Louisiana Coastal Wetlands Planning, Protection and Restoration News

WATER MARKS

Coast 2050

One Voice, One Mission

Spring 1999

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Louisiana Coastal Wetlands Planning, Protection and Restoration News

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 . . .

A high-resolution, satellite photograph of Louisiana. Photos like this play an important role in the monitoring of coastal wetlands. (NWRC Photo)

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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.

One Voice, One Mission:

Coastal Louisianans Support Coast 2050

When you ask most Americans to imagine the good life in the year 2050, their fantasies are likely to sound like the stuff of science fiction. But if you ask people in coastal Louisiana, the things they imagine are probably much more down to earth. They envision thriving wetlands, restored barrier islands and flourishing watersheds.

To support those visions of their future, Louisianans are speaking out with one voice and standing up as one unit. In December 1998, Coast 2050, a statewide landscape restoration strategy, was accepted by the Breaux Act Task Force and Louisiana's State Wetlands Authority. This acceptance was matched by the unanimous approval of all 20 coastal parishes, making Coast 2050 the first restoration plan in Louisiana to be supported by federal, state and local governments. As Bill Good, administrator of the Coastal Restoration Division of the Louisiana Department of Natural Resources, says, Louisiana's unity should help convince policy makers of the importance of coastal restoration.

Coast 2050's general acceptance throughout coastal Louisiana was possible because of the method in which the plan was approached. Regional Teams held a total of 65 meetings

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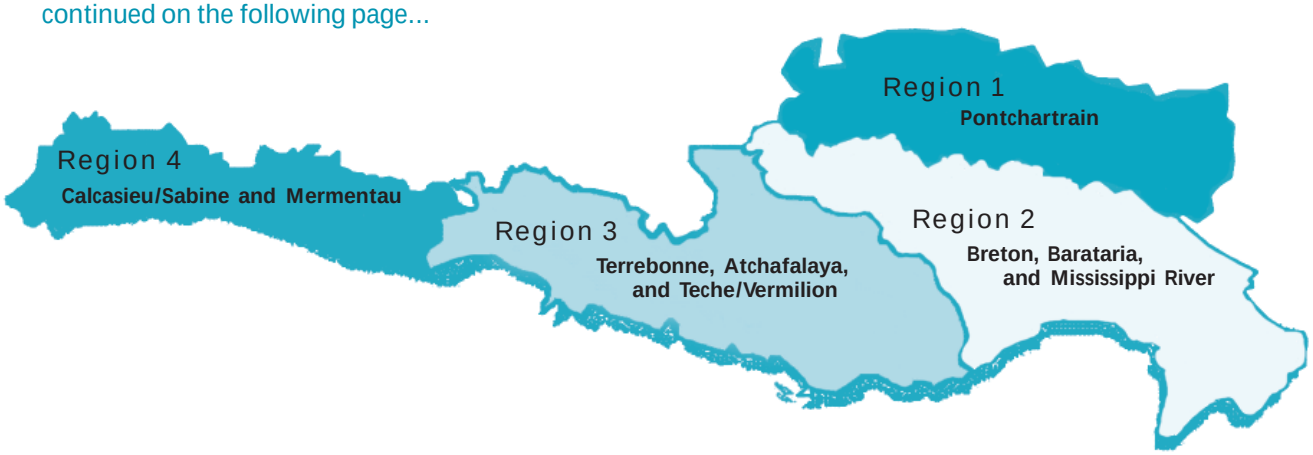
Four Regions

The Coast 2050 strategy divides coastal Louisiana into four geographic regions. Each region will utilize different strategies and tactics to reverse land loss trends along the coast.



Coastal Louisianans Support Coast 2050

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Coastal residents, like those of Holly Beach shown below, stand the most to lose in Louisiana's battle against coastal land loss. Disintegrating barrier islands, rising sea levels, and coastwide subsidence all combine to make a precarious future for southern Louisiana. Coast 2050 marks the first major cooperative effort among local residents and government agencies to address these problems together. (ACOE photo)

and workshops to gain public insight into regional and coastwide problems and plan solutions. Technicians then reviewed the public's suggested solutions to ensure they were feasible. In the end, Coast 2050's success evolved from the compilation, comparison and consolidation of everyone's input until there was a consensus for the coast's restoration goals and strategies.

