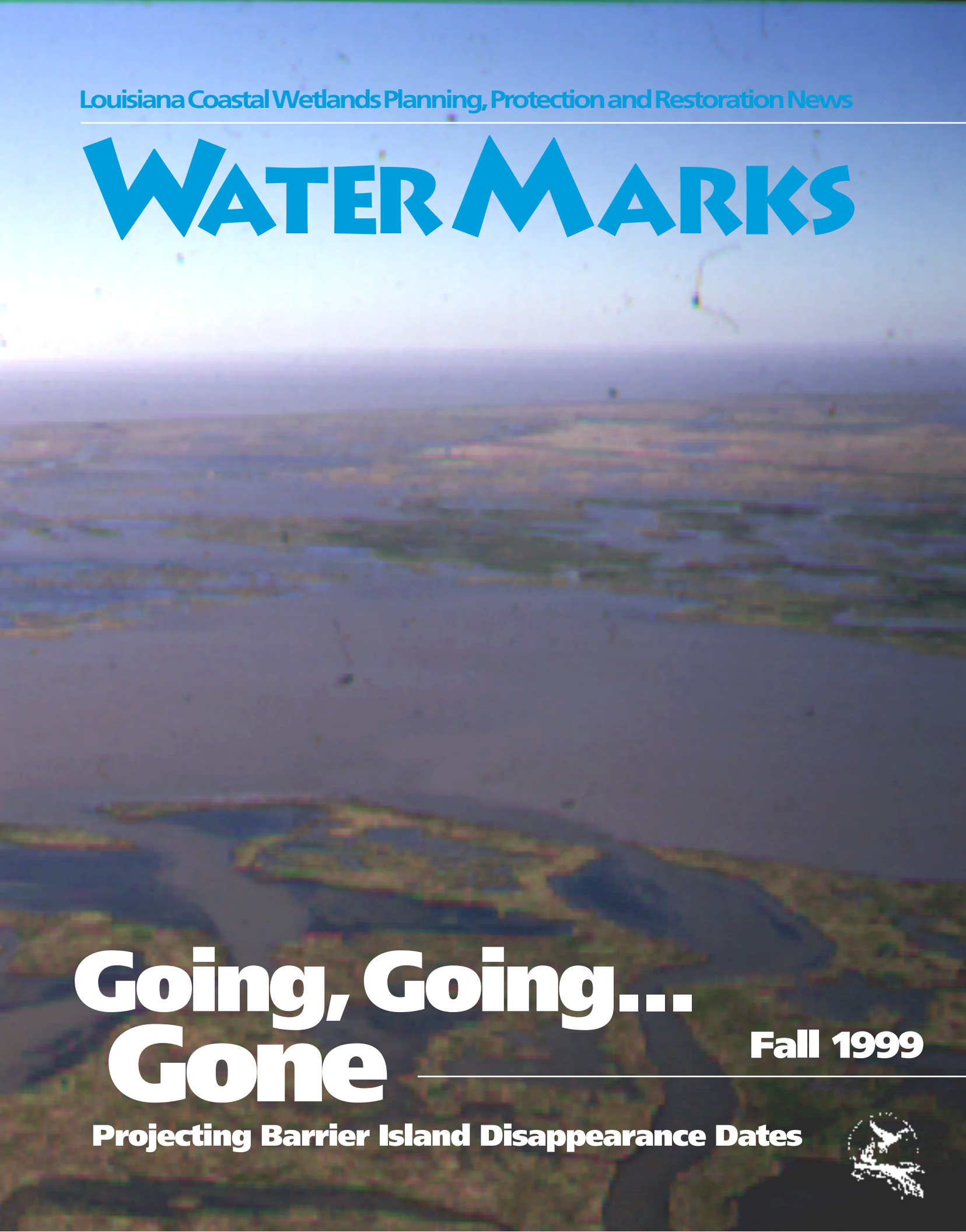
Louisiana Coastal Wetlands Planning, Protection and Restoration News

Water Marks



Going, Going... Gone

Fall 1999

Projecting Barrier Island Disappearance Dates

WaterMarks

Fall 1999

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.

In This Issue...

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
http://www.btnep.org
http://www.crcl.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.

