



WATER MARKS

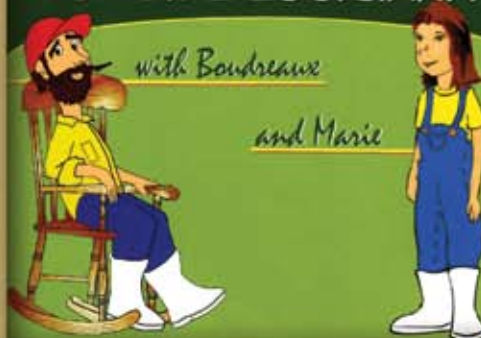
Louisiana Coastal Wetlands Planning, Protection and Restoration News

June 2008 **Number 37**

Louisiana's Wetlands
Hang in Balance

**Education, Outreach
Build Public
Support for
Coastal Restoration**

Explore
COASTAL LOUISIANA



with Boudreaux

and Marie



Black Bears and Songbirds
of the Lower Mississippi
River Valley



Use with MS Windows.

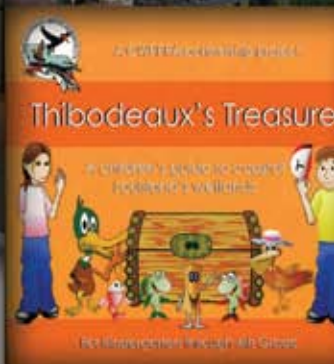


Reproduction assistance provided by the Louisiana Coastal Wetlands
Conservation and Restoration Trust Fund
www.LaCoast.gov



Working To Save Our
Coastal
Wetlands

Louisiana Department of Natural Resources
Office of Coastal Restoration and Management



Turning
the
Tide



The fight to keep
coastal Louisiana
on the map

www.LaCoast.gov



www.lacoast.gov

June 2008
Number 37

WaterMarks is published three times 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 restoration and enhancement projects nationwide, designating approximately \$60 million annually for work in Louisiana. The state contributes 15 percent of total project costs.

WaterMarks Editor

Gordon Newton

3737 Government Street

Alexandria, LA 71302

(318) 473-7739

Gordon.Newton@la.usda.gov

ABOUT THIS ISSUE'S COVER . . .

Materials produced by CWPPRA outreach and partnering organizations enhance wetland education, building support for coastal restoration and inspiring action. Photo credits: far left, Envirothon, NRCS; left, student Allan Aguilard, founder of Louisiana Wetlands in Peril, *HHitter*; right, protective wetlands display, *HHitter*; far right, top, NRCS-BTNEP planting excursion, NRCS; middle, planting seeds for Coastal Roots, *BGuillot*; bottom, Wetland Watchers staff booth at festival, *BGuillot*.

 **WATER MARKS**
Louisiana Coastal Wetlands Planning, Protection and Restoration News

June 2008 Number 37

CONTENTS

3 Hope for the Coast Hinges on Awareness, Action

5 Environmental Education Takes Students, Teachers on Marsh Adventures

9 Public Education and Outreach Build Support for Coastal Restoration



12
Education and Outreach Partners



14
WATERMARKS INTERVIEW
with Val Marmillion

For more information about Louisiana's coastal wetlands and the efforts planned and under way to ensure their survival, check out these sites on the World Wide Web:

www.lacoast.gov
www.btnep.org
www.lca.gov

www.dnr.state.la.us/crm
www.crcl.org
www.louisianacoastalplanning.org

Subscribe

To receive *WaterMarks*, e-mail lacoast@condor.nwrc.gov

Moving? The post office will not forward *WaterMarks*. To continue delivery, send your change of address to lacoast@condor.nwrc.gov

For current meetings, events, and other news concerning Louisiana's coastal wetlands, subscribe to the Breaux Act Newsflash, our e-mail newsletter, at

www.lacoast.gov/newsletter.htm



Recognizing that vanishing wetlands threatened not only the communities and culture of southern Louisiana but also vital national industries, Congress passed the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) in 1990. Also known as the Breaux Act, the legislation has contributed funds for over 170 projects undertaken by five federal agencies in partnership with the state of Louisiana.

