



FALL
1996

WATER MARKS

Louisiana Coastal Wetlands Planning, Protection and Restoration News

Home Is Where the Marsh Is

They're rich, they're diverse, and they nurture an astonishing variety of plant and animal species that call them home. Louisiana's coastal wetlands loom large on the habitat landscape, and their loss should be cause for deep concern for all Americans.

- For the commercial fisherman on the Gulf of Mexico, Louisiana's wetland losses mean

the potential destruction of nursery habitat for shrimp and numerous species of finfish.

- For a family in Denver, the loss of a primary source of seafood means scarcity and higher prices.
- For the duckhunter in Indiana, wetland losses threaten the wintering grounds for millions of waterfowl.

- For the Californian vacationing in Louisiana, the losses mean less chance of seeing an otter, an alligator, or a roseate spoonbill.

Federal and state efforts to reverse the loss of wetlands are the best hope for the birds, animals and fish that live in the marshes and estuaries. From a strictly economic point of view, the fisheries and wildlife habitat of the coastal wetlands contributes enormously to the well-being of Americans in general. Louisiana's commercial fishing industry alone produces over a billion pounds in annual landings. The state leads the nation in the harvests of shrimp, menhaden, crabs and oysters.

Otter, mink, raccoon, muskrat and nutria make Louisiana number one among all the states in the production of wild fur pelts. As much as 40 percent of



One of the more common wildlife species to inhabit coastal Louisiana — brown pelicans — nest on Queen Bess island in Jefferson Parish. (ACOE photo)

continued on page 2

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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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Home Is Where The Marsh Is *continued from page 1*



Gulls — another frequent flier in the coastal zone — rise to chase a shrimper off Rurheford Beach. (ACOE photo)

the nation's wild fur harvest comes from Louisiana wetlands in any given year.

That quintessential creature of the swamp, the alligator, makes a significant economic contribution as well. Once listed as endangered in Louisiana, alligators now number in the hundreds of thousands, thanks to extensive management by the Louisiana Department of Wildlife and Fisheries. More than 25,000 wild alligators are harvested each year, while nearly 100 commercial alligator farms in south Louisiana raise alligators from eggs taken from the wild.

Some of the most important benefits of the wetlands, however, can't be translated into dollars and cents. Sport

fishing, hunting and ecotourist activities like boating, skiing, swimming, hiking, bird watching, photography and painting are an important part of the good life to Americans who visit the coastal wetlands. In addition, the state's wetlands provide important habitat for 15 million waterbirds each year, including 20 percent of the North American population of dabbling ducks and over 400,000 geese. The area is equally popular with neotropical migratory songbirds that winter in Central and South America and stop here on their spring migrations northward, adding an international dimension to what is already an area of distinct national importance. ○

Dedications Mark Two Completed Projects

Recent dedication ceremonies celebrated the completion of two major hydrologic restoration projects — Bayou Sauvage Wetland Restoration Project, Phase One, and the Mud Lake

Bayou Sauvage Wetland Restoration Project



U.S. Senator John Breaux (D-LA), primary author of CWPPRA, served as master



Senator John Breaux addresses attendees at the Bayou Sauvage project dedication held on August 12. (USFWS photo)

by Noreen Clough, U.S. Fish and Wildlife Regional Director; Jack Caldwell, Secretary of the Louisiana Department of Natural Resources; and CWPPRA Task

Force members.

Phase One of the project, completed in May, will restore approximately 1,050 acres of valuable marsh habitat in the nation's largest urban refuge,

[continued on page 4](#)







A deck's-eye view into the Bayou Sauvage National Wildlife Refuge. More than 1,000 acres of wetlands will be restored by Phase One of the project. (USFWS photo)

Hydrologic Restoration Project. Combined, these projects have restored and enhanced approximately 4,250 acres of emergent wetlands.

of ceremonies at the Bayou Sauvage project dedication, held August 12 at Ridge Trail in the Bayou Sauvage National Wildlife Refuge. Senator Breaux was joined

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.