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

James D. Addison
WaterMarks Editor
New Orleans District
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, LA 70160-0267
(504) 862-2201
email: James.D.Addison@mvn02.usace.army.mil

About This Issue's Cover . . .
The Lake Chapeau Marsh Creation and Hydrologic Restoration project area is only one part of coastal Louisiana experiencing rapid land loss.

Connecting the World:

LA Coast Web Site Brings Researchers and Resources Together

You may not see the connection between coastal Louisiana and the continent of Australia, but then, you're not Dr. Christine Bach.

Dr. Bach, a scientist in the Natural Resources Division of Australia's Department of Lands, Planning and Environment, was looking for ways to monitor remote wetlands restoration projects when she discovered the LA Coast Web site. The site at **http://www.lacoast.gov** is full of project reports, satellite images, land loss maps and related publications.

The site at http://www.lacoast.gov is full of project reports, satellite images, land loss maps and related publications.

Dr. Bach was particularly interested in reading about Louisiana projects that battle saltwater intrusion and weed invasion — the primary problems she faces in northern Australia. And after implementing the solutions she found at lacoast.gov in a new Australian monitoring system, she called the site, ". . . very comprehensive, and for my interests in saltwater intrusion more relevant than most others."

continued on following page...

Connecting the World:

LA Coast Web Site Brings Researchers and Resources Together

continued from page 3

"I am teaching my first Wetlands Restoration course this winter and am finding some great info about LA wetlands here. Please keep up the good work!"

Many people are agreeing with Dr. Bach. Since going online in 1998, the LA Coast Web site has boomed, with over 500,000 hits in the last year alone. People of various ages and levels of expertise are using the site. Environmental scientists throughout the world are learning about Louisiana's problems in an effort to find new ways to help their own wetlands. Teachers are discovering educational tools to supplement their lesson plans. Grade school, high school and college students alike are working with it as a research tool for projects, reports and theses.

Besides Dr. Bach, the LA Coast Web site has had visits from people in 45 countries in the last year, including Brazil, France, Hungary, Israel, Japan and South Africa.

According to Scott Wilson, electronics engineer with the National Wetlands Research Center in Lafayette, which manages the La Coast Web site, some of those visits are surprising: "We've even had people visiting the site from Yugoslavia. With all the chaos going on during the last year, they were still looking at our site."

You might expect international visitors to lacoast.gov to look for information different from that sought by visitors from coastal Louisiana. But some of the most common problems in Louisiana — saltwater intrusion, coastal and barrier islands erosion — are also points of interest for visitors from all over the world.

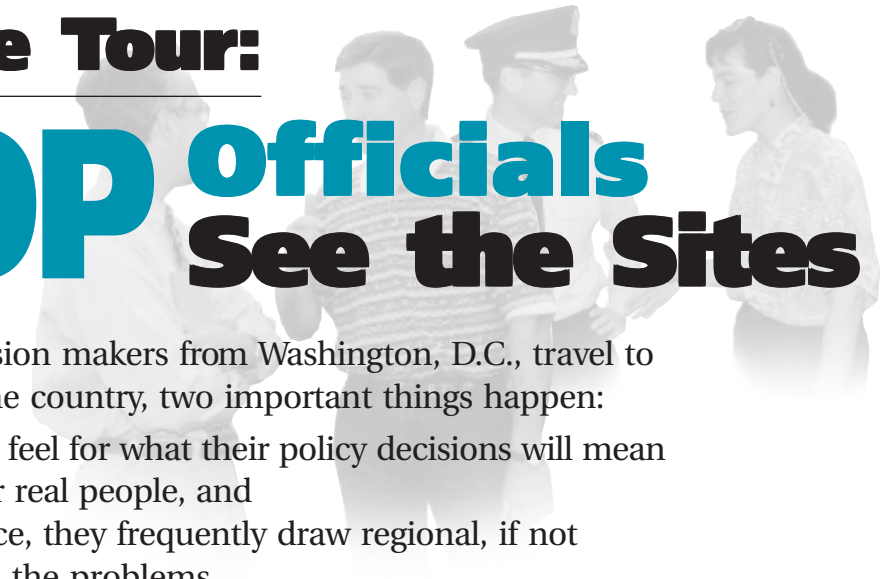
All of these issues are covered in great detail on the site through project reports, and that's what visitors continue to comment on. Scientists, teachers and students are responding to the quality of the site and the importance of its information. Jane from the Cape Cod area left this message in the guest book: "My first visit to this Web site stems from an interest in finding what can be done to restore a particular wetland on Cape Cod — a long way from the LA Coast! After I complete an initial exploration of your impressive site, I'll get back, probably for further guidance. NICE JOB!" Sean wrote, "Looks great! I am teaching my first Wetlands Restoration course this winter and am finding some great info about LA wetlands here. Please keep up the good work!" ❍