CIVIC SOLDIER BATTLES FOR THE WETLANDS

Hope for the Coast Hinges on Awareness, Action

As a young lawyer King Milling wasn't all that interested in environmental issues. Sure, he noticed some dying vegetation, some ponding in the marshes when he went out duck hunting. Occasionally clients in the oil and gas industry mentioned problems with eroding canals and exposed pipelines, but Milling, like most Louisianans, didn't realize there was cause for much concern. Yet he had friends who insisted that disaster loomed in Louisiana's wetlands.

One day Milling listened impatiently as a friend spoke about "square miles of land loss." It wasn't news, the phrase was familiar, but that day Milling, who had become

president of New Orleans-based Whitney National Bank, heard "land loss" and thought, "falling real estate values." He heard "shrinking shrimp habitat" and thought "demise of Louisiana's fishing industry." He heard "conversion to open water" and thought "waves eroding the foundations of bridges and buildings." Milling had read the facts and seen the evidence, but at this moment, for the first time, he recognized that he himself had a role in the story: stakeholder in Louisiana's future.

Milling has served as citizen advocate for Louisiana's coast under three administrations of state government. He has engaged numerous strategies to foster solutions

for Louisiana, from speaking at public meetings to advising elected officials to instigating the creation and serving as chairman of America's WETLAND Foundation. Presently Milling chairs the governor's Advisory Commission on Coastal Protection and Restoration and is a member of Louisiana's Coastal Protection and Restoration Authority, established following hurricanes Katrina and Rita and mandated to develop a master plan for protecting and restoring southern Louisiana. "CWPPRA is designed to build individual projects that address single issues," says Milling. "Through CWPPRA we have learned a lot about coastal engineering and restoration. Now it's

time we put all the pieces together in a comprehensive, ecosystem-wide plan.”

Milling is convinced that re-establishing the coastline and its inherent protection is absolutely critical not just for Louisiana but for the entire United States. “Preserving the deltaic system of the Mississippi River is essential to industries vital to the nation — fishing, navigation, oil and gas,” says Milling. And he realizes that to accomplish such preservation, people outside of Louisiana — people all over the country, all over the globe — need to learn how they, too, are stakeholders in Louisiana’s wetlands.

Coastal restoration is progressing in large measure because of actions that Milling and scores of other dedicated citizens, scientists, engineers and politi-

cians have undertaken. And — just as vital to addressing Louisiana’s coastal crisis as blueprints and breakwaters — outreach and education are spreading awareness, cultivating interest, inspiring action and developing public support. From nationally publicized initiatives like the America’s WETLAND campaign to high school students’ cleanup of a local marsh, from university programs training teachers in wetland curricula to interpretive presentations for tourists at parks and museums, outreach and education teach an increasing number of people all over America how they are stakeholders in Louisiana’s future. This issue of *WaterMarks* presents a sampling of stories from wetland stewards engaged in this work, work critical to securing the future of Louisiana’s coast.

WM

“If a picture’s worth 1,000 words, a flight over the coast is worth 1,000 pictures,” says Kirk Rhinehart of the Louisiana Department of Natural Resources (LDNR). As administrator of the Coastal Restoration Division in LDNR’s Office of Coastal Restoration and Management, Rhinehart has taken Congressional delegations, government agency officials, research scientists, foreign dignitaries and numerous others on tours to educate them about Louisiana’s land loss crisis. “People unfamiliar with the coast have difficulty grasping the vastness of our wetland system and the huge amount of activity that takes place in it,” he says. “When they’re exposed to that environment, on the ground or up in the air, the deterioration is evident and they immediately understand our plight.”



LDNR

A Sudanese delegation returns from a trip into the south Louisiana marshes. Visitors frequently include international scientists, policymakers and media professionals who want to see the condition of Louisiana’s coast firsthand. Wetland specialists and CWPPRA project managers enrich visitors’ experiences by leading discussions about the science and engineering of coastal restoration.

Buras, LDNR



Frequently Wetland Watchers and CWPPRA representatives staff neighboring booths at fairs and festivals. Taking advantage of the audience that students naturally attract, CWPPRA outreach workers use games to teach kids about wetland wonders and give away educational materials that explain the national importance of Louisiana's coastal ecology, economy and culture.

WETLAND LESSONS IN SCIENCE AND CIVICS

Environmental Education Takes Students, Teachers on Marsh Adventures

Can middle school kids make history — and have fun doing it? For the answer, check out the entry on Wetland Watchers in Louisiana's eighth grade history textbook, then check on the fun students are having in — and out of — Barry Guillot's classroom at Hurst Middle School.