 <p>Vegetative Vegetative techniques replace plant life lost through waterponding, erosion and saltwater intrusion.</p>	 <p>Sedimentary Sedimentary techniques mimic the natural process of accretion (wetland building) by using diverted or dredged sediments.</p>
 <p>Structural Structural techniques use natural and man-made materials to protect existing wetlands subject to erosion or subsidence.</p>	 <p>Hydrologic Hydrologic techniques increase or decrease the amount of water flowing into or out of wetlands, returning water flows to more natural patterns.</p>

Dedications Mark Two Completed Projects

continued from page 3

located in New Orleans East. The refuge provides wintering and nesting habitat for



Project dedication celebration — CWPPRA style! A hearty barbecue of coastal favorites round out the day's events at the Mud Lake project dedication. (NRCS photo)

migratory and resident waterfowl, wading birds, shorebirds and the occasional bald eagle, as well as a number of non-migratory resident wildlife species.

The project uses two 48-inch pumps along the east levee to lower excessive water levels in a freshwater impoundment created by the construction of the Lake Pontchartrain Hurricane Protection Levee, which isolated portions of the refuge from the surrounding marsh. Reduced flooding will encourage the growth of emergent vegetation, reversing the deterioration of the impounded marsh.

During 1990, approximately 52,000 ducks were observed on the refuge. With improved water management, those numbers should increase to 80,000 - 90,000. Shorebirds, small mammals, resident freshwater fish and other wildlife will also benefit from the improved habitat in the

restored wetlands.

Phase Two of the project is now under construction and expected to be completed in December of this year. Project sponsors are the U.S. Fish and Wildlife Service and the Louisiana Department of Natural Resources.

East Mud Lake



A dedication ceremony for the Mud Lake Project was held August 6 in Cameron Parish along the shoreline of the Gulf of Mexico. Speaking at the ceremony were U.S. Representative Jimmy Hayes

(R-LA), Terry Ryder (deputy chief of staff to the governor), and several representatives of the CWPPRA partners.

The Mud Lake Restoration Project is designed to man-



Dedication ceremony guests examine one of the double flap gates installed at the Mud Lake Project. (NRCS photo)

age the area as brackish marsh, an environment important for nursery-dependent organisms, migratory waterfowl, alligators and furbearers. The project includes maintaining hydraulic barriers, installing water control and wave-stilling devices, planting vegetation and introducing fresh water. ○

CWPPRA the Answer to Saving Wetlands, Says Environmentalist

When environmentalist Milton Cambre first walked the shores of Lake Pontchartrain 40 years ago, the roseau cane was so thick that he had to slice through it with a machete.

During the four decades that have passed since those early walks, however, Cambre has seen some disturbing changes take place in the environment surrounding the lake. He has watched commercial land

development and massive efforts to control the wild waters of the nearby Mississippi River take their toll on Pontchartrain and its neighboring wetlands. The once-fresh water of the wetlands has turned brackish and the land has subsided. Plant life that provided cover for the waterfowl he loved has withered and died. And the once abundant wildlife and freshwater fish are gone.

“Vegetation along the shoreline of Lake Pontchar-

train has been dying off for over 30 years because of the intrusion of salt water from the Gulf,” Cambre said.

“Without the extensive root systems of plants like roseau cane to hold the soil in place, the tides carry significant portions of the shore out into the Gulf each day.”