For the latest information on Louisiana's coastal projects, check out the Web:

http://www.lacoast.gov

Taking the Tour:

TOP Officials See the Sites



When top-level decision makers from Washington, D.C., travel to problem areas of the country, two important things happen:

1. they acquire a better feel for what their policy decisions will mean in real places and for real people, and
2. by their very presence, they frequently draw regional, if not national attention to the problems.

That's what took place this summer in Louisiana when two high-level delegations came to the state to tour coastal wetland areas. In June, Charles Fox, assistant administrator for water at the Environmental Protection Agency, and Michael Armstrong, associate director of mitigation for the Federal Emergency Management Agency (FEMA), toured Louisiana's coast. In late July, Interior Secretary Bruce Babbitt visited Louisiana as part of a three-day, three-state tour of the lower Mississippi River. He was accompanied by Paul Westphal, assistant secretary of the Army for civil works, who oversees the Corps of Engineers.

FEMA Pledges Support

Fox and Armstrong focused their attention particularly on barrier islands and areas in the active Mississippi River Delta that might prove feasible for delta building by river diversions, dredging or other means. Expressing concern about the continuing loss of coastal wetlands, Armstrong said, "We can't afford to lose the natural sponge for storm surges that the wetlands provide. We can't afford to lose the barrier islands, which protect the coastline from the ravages of hurricanes."

"We can't afford to lose the natural sponge for storm surges that the wetlands provide. We can't afford to lose the barrier islands, which protect the coastline from the ravages of hurricanes."

Armstrong, speaking on behalf of FEMA Director James LeeWitt, pledged an increased presence by FEMA in coastal Louisana and a new commitment to partnership with state and federal agencies in restoring coastal wetlands.

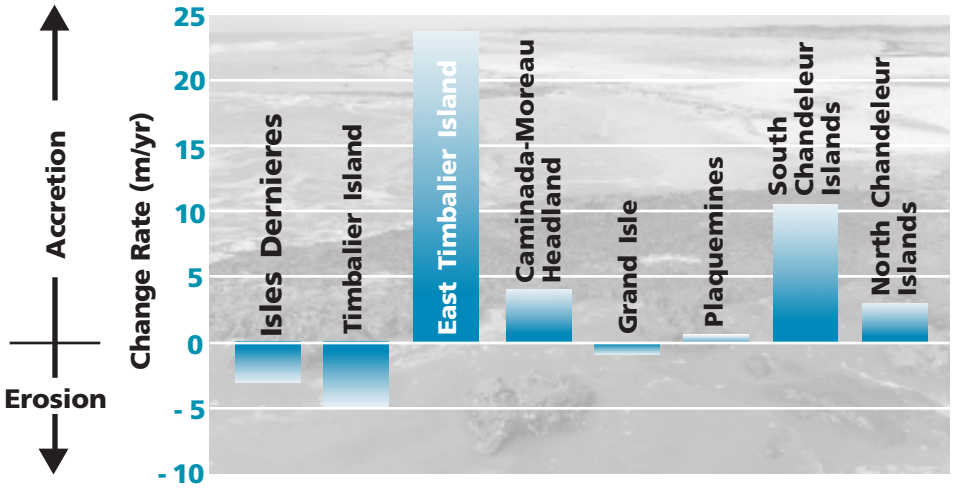
Babbitt Commends Coast 2050

In a news conference following his tour with Westphal, Babbit praised Louisiana for adopting Coast 2050, a far-reaching landscape restoration strategy approved by the Breaux Act Task Force, Louisiana's State Wetlands Authority and all 20 coastal parishes. He said that in approving the plan, the state has elevated solving the wetlands loss problems to the national agenda and is making Louisiana's disappearing coast as well known as the problems of Florida's Everglades. ❍

Going, Goi
Projecting Barrier Islan

Maps, photographs and recent satellite images of barrier islands all depict significant changes in the barriers over the last 150 years. But what is disturbing to observers is that while some of these islands seem to be only shifting location, many are disappearing completely.