Guillot started Wetland Watchers as a service-learning program a decade ago. Observing students' enthusiasm during a field trip sponsored by the Lake Pontchartrain Basin Foundation, Guillot recognized that nearby Bayou LaBranche was an ideal laboratory for both scientific study and community service.

The bayou's complex ecosystem readily enables hands-on science lessons: Students test water quality, capture and identify marine organisms and chart observations recorded during outings. Wetland Watchers easily fulfills the educational component of a service-learning project, but Guillot pumps up the learning potential by calling on the program's

35 partners — among them schools, including Louisiana State University (LSU) and the University of New Orleans; agencies and organizations such as Louisiana Department of Natural Resources and Lake Pontchartrain Basin Foundation; and private corporations like Dow and Motiva — for specialists to share their expertise with his class.

Undaunted by the prospect of getting wet and dirty in the course of their lessons, Guillot's Wetland Watchers are eager to apply their knowledge and practice their skills in real-life situations. Some service activities

involve the wetland environment directly, such as planting trees, conducting clean-up campaigns or growing seedlings for wetland restoration through LSU's Coastal Roots program.

Other outreach activities extend awareness of wetland issues into the community; students have served as informal experts at fairs and festivals, secured donated trees for restoration, recorded spots for Radio Disney and mentored younger students on trips to the bayou. "The first time we staffed an information booth, we had 120 volunteers for 28 spaces," Guillot says. "Students have that kind of enthusiasm for sharing what they've learned."

Summer camp leads to future path

Can crawling through mud with a shovel in your hand be a life-changing experience? Just ask Gary Decossas. While planting marsh grass on an eroding shoreline as a participant in the 4-H camp Marsh Maneuvers, Gary decided to focus his future on wetland conservation.

"Marsh Maneuvers exposed me to the scope and complexity of wetland issues," says Decossas, now a senior at Chalmette High School in St. Bernard Parish, Louisiana. "Going out into the marshes, I saw firsthand how humans influence Louisiana's environment." As a consequence, Decossas will pursue a major

in coastal environmental science when he enrolls in Louisiana State University next September.

But Decossas is not waiting to contribute to Louisiana's environment. After Marsh Maneuvers he committed 900 hours to volunteer service as a part-time member of America's WETLAND Conservation Corps. His activities included securing plants to grow for restoration projects in a newly built school greenhouse and helping to found a club for horticulture and the coastal environment. "The club will let us students play a bigger role in restoring St. Bernard Parish's vanishing wetlands," says Decossas.

Administered by Louisiana State University Agricultural Center, Marsh Maneuvers receives grants from diverse sources such as BTNEP, the Louisiana Department of Natural Resources and private coastal businesses and landowners. CWPPRA materials enrich the program's lessons. From scientists sharing their expertise on chenier soils to parents chaperoning the late-night alligator hike, a coalition of supporters creates a week of lasting influence in the marshes for Louisiana's 4-H youth.



Director Mark Shirley says that over Marsh Maneuvers' 20-year history, the experiential learning program has motivated many high school students across the state to pursue environmental studies and careers in science. "The goals of Marsh Maneuvers are to increase participants' appreciation of the coast's role in their lives and to inspire them to become part of future solutions for flood protection and coastal restoration," says Shirley. "Kids have fun while learning about the scientific aspects of the coast. They go back home eager to share their experiences, expanding the program's impact among their peers and in their communities."

Learning, returning, teaching

Can a week of risking sunburn and swatting mosquitoes build a passion for coastal restoration? For WETSHOP participants, the answer is a resounding yes!

The program is sponsored by the Louisiana Department of Wildlife and Fisheries (LDWF), with support from other agencies and funding assistance from the Barataria-Terrebonne National Estuary Program (BTNEP). "Each summer we take 20 classroom teachers and informal educators to the Barataria-Terrebonne estuary," explains Angela Capello, LDWF's aquatic



PIES brings together experts in the environmental sciences, the social sciences, environmental and civil engineering and environmental management to develop practical solutions to problems facing coastal ecosystems across the globe. PIES' education program uses CWPPRA's CDs, maps, posters and publications to explain key concepts related to coastal wetland issues. "In our teacher education we frequently recommend CWPPRA's Web site as the most useful for understanding the coastal restoration process," says Dinah Maygarden, education director of PIES' Coastal Wetlands Education Program.

education state coordinator. "There they observe coastal land loss firsthand and learn why the stakes are so high."