Treating the Disease, Not the Symptoms

From its first days of planning, Coast 2050's overall goal has been to develop an all-encompassing plan to treat the entire ecosystem crisis instead of preparing isolated projects that only patch problem areas. In other words, Coast 2050 will treat the disease, not the symptoms.

The plan outlines two scales of strategies — a regional ecosystem scale and a small, local scale. As both regional and small restoration strategies are conducted throughout coastal Louisiana, their combined results will make a significant impact. Each regional strategy will begin by focusing on three basic goals:

- to accumulate at least enough sediment and/or organic matter to equal the combined effects of sea level rise and subsidence
- to maintain a diversity of habitats including swamps, marshes of various salinities, natural and artificial levees, chenier ridges and barrier islands
- to maintain ecosystem links to allow exchanges of energy, materials and organisms

Future projects will be developed from these regional strategies.

We Have a Plan

Now that Louisiana has developed Coast 2050 to address the large-scale problem of coastland restoration and provide projects with universal goals, it must be implemented. Construction of large-scale

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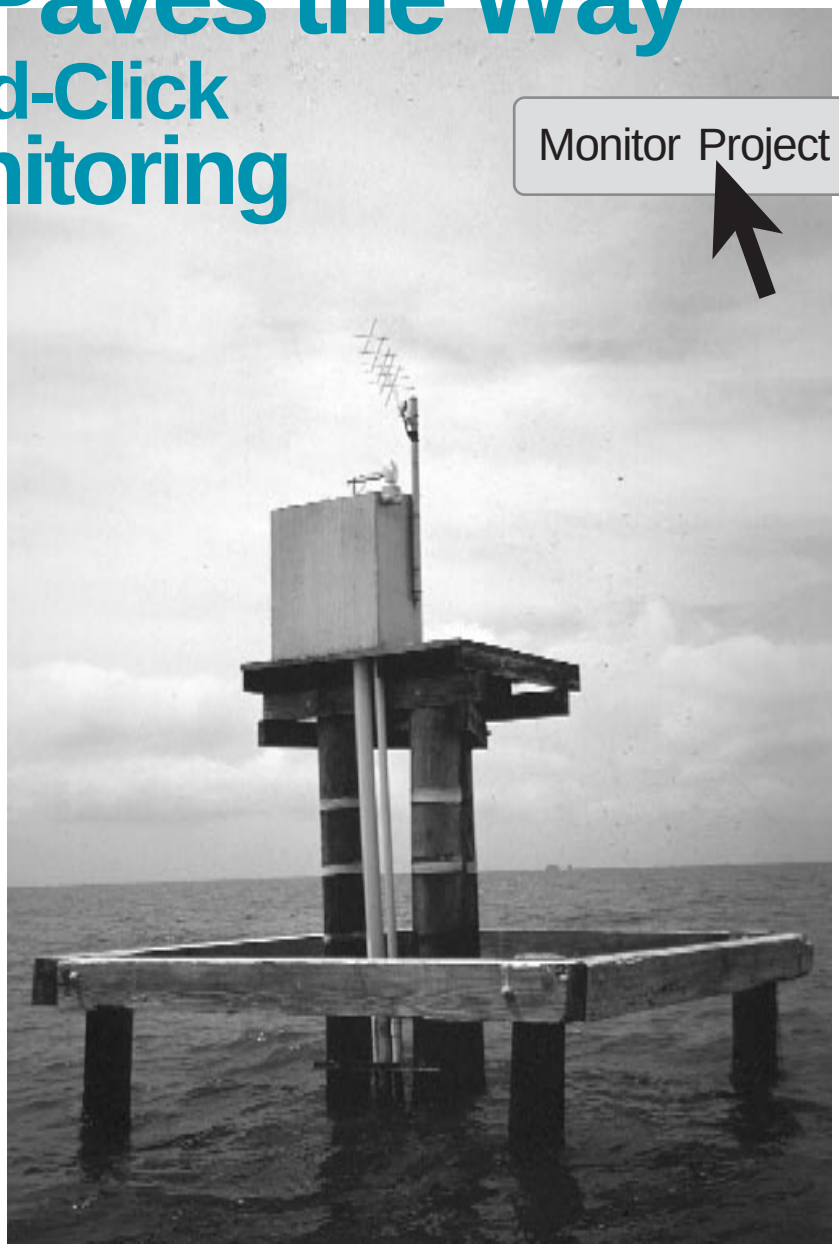
Technology Paves the Way for Point-and-Click Project Monitoring