According to Randy McBride, assistant professor of geology at George Mason University in Virginia (formerly from Louisiana State University), Isles Dernieres, Timbalier Island and the Grand Terre islands are disappearing the fastest and are expected to erode entirely in 20 to 50 years. "They have short life expectancies because of both gulfside and bayside erosion. It's devastating," McBride said. "These islands are something large-scale is done now, th



Long-term rates of change between 1855 and 1989 show both accretion and erosion for barrier island shorelines facing Louisiana's coast. Between the late 1800s and the 1980s, deposits left from washovers caused some of these shorelines to migrate landward at rates up to 24.0 meters per year. Erosion, in contrast, has caused loss on other shorelines at rates from 1 to 5 meters per year.

Scientists like McBride determine lo islands by first comparing more than 1 positions. The data detail shoreline ch and rate.

McBride predicts shoreline position calculating a rate of change based on t positions. To determine this figure, he line have eroded in the last 30 or 100 y number of years being used. For exam 210 meters over the last 30 years, the l per year.

To estimate the change in the island long-term rate of change is multiplied island losing 7 meters of shoreline a y meters in the next 100 years.

Predictions of how much an island when the island will disappear, includ island as well as shoreline change. Are island, such as inlet cutting or interior accurate data on the island's total eros calculation is then based on the long-t same manner as shoreline change (in number of years divided by the numb

The Fast Track t

The timeline above shows anticipated years of disappearance for several o are in danger, other more stable barriers exist. For example, Grand Isle has

nd Disappearance Dates

on the brink of catastrophe. Unless
ey're history."
ong-term changes in Louisiana's barrier
130 years of data that depict shoreline
ange according to magnitude, direction

ns 30 and 100 years in the future by
the island's yearly changes in shoreline
calculates how many meters of shore-
ears and then divides that figure by the
mple, if an island's shoreline has eroded
ong-term rate of change equals 7 meters

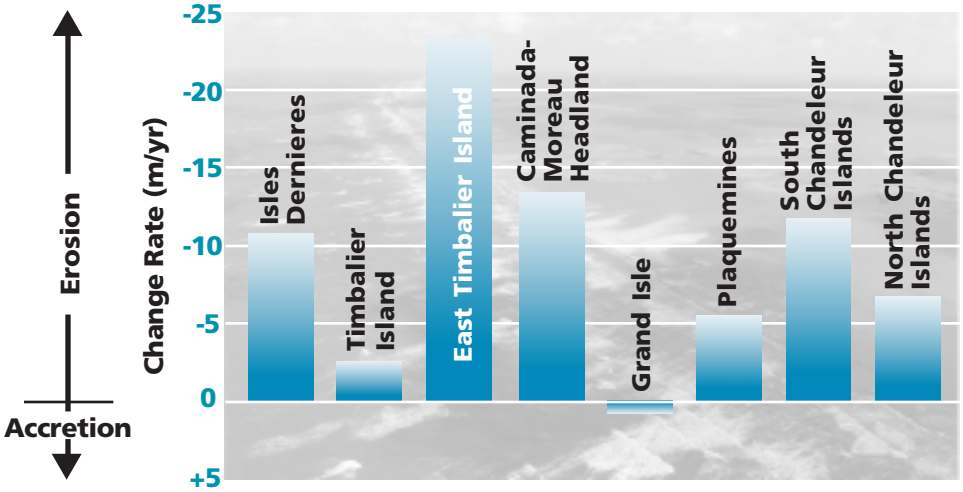
d's shoreline 100 years from now, the
by 100. This calculation predicts that an
ear will move landward another 700

will change in the future, and ultimately
e rates of change for the total area of an
ea change includes breakup within an
pond development, and provides more
sion. The final disappearance date
erm loss rate, which is calculated in the
this case, hectares lost over a certain
er of years).