The loss of vegetation needed for nesting and spawning grounds has been devastating to wildlife, Cambre said. “Waterfowl

[continued on page 10](#)



Like something out of a dream, cypress-draped bayous such as this one in Jean Lafitte National Park could be lost forever without continued restoration and protection efforts. (ACOE photo)

Project Monitoring: Keeping An Eye on the Coast

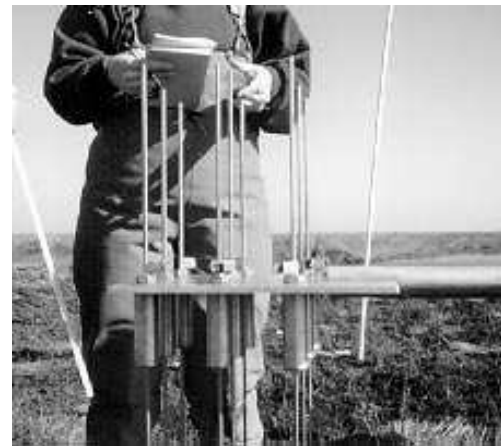
Completing a CWPPRA project is always cause for celebration, but after the dedication is over, there's still plenty of work to be done — specifically, making sure that a project lives up to its planned potential. It's this exacting work of project monitoring that continues long after the ribbons are cut and the officials head home.

The Process

The Louisiana Department of Natural Resources (DNR) and the National Wetlands Research Center (NWRC) are



A project monitor tosses a throw trap into a project area. Throw traps are used to capture fishery species in a project area so that their density, size and biomass can be measured. (DNR photo)



Project monitors shown here use the sediment erosion table technique to measure the accretion (build-up) of sediment in a project area. A flat table is suspended above the marsh surface and nine aluminum rods are inserted through it. Monitors measure the rate of sediment accretion as the distance between the table and the marsh surface decreases. (DNR photos)



responsible for monitoring all CWPPRA projects. These agencies, along with federal representatives and ecological and statistical consultants,

comprise a highly-trained technical advisory group. This group has the task of developing a monitoring plan for each project based on a standardized set of guidelines called protocols. These protocols, which are established for water quality, soils, hydrology, vegetation, wildlife, fisheries and habitat mapping, "...lay out

specific tests and procedures for assessing particular aspects of a project's performance," says Greg Steyer of DNR.

Once the monitoring plan is approved — usually before construction begins — DNR initiates baseline monitoring. DNR establishes "on-the-ground monitoring stations," and NWRC obtains high-resolution, color-infrared aerial photographs of the project. "Aerial photography literally gives us a clear picture of where we started, where we're at, and eventually where we've gone," says Steyer.

While these images provide monitors with a visual representation of wetlands growth and development, less apparent factors, such as water quality or vegetation health, require

constant testing throughout each project's 20-year monitoring schedule. Steyer explains,

"Ecological changes in the wetlands don't happen overnight. In most cases, it takes years of data to ascertain changes in a project area."

The Long Run

Although data collection on CWPPRA projects didn't begin until 1994, today monitoring is taking place on 23



Measuring wildlife and fisheries species in any project area is one of the most important elements of project monitoring. When sampling for fisheries, monitors will frequently use seines such as this to obtain species for measurement. (DNR photo)

established a quality management program to ensure that monitoring is consistent throughout coastal Louisiana and meets minimum quality standards," explains Steyer. This program ensures the continued production of biannual progress reports comparing results to project goals as well as to the results achieved in similar projects located in different ecological settings. As Steyer clearly points out, "Our success in planning for tomorrow depends on the quality of the data we gather from project monitoring today." ○



In addition to high-altitude aerial photography, DNR also obtains low-altitude images. This shot shows the Boston Canal-Vermilion Bay Shoreline Stabilization Project after the installation of rock breakwaters along Boston Canal. (DNR photo)

Louisiana projects, and the process is always being improved. "In late 1995, DNR

CWPPRA Quick News



CWPPRA Home Page Now On-Line

The CWPPRA home page is now on-line on the World Wide Web. Web-surfers who visit the site can find a wide variety of information about the history of CWPPRA, the status of projects, facts and figures about coastal Louisiana, and several links to related information and wetlands websites throughout the United States. ○



The address is: <http://www.nwrc.gov/cwppra.html>

Col. Conner Heads Up Task Force

Col. Bill Conner is the new CWPPRA Task Force chairman. That role is one of the duties he assumed on July 12 when he took command of the U.S. Army Corps of Engineers' New Orleans District.