The week is packed with tours, field activities and presentations from experts — often including CWPPRA's outreach and education coordinator — in wetland ecology and coastal restoration. WETSHOP participants see how barrier islands form a first line of defense against storms and learn to identify plants that hold fragile soils together. They travel from freshwater into saltwater marshes, testing water quality and observing changing flora along the way. A fisheries management biologist discusses the seafood and sport fish that

will vanish if Louisiana's wetlands disappear. A tour of Port Fourchon, the major service base for oil and gas extraction in the Gulf of Mexico, demonstrates Louisiana's importance to the nation's energy supply.

"Frequently people outside of southeast Louisiana don't understand the crisis we face," says science teacher and WETSHOP volunteer Kathleen Nichols. "WETSHOP participants return home and educate others about our coastal problems and their solutions. Our enthusiasm is often contagious — after I became involved in wetland issues, several of my students enrolled in summer programs to learn more."

Wetland lessons inspire all levels of learners

Can a single program conduct field trips and summer programs that inspire students to pursue careers in science, provide information and resources that assist teachers in developing curricula on wetland topics and collaborate with other organizations to develop science-based outreach material? It can if it has the vision of the Coastal Wetlands Education Program of the Pontchartrain Institute for Environmental Sciences (PIES).

Each year 800–1,000 students in fifth through 12th grades participate in the program's field trips. "For each trip a specific topic is selected on which to build a knowledge base," says Dinah Maygarden, the educa-

tion program's director. "For instance, the topic could be saltwater intrusion. The science lesson might focus on how to test for salinity. As students canoe down the bayou, they would match their observations of flora and fauna with changes they measure in saline levels."

Two-week-long summer programs immerse high school students in the world of coastal wetland science. Maygarden cites the number of applicants, including students who return as mentors, as one indication of the program's success. Another is feedback from former participants now pursuing science degrees in college. "They report feeling like they have a very solid foundation for advanced work," Maygarden says.

For schoolteachers, the education program's workshops help integrate coastal wetland issues into classroom science curricula. In addition, the program takes technical materials developed by PIES' scientists, such as maps tracking coastal land loss, and translates them into attractive and easy-to-use educational products. "An example is a series of posters we developed in coordination with the Barataria-Terrebonne National Estuary Program (BTNEP)," says Maygarden. "The posters illustrate how implementing a restoration project increased land mass on an eroding barrier island."

Such partnerships are not unusual — indeed, the very existence of the PIES program relies on partners like BTNEP and Lake Pontchartrain Basin Foundation for funding. In turn, the program is educating an increasing number of Louisianans about coastal issues and raising public support for coastal restoration. **WM**

In workshops such as those conducted by PIES, WETSHOP and COSEE, past issues of *WaterMarks* may serve as informal textbooks. "I understood the process of marsh creation after reading about sediment transfer in *WaterMarks*," says Sharon Nabours, a 2007 WETSHOP participant. "Now I include the publication in materials I distribute through America's WETLAND Conservation Corps."



H-litter, CWPPRA Outreach Committee

LOUISIANA'S COAST, EVERYONE'S STORY

Public Education and Outreach Build Support for Coastal Restoration

For years Louisiana's land loss was a problem nearly invisible even to those who lived in the region. As evidence of the crisis mounted, the urgency to inform people of its scope increased. Today it is widely accepted that successfully implementing policies to protect and restore Louisiana's coast depends on broad public support. The following stories profile activities that develop awareness, generate support and engage people in pursuit of solutions.

Exhibits bring coastal issues to public notice

At a New Orleans boat show, fishing and boating enthusiasts crowd the CWPPRA booth to learn how Breaux Act partners rebuild marsh and restore fish habitat.

Children at the Black Bear Festival in Franklin, Louisiana, make paper-bag puppets as they and their parents hear how CWPPRA agencies restore and protect the endangered creature's habitat.

Each year at conferences, expositions, schools, meetings and festivals, CWPPRA

representatives talk to more than 100,000 Louisianans and tourists about the values and functions of Louisiana's wetlands — and the ongoing battle to save them.

“We make presentations and display exhibits for everyone, from a few dozen garden club members to thousands at a boat show,” says Heidi Hitter, education and outreach coordinator for CWPPRA. At these events, CWPPRA representatives like Hitter provide printed materials, interactive CD-ROMs and activities to inform the public about Louisiana's land loss crisis and the

restoration efforts that offer a solid basis for hope.