To figure a disappearance date, scientists divide the island's current area by the long-term loss rate. For example, if an island is currently 1,000 hectares (1 hectare equals 2.471 acres) and over the last 100 years has been losing 8 hectares a year, the island is projected to disappear 125 years from now. ❍

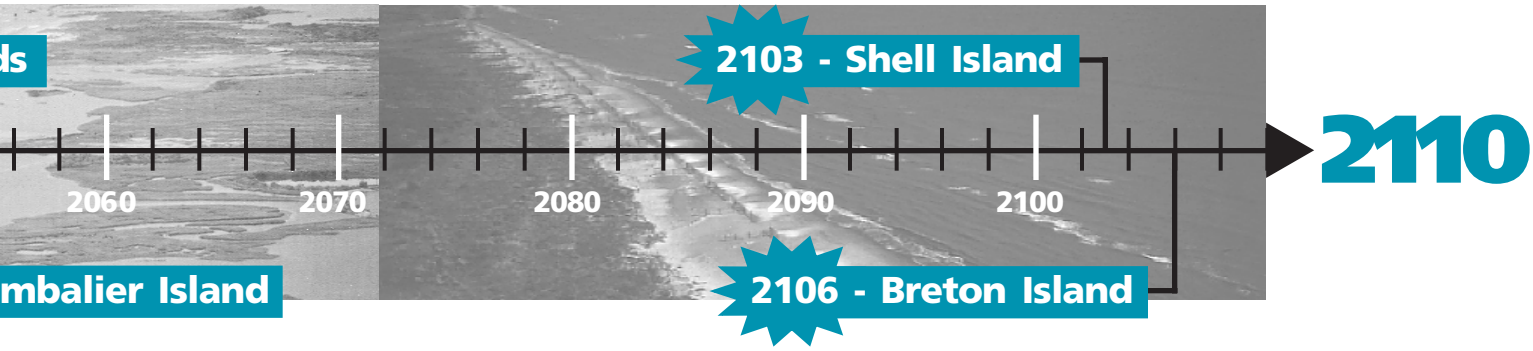
For more detailed information see McBride's article:

McBride, R.A. and Byrnes, M.R., 1997. Regional variations in shore response along barrier island systems of the Mississippi River Delta; historical change and future prediction. Journal of Coastal Research, v. 13, n. 3, pp. 628-655.



Long-term rates of change between 1855 and 1989 reveal that barrier island shorelines facing the Gulf of Mexico are eroding at rates up to 23.1 meters per year. Grand Isle's gulfside accretion at about 1 meter per year is overshadowed by the erosion on the remaining islands.

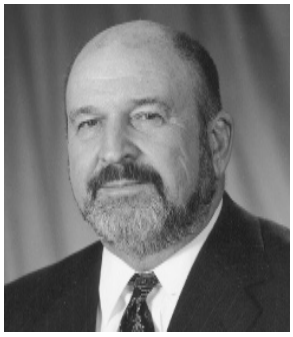
o Disappearance



f Louisiana's barrier islands through 2110. Although these barrier islands
s a life expectancy about 900 years longer than that of Timbalier Island.

Quick News

Governor Signs Funding Law



Governor Mike Foster

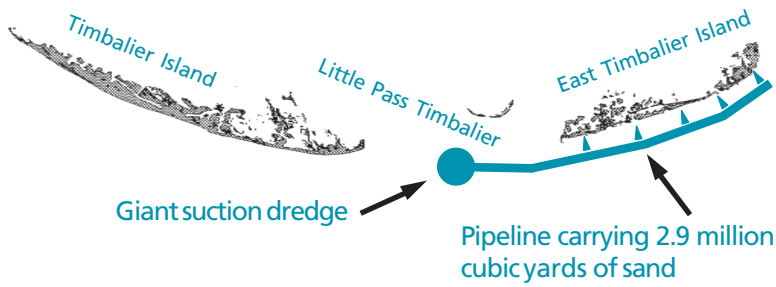
House Bill 1081, which stabilizes the annual funding of Louisiana's Wetlands Conservation and Restoration Fund, was recently signed into law by Governor Mike Foster.