Conner is impressed with the hard work and involvement of the CWPPRA Task Force to date. "I intend to build upon the past accomplishments of the federal and state agencies that have made the Breaux-Johnston Act a success," he said. "And I'm anxious to take the next step forward, which is to bring national attention to the national problem of deteriorating coastal wetlands."

Conner formerly served on the Army staff at the Pentagon in Operations and Plans.



Col. Bill Conner (ACOE photo)

New Alliance for Estuaries Formed

A Louisiana environmental group, the Coalition to Restore Coastal Louisiana, has joined with seven other similar organizations from around the nation to solicit more publicity and more government financing for estuaries. (An estuary is any area where fresh water from rivers meets salt water from the ocean.)

The alliance, Restore America's Estuaries, will propose federal legislation to restore a million acres of estuary habitats, including marshes, wetlands, beaches and kelp beds, by 2010.

Alliance strategists believe the group's combined clout can accomplish more than regional groups can individually. ○

During his career, the new district engineer has served in a variety of assignments, including two tours of duty in Germany and one in Korea. He is a 1974 graduate of West Point and holds master's degrees in structural engineering and construction management from the Massachusetts Institute of Technology. ○

Names to Note

Steve Mathies, formerly of the Army Corps of Engineers, as well as former director of the Barataria-Terrebonne



National Estuary Program, was recently named deputy secretary of the Louisiana Department of Natural Resources (DNR). ○

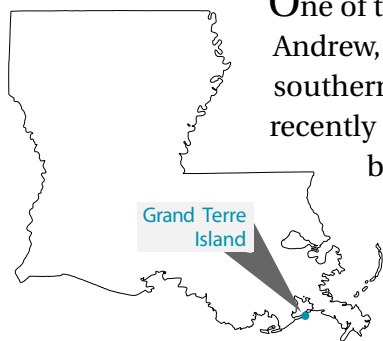
Steve Mathies
(DNR photo)

Katherine G. Vaughan is now serving as assistant secretary of DNR's Office of Coastal Restoration and Management, the office responsible for Louisiana's wetlands resources and implementation of CWPPRA. Vaughan, an attorney, has worked throughout her career in the natural resources field. ○



Katherine G. Vaughan
(DNR photo)

Repairs Under Way on Grand Terre Island



One of the victims of Hurricane Andrew, Grand Terre Island in southern Jefferson Parish, was recently repaired through a barrier island nourishment and wetland creation project implemented by the Louisiana Department of Natural

Resources and the Army Corps of Engineers.

Approximately one-half million cubic yards of material dredged from Barataria Waterway was used to build up an overwash area created by the hurricane. The overwash area threatened to breach Grand Terre Island, leaving inland areas vulnerable to hurricanes and other storms. The dredged materials will also promote development of vegetated wetlands along the northern edge of the island. The Army Corps of Engineers constructed the project at a cost of \$1,370,000. Federal funding through the Water Resources Development Act provided 75 percent of the cost. ○

Congress Funds Oyster Program

A \$7.5 million appropriation to help relocate oyster leases associated with the Davis Pond Freshwater Diversion project was recently approved by the U.S. Congress.

Some 8,000 acres of oyster leases are located in the project area in St. Charles Parish. The federal assistance means that the adverse effects of the project's freshwater diversion on active and productive oyster beds can be offset by moving the beds away from the fresh water. ○

CWPPRA the Answer to Saving Wetlands...

continued from page 5

that used to nest in the marshes around Pontchartrain only use it as a stopping place on their way to other nesting areas. At the same time, the freshwater bass, crappie and perch have been forced further inland.”

Cambre said that he has been watching the deterioration of Louisiana’s coastal wetlands for years, but when he learned of a proposal to extend a hurricane protection levee and drain a large region of the

LaBranche Wetlands around Lake Pontchartrain, he decided enough was enough.