One of the Department of Natural Resources' real-time data collection platforms. Data collected by the sensors at the base of the platform are relayed via satellite to DNR in Baton Rouge. (DNR photo)

While the end of a project's construction is something to celebrate, it's just the beginning of one of the most important parts of the project — monitoring.

Some projects actually build a base for new wetlands with dredged material and plantings. Once the base is created, other plants and animals will inhabit the new wetland. Other projects create better conditions for wetlands to flourish on their own. Measuring the course of that natural progress is the goal of project monitoring — a process made much easier with the advent of new technology.

Sensing Through Satellites

One key aspect of technology at work in the wetlands is playing an important role for the Louisiana Department of Natural Resources (DNR). Teamed with the U.S. Geological Survey, DNR is responsible for monitoring water quality and other hydrologic aspects of Breaux Act projects. According to Kirk Rhinehart, program supervisor for DNR's Database Analysis Section, the department currently maintains 11 real-time data collection platforms in the Louisiana coastal zone. Each station transmits monitoring information like water level or salinity

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Status Report:

Breaux Act Projects Approved and Completed

Mermentau Basin

Project	Agency	Const. Comp.
Humble Canal	NRCS	
Pecan Island Terracing	NMFS	
Cameron Prairie Refuge Shoreline Protection	FWS	09-Aug-94
Freshwater Bayou Bank Stabilization	NRCS	15-Jun-98
Freshwater Bayou	NRCS	15-Aug-98

Atchafalaya Basin

Project	Agency	Const. Comp.
Big Island Mining (Increment 1)	NMFS	8-Oct-98
Atchafalaya Sediment Delivery	NMFS	21-Mar-98

Terrebonne Bas

Project
Bayou Lafourche Siphon
Brady Canal
East Timbalier Island Sedir
East Timbalier Island Sedir
Flotant Marsh Fencing Der
Grand Bayou/GIWW Fresh
Isles Dernieres (Phase 0) (E
Isles Dernieres (Phase 1) (T
Lake Boudreaux FW Introd
Lake Chapeau Sediment &
Penchant Basin Plan w/o S
Vegetative Plantings Demo
Vegetative Plantings Demo
Point Au Fer
Raccoon Island Breakwate
West Belle Pass Headland
Whiskey Island Restoration
Thin Mat Floating Marsh

Calcasieu/Sabine Basin

Project	Agency	Const. Comp.
Sabine Refuge Marsh Creation, Phase One	COE	
Black Bayou Hydrologic Restoration	NMFS	
Brown Lake	NRCS	
Compost Demo	EPA	
Hwy 384	NRCS	
Perry Ridge Bank Protection	NRCS	15-Feb-99
Plowed Terraces Demo	NRCS	
Sabine Refuge Structures (Hog Island)	FWS	
Sweet Lake/Willow Lake	NRCS	
Vegetative Plantings Demo – West Hackberry	NRCS	30-Mar-94
Sabine Wildlife Refuge Erosion Protection	FWS	01-Mar-95
Mud Lake	NRCS	15-Jun-96
Cameron Creole Watershed Hydrologic Restoration	FWS	28-Jan-97
Clear Marais Bank Protection	COE	03-Mar-97
Cameron Creole Maintenance	NRCS	15-Jul-98