The new law mandates that each year up to 2 percent of the state's net mineral income, plus $5 million, be dedicated for coastal restoration. This stabilizes the stream of revenue for the fund at about $18 million annually. The money will be used as a match with federal revenues, together amounting to up to $80 million a year for projects. ❍

East Timbalier Restoration in Progress

An $11.2 million Breaux Act project that will link the western and eastern fragments of East Timbalier Island is currently under way. Sponsored by the Louisiana Department of Natural Resources and the National Marine Fisheries Service, the project will pump 2.9 million cubic yards of sand into the one- and two-foot-deep water where the island once stood, restoring about 250 acres of the island.

The sand is being collected from under the waters of Little Pass Timbalier by a giant suction dredge and pumped more than three miles to the island. So much erosion occurred in the last year that the amount of sand called for in the original specifications had to be increased 30 percent. ❍



CD-ROM Now Available

"Explore Coastal Louisiana," an interactive, educational CD-ROM designed for the general public, is now available. High schools will find it a useful addition to their environmental science curricula, while science centers and visitor centers may wish to include it in their exhibits.

"Explore Coastal Louisiana" was produced with Breaux Act funds by the Coastal Wetlands Research Center of the U.S. Geological Survey and the Barataria/Terrebone National Estuary Program. To obtain a copy, contact the Breaux Act Task Force outreach coordinator at 504-862-2786, or go to "free stuff" on the LA Coast Web site (http://www.lacoast.gov). ❍

Sweet Lake-Willow Lake Contract Awarded

Construction contractors reinforce a canal bank with rock. Similar work will occur at the Sweet Lake-Willow Lake project.

The $1.3 million contract for the Sweet Lake-Willow Lake Project has been awarded to help protect the north bank of the Gulf Intercoastal Waterway in Cameron Parish.

For years, waves generated by boats have taken a toll on the waterway's banks, and placing rock along the bank where it breaches into Sweet and Willow lakes will reduce erosion of the bank and provide a rock buffer against the waves.

This Natural Resources Conservation Service project will help stabilize about 14,000 feet of shoreline at Sweet Lake and approximately 4,200 feet of shoreline at Willow Lake along the Intracoastal Waterway. To carry out this project, approximately 55,500 tons of rock riprap will be placed along the bank of the waterway.

"Besides bank protection, the project will also increase aquatic vegetation within a 6,000-acre area," explained Don Gohmert, NRCS state conservationist. "The project will also allow retention of fresh water and prevent loss of sediments and nutrients currently being suspended and flushed out of the system." ❍

Col. Julich Heads Up Task Force

Col. Thomas Julich is the new Breaux Act Task Force chairman. That role is one of the duties he assumed on July 16 when he took command of the U.S. Army Corps of Engineers' New Orleans District. "I consider the work that I will be involved with on the Breaux Act Task Force to be one of the most important contributions that I can make as the district engineer here in New Orleans. Much has been done to date, but so much more is needed," Julich stated.

Col. Thomas Julich

Julich formerly served on the Army staff at the Pentagon in Installation Management. 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, and a two-year assignment as district engineer for the Charleston District. A 1976 graduate of West Point, he holds a master's degree in civil engineering from the University of Washington. He is also a recent graduate of the Industrial College of the Armed Forces at Fort McNair in Washington, D.C. ❍

Breaux Act Video in Production

Initial filming is under way on a new Breaux Act educational video that focuses on Coast 2050 projections, the economic dimensions of Louisiana's coastal wetlands loss and the potential effects on the national economy.

The increasing vulnerability of Louisiana's coastal communities to hurricanes and other severe storm events will also be covered. The video is scheduled for release in late 1999.

Another educational video on coastal wetland loss was recently released, called "Here Today, Gone Tomorrow." Produced by the New Orleans District, U.S. Army Corps of Engineers, it describes the sobering impacts of coastal erosion through the words of a fisherman, and shows the viewer the gains made from island restoration and large-scale freshwater diversion projects. Call 504-862-2201 to request a copy. ❍

The WaterMarks Interview

Kerry St. Pé

Executive Director, Barataria-Terrebonne National Estuary Program

Kerry St. Pé is director of the Barataria-Terrebonne National Estuary Program (BTNEP), a cooperative local/federal program designed to assess problems and find solutions for the rapidly disappearing habitats of the Barataria-Terrebonne estuarine system. The Barataria and Terrebonne basins span over 4.1 million acres between the Mississippi River on the east and the Atchafalaya basin on the west. The system extends from the town of Morganza in the north to Grand Isle in the south. This area is eroding faster than any other coastal system in the world.