“When we interact with the public we find that most people are aware of Louisiana's coastal land loss, but they're surprised to learn how complex and critical the problem really is,” says Hitter. “They're amazed when we explain the importance of the coast and how losing

Awareness leads to action for scores of Louisianans who help build brush fences out of discarded Christmas trees. While shielding shorelines from erosive waves, the community projects offer citizens a chance to contribute directly to coastal restoration and leverage the resulting publicity to draw attention to Louisiana's land loss crisis.





PIES

it would affect their daily lives, no matter where in the country they live.”

Paths to understanding the coastal ecosystem

At the Barataria Preserve in Marrero, one of the six sites that comprise the Jean Lafitte National Historical Park and Preserve, visitors from around the world return from a nature walk “wide-eyed and buzzing with excitement,” says Angela Rathle, a ranger with the National Park Service.

“Barataria Preserve is our premier site for talking about wetlands and coastal issues,” Rathle says. “Here visitors can walk a nature trail that takes them through three distinct habitats — hardwood forest, swamp and marsh. The variety and abundance of life they see amaze them. They return to our visitor center full of questions and curious about wetland issues.”

At the visitor center, publications and an exhibit incorpo-

rating facts found in CWPPRA maps and materials explain how wetlands function and what role they play in Louisiana’s culture and economy. Guests talk one-on-one with park rangers about land loss and restoration. “Rangers also lead daily walks,” Rathle says, “giving us the chance to point out changes in the environment and talk about restoration projects completed at the preserve.”

Wetland lessons on the water

Much of the natural wonder of Louisiana’s coastal ecosystems isn’t accessible by highway or walking trail — it takes a boat to reach the wildest corners of the state’s wetlands.

A partnership between local tour operators and BTNEP enhances the educational aspect of boat trips into Louisiana’s swamps and marshes. Tour guides attend a day-long workshop with BTNEP staff, exchanging notes about the sites they explore and problems facing the en-

On the water or in the field, directly experiencing conditions in Louisiana’s wetlands wins advocates for coastal restoration. Numerous programs sponsored by nonprofit organizations, educational institutions and government agencies provide opportunities for all ages and all levels of scientific involvement to learn about Louisiana’s coastal ecology.

tire estuary. CWPPRA fact sheets inform them about coastal restoration projects built in the areas they visit. As tour boats meander through marsh and swamp, guides talk not only about the diverse plants, birds and wildlife they encounter, but also about efforts underway to protect the vanishing estuarine ecosystem.

Trees quell waves long after the garlands are gone

There are numerous ways to support coastal restoration without getting wet or muddy, but many Louisianans are eager to get involved in hands-on projects. For them, a great opportunity comes right after Christmas.

Each year thousands of Louisiana households use their discarded Christmas trees to build brush fences in coastal waters. When secured in simple structures, the trees trap sediment and slow erosive waves, enhancing the growth of aquatic vegetation and stimulating the formation of new marsh. Tree branches provide habitat for fish, birds and animals.

The Christmas tree program, which the CWPPRA outreach committee promotes through postings on the

Breaux Act Newsflash and the Louisiana Wetland Educators Coalition (LaWEC) Web site, is administered by participating parishes and the Louisiana Department of Natural Resources (LDNR) Coastal Engineering Division. Over the program's 17-year history, local citizens have recycled over a million and a half trees, building fences in shallow bodies of open water, in abandoned oil field canals, in front of shorelines and along the Gulf Intracoastal Waterway.

"The program also benefits coastal restoration by increasing public awareness of Louisiana's environmental problems," says Keith Lovell, a coastal resources scientist with LDNR. "People from New York to California have asked our advice about constructing brush fences. It's an example of Louisiana sharing what we know and what we're learning about how to conserve and protect our wetlands."

Hunting for wetland protection

To the usual mix of scientists and engineers essential to the success of CWPPRA projects, add another group of specialists: nutria hunters.

"We estimate that presently nutria put over 34,000 acres of wetlands at risk," says Edmond Mouton, a biologist program manager for

the Louisiana Department of Wildlife and Fisheries (LDWF). "These voracious, exotic rodents feed on plant stems, roots and rhizomes and expose fragile marsh soils to erosion. If overgrazed areas cannot recover swiftly, they convert to open water."