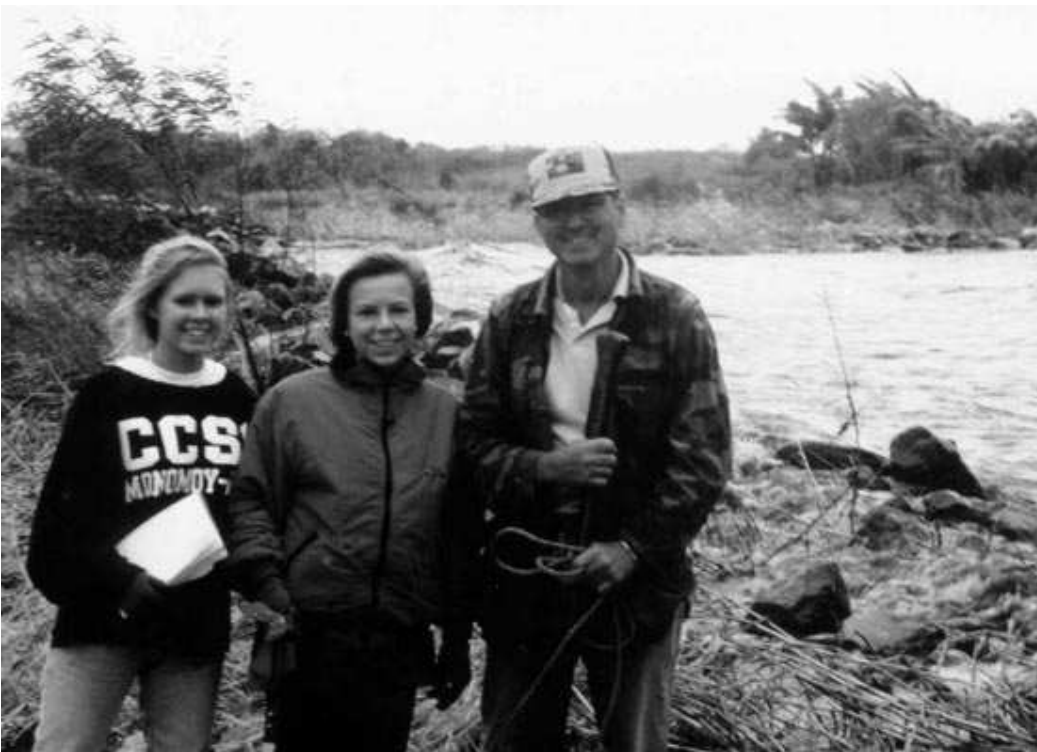
“That project was nothing more than a housing development being financed with public funds, under the guise of flood protection, and it was going to do a lot of damage,” Cambre said. Cambre and his neighbors organized the St. Charles Parish Environmental Council to fight the project, and after six years of writing letters, drumming up sup-

port and legal wrangling, they forced the development’s cancellation.

That was 1968, and Cambre has been one of the nation’s leading environmentalists ever since. He’s played a role in projects throughout coastal Louisiana, including CWPPRA’s Bayou LaBranche Marsh Creation Project. He has, in fact, become so successful in his efforts to protect Louisiana’s wetlands that he was honored by former President George Bush as one of the famous

“thousand points of light.” He has also appeared in several television specials on the environment.

According to Cambre, CWPPRA is the right answer to the question of saving Louisiana’s ailing wetlands. “At long last we’re taking a planned approach to wetlands preservation,” he said. “And with CWPPRA, we’ve finally got the resources necessary to get something meaningful done.” ○



Wendy Weatherel (left) and Cecile Hardy of Newman School pause for a photo during their tour of the LaBranche Wetlands with Milton Cambre (right). The rocks immediately behind make up a portion of the Lake Pontchartrain lakeshore stabilization project. (Photo courtesy of Milton Cambre)

CWPtionary

Saltwater Intrusion

Saltwater intrusion is the movement of salt water into a non-salt water environment, such as a freshwater marsh. This intrusion may occur as the result of a natural process like a storm surge from a hurricane. More often, however, saltwater intrusion results from human activities such as construction of navigation channels or oil field canals. These channels and canals provide conduits for salt water from the Gulf of Mexico to reach deep into interior marshes.



