hydrologic patterns in the saline and brackish marshes situated on the island.

Area 2, which is currently under construction, will prevent the breaching of the island's Gulf of Mexico shoreline into both a bayou and an adjacent petroleum access canal. The shoreline will be armored by placing limestone rock along a 3,000-foot stretch of shoreline. This

continued on page 10

A barge-mounted drag line crane transports limestone rock from the loading barge to an articulated dump truck on shore. More than 13,000 tons of rock are being used at Point Au Fer.

armoring should slow shoreline erosion enough to prevent the bayou from connecting to the Gulf for at least 20 years.

Big Island Mining

NMFS's Big Island Mining project will restore freshwater and sediment delivery processes to the northwestern portion of the Atchafalaya River delta. Natural westward expansion of the delta was hampered by repeated deposits of material dredged from the federal navigation channel in 1973.

The project area, which is situated about 18 miles southwest of Morgan City in St. Mary Parish, will see the construction of distributary channels extending from the Atchafalaya River into the shallow waters west of Big Island. Dredged materials will be placed in a pattern that mimics natural delta lobes and creates conditions conducive to trapping of sediment.

When completed, the project will create nearly 500 acres of deltaic wetlands and provide a basis for continued natural delta growth. Within 20 years, the project's initial efforts should have created over 1,300 acres of wetlands habitat. m

Task Force Approves Sixth Priority Project List

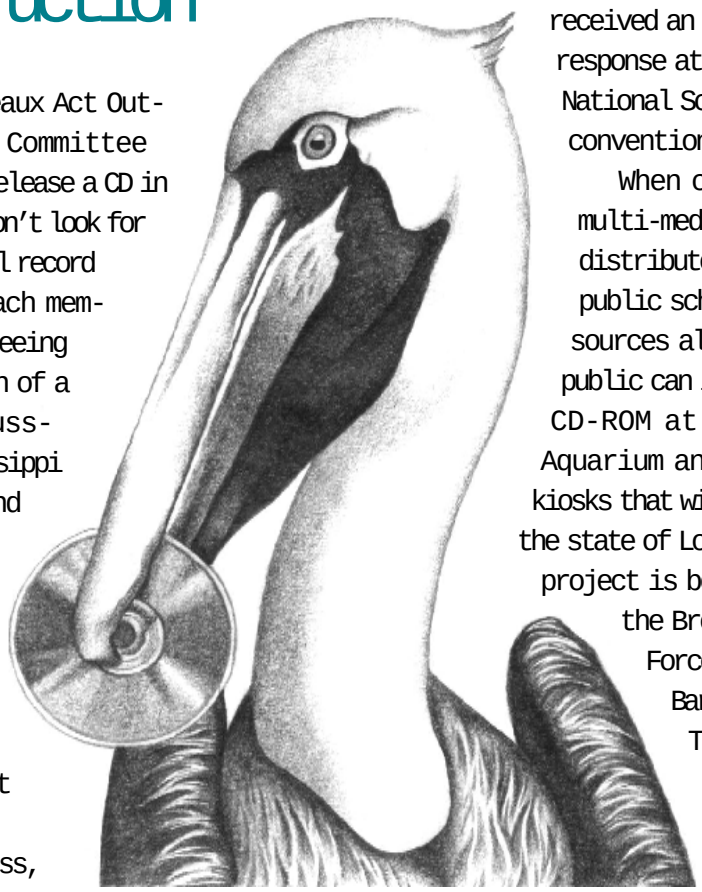
The Breaux Act Task Force unveiled the sixth priority project candidate list earlier this year and selected the final list in late April. The candidate list included 27 proposed projects with an aggregate construction cost of more than $330 million. The final list of selected projects is presented in the chart below. The task force approved 12 projects for a total cost of nearly $45 million. To date, the Task Force has approved six priority project lists, including nearly 70 projects with an estimated construction cost totaling $180 million. m