Their populations once held in check by a profitable fur market, nutria have proliferated in the past few decades. In 2002 CWPPRA, in partnership with the Natural Resources Conservation Service and Louisiana Department of Natural Resources, encouraged hunters to reduce nutria numbers by establishing the Coastwide Nutria Control Program, which pays for each nutria tail delivered to its collection centers. Since the program was introduced, the estimated acreage vulnerable to nutria has been cut by more than half.

For hunters, the program may be just another chapter in Louisiana's long sporting tradition, but for managers at the 11 CWPPRA project sites reporting nutria activity, it is a means of engaging the public in crucial coastal protection. "Damage from nutria is ongoing," says Mouton. "Hunters play a critical role in controlling this invasive species' threat to our ecosystem's stability." **WM**

Wetlands on the Web

LaCoast
www.lacoast.gov

Visitors to the Breaux Act's home on the Web can read news on coastal restoration, check out a calendar of public meetings and wetlands-themed events, look up details of CWPPRA projects and download multimedia resources. Educators both formal and informal may explore links to materials ranging from coloring books to CD-ROMs and teachers' guides.

Breaux Act Newsflash
www.lacoast.gov/news/newsletter.htm

Delivered via e-mail to more than 2,000 citizens, policymakers, educators, sportsmen and government agency employees, the Breaux Act Newsflash relays information about CWPPRA, meetings regarding wetland issues and projects, educational programs and volunteer and field trip opportunities. Subscribers may circulate notice of events related to coastal issues by submitting them to the Newsflash.

Louisiana Department of Natural Resources Web site
<http://dnr.louisiana.gov/>

To keep citizens informed about efforts to save Louisiana's wetlands, the Louisiana Department of Natural Resources' Web site provides numerous resources. The site's SONRIS interactive GIS tool allows the public to explore and download interactive maps and aerial and satellite photos; find the locations of CWPPRA projects; and obtain data on hydrography, soil properties, land elevation, marsh vegetation and other aspects of the state's coastal zone. The site also provides access to planning documents, public notices and other downloadable publications. A page for teachers, students and kids focuses on the economic, cultural and environmental value of Louisiana's coastal zone.

Education and Outreach Partners

Barataria-Terrebonne National Estuary Program (BTNEP)
www.BTNEP.org

Dedicated to preserving and restoring the wetland ecosystems lying between the Atchafalaya and Mississippi rivers, BTNEP partners with agencies and other stakeholders to provide free, science-based training and classroom materials — lesson plans, posters, videos, DVDs and interactive CDs — that incorporate up-to-date science on wetland ecosystems and coastal restoration. BTNEP workshops include the upcoming “Spirit of the Estuary – Using Art to Understand Ecology,” WETMAAP trainings and intensive, day-long workshops and ongoing workshops for kindergarten through fourth-grade teachers.

Centers for Ocean Sciences Education Excellence—Central Gulf of Mexico (COSEE-CGOM)
<http://cosee-central-gom.org>
Jessica.kastler@usm.edu
(928) 872-4269

Each year a dozen middle school teachers enrolled in COSEE, a National Science Foundation-funded program, trek into Louisiana’s wetlands to learn about coastal ecosystems and discover how research scientists operate in the field. In the fall 40 educators attend COSEE workshops that present classroom materials developed around such themes as habitat and physical processes in the environment.

Gulf of Mexico Alliance Environmental Education Network (GOMAEEN)
www.disl.org/mailman/listinfo/gomaeen

Environmental educators subscribing to GOMAEEN’s e-mail list receive daily news and updates on workshops, conferences, educational

materials, grants, jobs, policy changes and more from across the gulf coast. A companion clearinghouse (www.neii.gov/gomaeen) offers a searchable online library of environmental information.

Lake Pontchartrain Basin Foundation (LPBF)
www.saveourlake.org
joann@saveourlake.org
(504) 836-9238

Each year LPBF teaches thousands of Louisiana residents about conservation and coastal issues, offering on-site presentations on watershed and coastal topics for schoolchildren, garden clubs, civic associations and other groups. Its Web site offers a free curriculum guide and other educational planning resources. Through LPBF’s Water Watch field program, teachers and students conduct year-long, hands-on studies of water quality in the New Orleans area.