Navigation canals can allow salt water to reach freshwater marshes.

Saltwater intrusion can be detrimental to these marshes because water with high salt concentrations can adversely affect vegetation in the marsh. For instance, when highly saline water enters a low-saline or non-saline area, most or all of the native plant life will be destroyed. And because plant root systems are essential in holding the marsh soil together, loss of plant life eventually leads to rapid erosion. What was once a wetland soon becomes open water. ○

The Water Marks Interview...

continued from page 12

water temperature the right degree, they make their migration back to the Gulf.

Q You said the project involved draw-down. What do you mean by that?

A The purpose of the project was to lower the water table, draw the marsh down, to dry some of the smaller ponds, so they could get in there and get new grass seeded — to rejuvenate it. It worked beautifully; we had dry weather, actually a drought year, that helped things along. It's the best project I've seen.

Q Did you have any opportunity for input into planning the Mud Lake Project?

A Yes. They asked my advice. All my fishing is done behind the weirs — we're in a land-locked situation with 13 or 14 weirs. So I asked for larger box weirs so that I could get my boat in, and they agreed.

Q Now that the project is finished, what's your assessment of its results?

A Well, it's rebounded pretty good. They opened some weirs up on

July 18 and let some larvae in, so it'll be okay this year. We had two bad years on crabs, but it will pick up next year.

Q Now that you've seen your local project installed and working, are there any other coastal wetlands projects you'd like to see implemented?

A This project worked out well here with Fina because of the location. In other places, you'd have to survey it and see what might be possible. That's what we've got the biologists and big dogs for. But any improvement at all in the wetlands is worth doing, even though many of the fishermen don't think so. It's money well-spent in the long run.

Q What do you think the future of commercial fishing in Louisiana would be without CWPPRA?

A Without the estuaries, a place for fish and shellfish to grow and thrive, fishing would be cut short. I didn't go to college, I'm not a biologist, but I've seen what it takes in the long run. I can see the future — and it's do or die. ○

"I'm not a biologist, but I've seen what it takes in the long run. I can see the future — and it's do or die."

Carlton Delano of Holly Beach has been a commercial fisherman for 26 years. He and his wife also operate the Holly Beach Seafood Market. He is the former president of Fishermen for Fair Laws.



The *WaterMarks* Interview: *Carlton Delano*

Q Mr. Delano, can you tell us something about your fishing operation?

A I've been a fisherman for 26 years here at Holly Beach — we're right on the coast, about a baseball's throw from the Gulf of Mexico. For the last 10 years I've had the lease to fish on Fina Oil and Chemical property. We catch shrimp, blue point crabs and alligators in season. My wife works with me, and from time to time my son and son-in-law, as well. We sell 75 to 80 percent of our catch at our own seafood market — the rest we sell to wholesale buyers.

Q How has fishing in your area changed over the years?

A As laws have changed, quite a bit of our income has been depleted. More fish have been denied or limited for commercial fishing — redfish, speckled trout, drum, flounder...

Q That makes catching the species still available to you even more crucial. So what was your reaction when you first heard that a CWPPRA project, the Mud Lake Marsh Management project, was to be implemented in your fishing area?

A I knew Mud Lake was coming; it had been in the works for 10 years. I'd seen other projects come about. I knew the first couple of years would be draw-down years that would cut our income. It's hard to do

when you count on the money, but I knew we'd come out okay on the other end.

Q What convinced you that the project was worth doing?

A Well, I've been in this business a long time, and I know we've got to protect the estuaries. Some of the fish reproduce right here in the lake, but the crabs, the shrimp, the redfish, the speckled trout hatch out in the Gulf, and the larvae — the small, minute "ta-ti," the little bitty fellas — come in on the tide. The estuaries give them someplace to hide, to grow and thrive. That's why we need marsh management. Then, when the conditions are right, the

[continued on page 11](#)

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