Teche Vermilion Basin

Project
Lake Portage
Cheniere au Tigre Sediment Trapping Device
Cote Blanche
Jaws Sediment Trapping
Little Vermilion Bay Sediment Trapping
Marsh Island Hydrologic Restoration
Oaks/Avery Canals Hydrologic Restoration-Incr
Vermilion Bay/Boston Canal
Vermilion River Cutoff Bank Protection

Pontchartrain Basin

Project	Agency	Const. Comp.
Bayou Bienvenue	NMFS	
Hopedale	NMFS	
Bayou Chevee Shoreline Protection	COE	
Fritchie Marsh	NRCS	
MRGO Back Dike Marsh Protection	COE	29-Jan-99
Red Mud Demo	EPA	
Violet Freshwater Distribution	NRCS	
Bayou LaBranche Wetlands Restoration	COE	07-Apr-94
Bayou Sauvage #1	FWS	30-May-96
Bayou Sauvage #2	FWS	28-May-97

Barataria Basin

Project	Agency	Const. Comp.
Barataria Basin Landbridge, Ph 2	NRCS	
BA-2 GIWW to Clovelly Wetland Restoration	NRCS	
Barataria Basin Landbridge, Ph 1	NRCS	
Barataria Bay Marsh Creation	COE	
Bayou L'Ours Ridge Hydrologic Restoration	NRCS	
BBWW "Dupre Cut" – East	NRCS	
BBWW "Dupre Cut" – West	NRCS	
Grand Terre Vegetative Plantings	NMFS	
Jonathan Davis Wetland	NRCS	
Myrtle Grove Siphon	NMFS	
Naomi Outfall Management	NRCS	
West Pointe-a-la-Hache Outfall Management	NRCS	
Lake Salvador Shoreline Protection	COE	21-Mar-96
Lake Salvador Shore Protection Demo	NMFS	30-Jun-98

Breton Sound Basin

Project	Agency	Const. Comp.
Caernarvon Outfall Management	NRCS	
Upper Oaks River	NRCS	

Mississippi River Delta Basin

Project	Agency	Const. Comp.
Delta-Wide Crevasses	NMFS	
Dustpan/Cutterhead Dredge Demo	COE	
Hopper Dredge Demo	COE	
West Bay Sediment Diversion	COE	
Channel Armor Gap Crevasse	COE	02-Nov-97

sin

	Agency	Const. Comp.
	EPA	
	NRCS	
ment Restoration #1	NMFS	
ment Restoration #2	NMFS	
mo	NRCS	
water Introduction	FWS	
East Island)	EPA	24-Oct-98
Trinity Island)	EPA	22-Oct-98
duction, Alt B	FWS	
& Hydrologic Restoration	NMFS	
Shoreline Stabilization	NRCS	
o-Timbalier Island	NRCS	30-Jul-96
o-Falgout Canal	NMFS	30-Dec-96
	NMFS	08-May-97
ers Demo	NRCS	31-Jul-97
Restoration	COE	17-Jul-98
(Phase 2)	EPA	25-Aug-98
	NRCS	

	Agency	Const. Comp.
	NRCS	
Demo	NRCS	
	NRCS	15-Dec-98
	NMFS	
	NMFS	
	COE	
r 1 (B.S. only)	NRCS	
	NRCS	30-Nov-95
	COE	11-Feb-96

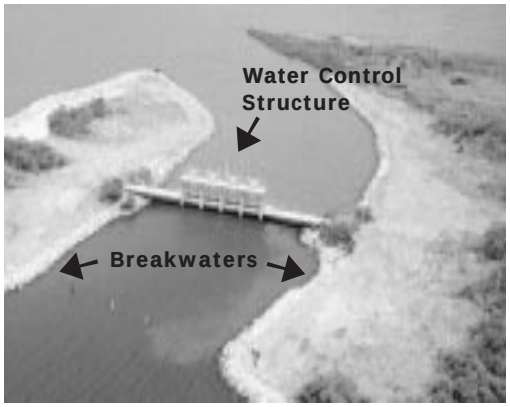
Note: All coastal basins include the Nutria Harvest for Wetland Restoration Demonstration Project, sponsored by the U.S. Fish and Wildlife Service.