How is your position at BTNEP related to Louisiana's barrier island issue?

As director of the national estuary program, I represent a large number of constituents in Louisiana that include area residents, industries and agencies who are stakeholders in the Barataria and Terrebonne basins. Together this group has developed a comprehensive plan for maintaining and preserving the estuary. One significant aspect of that comprehensive plan is an action plan specifically dedicated to preserving and restoring barrier islands. To us, the barrier island issue is something of sufficient importance to be included as a separate action plan in our overall management picture.

In BTNEP's estimate, how much is preservation and restoration going to cost?

Well, for the barrier islands included in the estuary, it's relatively expensive. We consider the estimates of private consulting groups and construction firms who make coastal preservation and restoration their business. To restore just the 85 miles of barrier islands in the estuary, they say it's going to cost around $500 million.

How is a figure of that size received by coastal residents and industries?

I'm not sure that actual costs have been presented to the majority of the public; however, I can say this: we've held several public meetings throughout the estuary, and the one resounding wish of the general public at these meetings is that barrier islands be restored. They're telling us, "Yes, it's costly, but it will be far more expensive not to restore them."

What's driving this consistent opinion throughout the estuary?

Storm surge protection. Without question, it's probably one of the biggest benefits of barrier islands and an issue of infinite importance to coastal communities. As wetlands continue to degrade, the importance of barrier islands in slowing the leading surge from a hurricane becomes all the more important. It's an indisputable fact that the public knows about it. They've seen it at work and have seen storm surges grow worse as the islands grow weaker.

But there's more to barrier islands than just storm surge protection, right?

Oh, absolutely. The islands are extremely vital habitat for neo-tropical migrants — brightly colored birds that

"As wetlands continue to degrade, the importance of barrier islands in slowing the leading surge from a hurricane becomes all the more important."

migrate from Central and South America. Louisiana's barrier islands are the first land most of these birds encounter after their trans-Gulf migration. By the time they reach the islands they're so tired and hungry that they literally drop right out of the sky. Barrier island habitat is essential for their survival while they rest and feed.

Once they leave, many fly up towards the East Coast, where birding is a fairly popular activity. In fact, entire economies of small, Northeastern communities rely on birding as a major source of income. Losing barrier island habitat for these migrants could ultimately lead to economic losses in small communities more than a thousand miles away.

So, barrier island loss is really a national problem?

Absolutely. The neotropical migrant issue is only one of the concerns linking Louisiana's barrier islands to the rest of the U.S. The islands also play a significant role in our nationally important shrimp fisheries. In the shrimp life cycle, the eggs are laid offshore and flow inland through the inlets created by barrier islands. After the shrimp hatch, they spend quite a bit of time in internal marshlands. When they leave these wetlands, they head back into the bays between the shore and the barrier islands where they stay for a "staging" period of as much as two weeks before heading out to sea again. Wildlife and fisheries experts in the estuary are already reporting that because of barrier island loss, there is increased water exchange in the bigger bays, like Terrebonne Bay, and that increased exchange is affecting the staging periods of shrimp. Impacts such as the loss of barrier islands and other coastal lands translate to a national problem because 25 percent of all the commercially important estuarine species that are harvested in the entire United States, like shrimp, oysters, menhaden and other fisheries, spend all or part of their life cycle in the Barataria-Terrebonne National Estuary. With figures like that, it becomes clearer that barrier island restoration is a national problem.

"South Louisiana has yet to get the degree of attention that other watershed systems have received. There's a real need to continue educating the nation about our plight."

With these facts in mind, is anyone opposed to restoration?

No, I don't think there's anybody actually opposed to barrier island restoration. I know of no one who's specifically against the idea. But there are some real tough decisions that need to be made when there are limited financial resources for restoration. It's a matter of deciding where the money is best spent. South Louisiana has yet to get the degree of attention that other watershed systems have received. There's a real need to continue educating the nation about our plight. As I said earlier, we're already seeing problems from barrier island loss. This is a national crisis, and we need to get that truth out. It's going to take some substantial resources to correct our problems. ❍

Web Note

For more information about the Barataria-Terrebonne National Estuary Program, check out the Web:

http://www.btnep.org