Project Name	Cost	Agency	Acres
Black Bayou Hydrologic Restoration	$ 6,316,800	NMFS	3,594
Bayou Boeuf Pump Station (Increment 1)	150,000	EPA	N/A
Delta-Wide Crevasses	2,736,950	NMFS	2,386
Marsh Island Hydrologic Restoration	4,094,900	USACE	408
Penchant Basin Plan without Shoreline Stabilization	7,051,550	NRCS	1,155
Sediment Trapping at the Jaws	3,167,400	NMFS	1,999
Oaks/Avery Canals Hydrologic Restoration (Increment 1) (Bank Stabilization Only)	2,367,700	NRCS	160
Lake Boudreaux Basin Freshwater Introduction and Hydrologic Management - Alternative B	4,915,650	USFWS	619
Barataria Bay Waterway Bank Protection East	5,019,900	NRCS	217
Marsh Creation East of the Atchafalaya River - Avoca Island (Increment 1)	6,438,400	USACE	434
Dustpan/Cutterhead Dredging for Marsh Creation in the Mississippi River Delta Region	1,600,000	USACE	
Nutria Harvest for Wetland Restoration	400,000	NMFS	
Cheniere au Tigre Sediment Trapping Device	500,000	NRCS	
Total Cost	**$ 44,759,250**		

CD-ROM Under Construction

The Breaux Act Outreach Committee will release a CD in the fall, but don't look for it at your local record store. Outreach members are overseeing the production of a CD-ROM discussing the Mississippi River Basin and examining the issue of coastal wetlands loss.

The CD-ROM, which at this point is a work in progress, seeks to be entertaining as well as educational. Features include touch-screen technology and computer animation, with much of the material to be written by teachers joining the project this summer. A preview of the CD-ROM received an enthusiastic response at the recent National Science Teacher's convention.



When completed, the multi-media project will be distributed to private and public schools as resources allow. The general public can interact with the CD-ROM at the Audubon Aquarium and at mobile kiosks that will travel around the state of Louisiana. The project is being produced by the Breaux Act Task Force agencies, the Barataria-Terrebonne National Estuary Program and the Audubon Aquarium. m

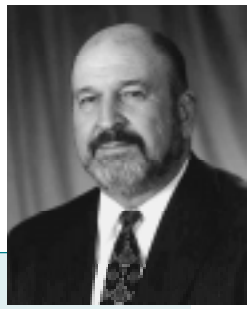
The Water Marks Interview... *continued from page 12*

Environmental Protection Agency, decreasing Louisiana's match for future projects from 25 percent to 15 percent. That's a significant reduction and is an important part of our long-term funding strategy.

At the same time, it certainly doesn't free us from future funding challenges. I'm fully committed to following through on the plans and projects that have been developed, and that's going to take money. But with our future at stake, what we can least afford is to do too little too late. m

"We're in a struggle to save a resource of national importance, and it's a battle Louisiana can't win alone."

Governor Mike Foster



The *Water Marks* Interview: *Governor Mike Foster*

Q Governor, you've called for an expansion of efforts to save Louisiana's coastal wetlands and barrier islands. How does Senator Breaux's CWPPRA legislation fit into your initiatives?

A The Breaux Bill is a critical part of the effort. We're in a struggle to save a resource of national importance, and it's a battle Louisiana can't win alone. The program is scheduled for reauthorization this year, and we intend to show Congress that Louisiana fully supports the legislation.

Q Even though there have been differences of opinion about some of the CWPPRA projects?

A Thoughtful, dedicated people are always going to arrive at different methods of solving a problem. That's a positive. If the solutions were simple, they'd have been put in place long ago. The fact is that the Breaux Bill is doing exactly what was intended — it's forced serious and complex debate about a serious and complex problem.

Q How much success has there been in getting projects constructed?

A The Breaux Bill has three projects under construction and another 14 scheduled to go in the ground by the end of 1997. A new list of priority project candidates was submitted in April. We've made real strides in moving projects out of the planning and engineering phase and into actual construction.

Q The Breaux Bill requires Louisiana to match a portion of the federal dollars. In the past the state has had trouble coming up with its share, which meant a reduction of federal funding. Will this continue to be a problem?

A Devoting state dollars to the coastal restoration and protection program is a priority. However, we look to reducing our federal match now that the completed Coastal Wetlands Conservation Plan is headed for approval by the

continued on page 11

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