Quick News

NRCS Projects See Completion

The USDA Natural Resources Conservation Services (NRCS) has recently completed several projects with the Louisiana Department of Natural Resources.

- **Cameron Creole Maintenance** – The first two construction units of this project in Cameron Parish have been completed at a cost of $700,000. The project will provide a total of $3.7 million to maintain the structural works of the Cameron Creole Watershed, including water control structures and the 19-mile levee along the west shore of Calcasieu Lake.
- **Cote Blanche Hydrologic Restoration** – Construction was completed in January on this $5 million project located on 30,000 acres of fresh marsh in St. Mary Parish. The project is designed to reduce shoreline loss due to wave erosion and prevent interior marsh erosion by reducing excessive tidal fluctuation and rapid tidal exchange. ❍



Maintenance work at Cameron Creole included reinforcing rock breakwaters around water control structures in the project area. (ACOE photo)

Coastal Louisianans Support Coast 2050 / *continued from page 4*

landscape remedies, however, will require a major increase in restoration spending.

In fact, current state and Breaux Act restoration projects address only 22 percent of land loss problems. Breaux Act projects, a significant percent of current restoration projects, receive up to $40 million a year in funding. Coast 2050 intends to increase that effort tenfold. That means spending at least $400 million a year on restoration projects totaling $14 billion over the next 30 years.

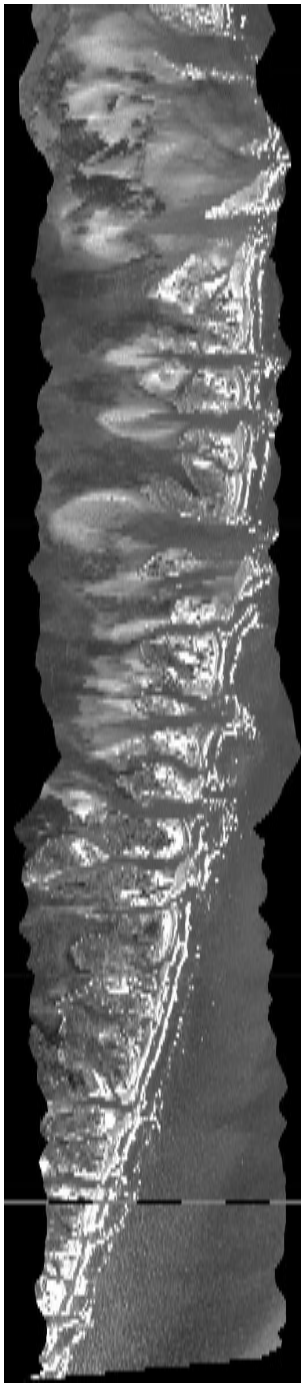
Increasing the dollars means new funding options must be identified. Whether these projects are financed by state, federal or other efforts, they need to be backed by Louisiana's strong commitment to saving the coastline by the year 2050. Bill Good sums it up when he says: "We have a plan. It will cost more, but it will be well worth it." ❍

Bill Good Named Conservation Professional for 1998

Bill Good, administrator of Louisiana's Coastal Restoration Division of the Department of Natural Resources, was named Conservation Professional for 1998 at the Governor's Conservation Awards banquet in February.

The award selection committee cited Good's commitment to Coast 2050. Good was involved in every step of Coast 2050's development, from moderating public meetings and developing a plan outline, maps, graphs and charts, to ensuring public participation and communicating 2050's goals to the media. ❍

Spectral Imaging Helps in Study of Hurricane Damage



A composited image of the Chandeleur Barrier Islands in Breton Sound taken by the AVRIS scanner at an altitude of 12,500 feet. (JPL/NOAA photo)

Images obtained through a new technique developed by NASA's Jet Propulsion Laboratory in Pasadena, California, are helping scientists in Louisiana understand the devastating effects of Hurricane Georges on the state's coastal areas.

The images were gathered by the Airborne Visible/ Infrared Imaging Spectrometer (AVIRIS), an instrument that measures 224 spectral channels and gives scientists a highly detailed look at what is happening on the surface of the earth in ways that are invisible to the naked eye. A flight crew from the National Oceanic and Atmospheric Administration flew the instrument over the Chandeleur Island chain in late October 1998.

The AVIRIS data shows where sand moved and how vegetation was impacted by salt water as a result of Hurricane Georges. "The damage from Hurricane Georges on the Chandeleurs was as bad as that of Hurricane Camille almost 30 years ago," said Dr. Shea Penland of the University of New Orleans. "The imagery from the AVIRIS scanner gives us a great opportunity to understand the full extent of the hurricane's damage and look at ways to deal with it." ❍

Technology Paves the Way for Point-and-Click Project Monitoring

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content to DNR in Baton Rouge via a series of satellite links. "The satellite-linked platforms now enable us to get information hourly, and under emergency situations, data can be collected every 15 minutes," says Rhinehart.

SONRIS/2000

Rhinehart points out that collecting information is only one part of a technology-driven monitoring process. Organizing and distributing that information to the technicians, researchers and experts is just as important.

To that end, DNR recently initiated a major overhaul of its database management systems and is implementing the Strategic Online Natural Resources Information System, known as SONRIS/2000. The Biological Monitoring Database portion of this system, which should be completed by mid-1999, will provide a central repository for all DNR coastal restoration project monitoring data.

"With the new system in place, any person with World Wide Web access can retrieve information about coastal restoration projects in Louisiana," says Rhinehart. "If you want to know the water level at a particular project, all you'll have to do is point and click." ❍

The WATERMARKS Interview

Woody Crews

Woody Crews has been actively involved as a citizen participant in the development of the Coast 2050 Plan. Mr. Crews, who lives in the New Orleans area where he was born and raised, is a member of the Jefferson Parish Marine Fisheries Advisory Board.

Mr. Crews, how do you see the challenge facing the Coast 2050 planners?

This is a tremendous, tremendous problem we're facing. The Delta and the Delta plains took 10, 15, 20 thousand years to create, and we screwed them up pretty good in 70 to 80 years. It's going to take a lot of time to rebuild. But before we can rebuild, we have to stop the bleeding. We have to slow down the effect of salt water on our freshwater marshes, reverse the processes, in direct contrast to what we've been doing for the last 70 years. At the same time, I know that in south Louisiana we use our wetlands commercially for the seafood industry, the oil and gas industry, transportation – all kinds of things. These things all have to be taken into account because a lot of people's jobs are affected, a lot of people's lives are affected.

What has impressed you about the level of public involvement in the creation of Coast 2050?

There may have been other plans that had public involvement, but this is the first one I had any hands-on experience with. The thing that impressed me the most was that the managers of this program came in with a blank slate. They said, "How are we going to work this process?" As a result, it was a real joint effort of the public and the federal, state and local agencies.

What about the business community in Louisiana? Does it have significant interest in Coast 2050?

I'm in the insurance business; any effects of the plan on us will be peripheral. But let's talk about the businesses that use the coastal wetlands. Commercial fishermen – without Coast 2050, the marshes will continue to erode to the point where we no longer have a stable estuary to provide a nursery ground for small shrimp, crabs, shellfish, and finfish. Are they going to see an impact? You'd better believe it.

Then let's look at the oil and gas industry. Their infrastructure inshore has not been built with the same strength as infrastructure that's built offshore. But now inshore drilling faces the same threat as offshore because as these marshes and backwaters have degraded, they have now become huge bays that can receive tremendous wave and tidal action. If we don't rebuild these marshes, the infrastructure will have to be redesigned or rebuilt because the protective fringing marshes will have eroded to nothing.

"The Delta and the Delta plains took 10, 15, 20 thousand years to create, and we screwed them up pretty good in 70 to 80 years. It's going to take a lot of time to rebuild."

And of course on the transportation side, there are boats and ships that use channels that have been dredged through, particularly the Mississippi River Gulf Outlet. That particular channel was supposed to be some 200 yards wide—now in places it's over a mile wide. Tremendous amounts of salt water can move uninhibited directly into inshore waters. To reduce or even close off that flow of water would mean somehow closing off that structure. If that outlet is closed or access becomes limited as a result of Coast 2050, those vessels are going to have to figure out another way to unload their cargo.

Q Is there anything really new in Coast 2050? How does it differ from other coastal preservation plans?

A My answer has to be, there's probably nothing new, and probably everything is new. I thought I had seen some awfully good ideas before, but nothing that linked the plans for eastern Louisiana and western coastal Louisiana. This particular document ties in all the coastal parishes – it has the 100 percent unanimous support of all the local governments.

Then there is also in this plan the realization that we can't fix the problems tomorrow and we can't fix them next year. We need to think geologically — very long-term. Everybody thinks we can rebuild by putting a dredge out there and creating mountains or creating level flatlands. We really can't do it like that. The processes are so dynamic that we have to use natural forces like riverwater diversion, like freshwater diversion, like selected dredging projects in order to rebuild over time. I think all the theories were there before, but I think this is the first time it's been all brought together.

"There is a very real decision that has to be made about whether south Louisiana is going to survive. If it is, the cost is going to be considerable. I know that the first cost estimates were roughly $14 billion projected over the next 20 – 35 years. Can we spend it? In a flash."

Q You've touched on this already, but what do you think are the most controversial aspects of the Coast 2050 Plan?

A There is a very real decision that has to be made about whether south Louisiana is going to survive. If it is, the cost is going to be considerable. I know that the first cost estimates were roughly $14 billion projected over the next 20 – 35 years. Can we spend it? In a flash. The problem is that the return on investment may not come for a very long time, and that of course will generate controversy

We've been doing projects with a chunk of money from Program A and a chunk from Program B and a chunk from Program C. We need a Coast 2050 program that funds the entirety. Louisiana must provide some of the funding, but we're not a rich state. Much of the damage has come from the oil and gas industry and from the navigational waterways, and a lot of people all around the nation have benefited from these. So I believe it's a national responsibility to help restore the damage.

Q What advice would you give the managers of Coast 2050?

A I'd say let those directly affected by the loss of wetlands carry the message to Congress and to the nation. They are the ones who should tell the story – the people who live in the communities along the wetlands, and the people who are affected by the loss of the storm surge buffer. And I'd advise the managers not to lose touch with the public. This plan can't be sold without public support. ❍

High-Resolution Aerial Photography Essential to Coastal Restoration Efforts

"To us, the definition of a successful project lies in total land created or recovered," explains Bill Jones, a geographic information system (GIS) specialist at the U.S. Geological Survey's National Wetlands Research Center (NWRC) in Lafayette, La. For Jones and others at NWRC, tracking that sort of success means looking at aerial photography of project areas both before and several times after project construction. "The quality of today's high-resolution aerial photography and the use of Global Positioning System (GPS) satellite data really cuts down the time it takes to gauge our progress," he says.

Historically, photographic interpretation has been a lengthy, laborious process. "First, the photos had to be taken, then individually marked and adjusted for the curvature of the earth," says Jones. Adjusting those photos was a time-consuming task that had to be completed by hand before map data could be entered into the computer and finally interpreted by a GIS specialist. It could take as long as three years to complete the work for all of coastal Louisiana.

Technology, however, has sped things up. "Now we can scan the photographs directly into the computer and apply GPS ground-control points to let the computer automatically rectify the photographs for the curvature of the earth," explains Jones. Image specialists then tell the computer what to look for, such as vegetative growth or water expansion, and the machine does the interpretation automatically. According to Jones, turnaround time has dropped from years to just a few months.

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