Louisiana Envirothon
www.deq.louisiana.gov/envirothon
www.lacoast.gov/education/lawec

Each spring teams of Louisiana middle and high school students compete in Envirothon, a problem-solving contest involving land navigation, botany, biology and other disciplines. Teams learn to differentiate between invasive and native species, study “green” building and identify macroinvertebrates. Each team also examines human impacts on a parcel of land and proposes remedial strategies.

Louisiana Sea Grant
www.laseagrant.org

Based at Louisiana State University, Sea Grant is a partnership of 16 colleges and universities across the state that offers education, research and outreach programs to educate

citizens of all ages about cultural, environmental and economic values of Louisiana’s wetlands and about the challenges facing marine and coastal ecosystems.

Louisiana Sea Grant programs
Louisiana Marine Education Resources (LaMER)
www.lamer.lsu.edu

For K–12 teachers and informal educators, LaMER offers workshops, science-based classroom materials and resources for teaching about marine, aquatic and wetland ecosystems.

Marsh Maneuvers
www.lamer.lsu.edu/projects/marsh_man/index.htm

Each July high school students from Louisiana 4-H clubs spend four days in the marshes to learn about wetland ecology, hydrology and ecosystems. Additionally they study the marshes’ cultural and economic importance and policy issues surrounding the wetlands’ use and preservation.

Ocean Commotion
www.lamer.lsu.edu/projects/oceancommotion/index.htm

Some 3,000 kindergarten through eighth-grade students attend this annual event presenting interactive exhibits about Louisiana’s coastal environments and the need to protect coastal resources.

Scope-on-a-Rope (SOAR)
www.scopeonarope.lsu.edu

SOAR teaches K–12 science teachers to operate miniature magnifying video cameras, examining various material, from particles that make up barrier island sand to life forms found in a drop of pond water. The program provides lesson plans and equipment for classroom use.



Louisiana Department of Wildlife and Fisheries (LDWF)
www.wlf.state.la.us/education

LDWF offers a variety of programs teaching children and adults about fish and wildlife. Through FUN Camp (Families Understanding Nature) and Becoming an Outdoors-Woman, participants learn skills like fishing, camping, canoeing and shooting. For teachers and informal educators, WETSHOP, a one-week wetland immersion program, provides hands-on experiences and classroom curricula. Activity guides and other materials are available for K–12 classrooms.

Louisiana Wetland Education Coalition (LaWEC)
www.lacoast.gov/education/lawec

LaWEC furthers knowledge and understanding of Louisiana's wetlands by providing educational resources to teachers, wetland materials to the public, and interagency communication about projects and resources to members.

Pontchartrain Institute for Environmental Sciences (PIES)
www.pi.uno.edu

Providing opportunities to study and explore Louisiana's wetlands, PIES teaches students and educators about the issues facing the state's coastal ecosystems. PIES offers workshops for educators, summer programs for middle and high school students, and field trips during the school year.

Project Learning Tree
www.laplt.org

An award-winning, multidisciplinary program, Project Learning Tree teaches critical thinking and problem solving skills as students from pre-kindergarten through high school use science, math, language arts and other subjects to learn about local, regional and global environmental issues.

Project Webfoot
www.ducks.org/projectWebfoot
joey_b@ldaf.state.la.us

Through Ducks Unlimited's Project Webfoot, elementary and middle school students discover the functions and values of wetland ecosystems. At free workshops, teachers learn to use the program and receive materials that incorporate science, math, language and visual arts into wetland studies.

Project WET (Water Education for Teachers)
www.projectwet.org
joey_b@ldaf.state.la.us

Award-winning Project WET offers intensive workshops that train K–12 teachers and informal educators to incorporate hands-on lessons about water quality, wetlands, watersheds and water resource conservation in classroom and outreach programs. Workshop participants receive WET's curriculum guide with 90 water-related classroom activities.

Project WILD
www.projectwild.org

A conservation education program used in schools across the U.S. and in seven foreign countries, Project WILD leverages kids' natural curiosity about nature and the environment to teach science, social studies, literature, math, geography and history. State wildlife and educational agencies conduct teacher workshops illustrating the characteristics and importance of wildlife habitat. WILD's curricula, materials and demonstrations all meet state educational standards.

U.S. Fish and Wildlife Service
www.fws.gov/educators

Through its Web site, the U.S. Fish and Wildlife Service provides an on-line library, classroom materials, photos, maps, and links to conservation groups for educators and students.

Wetland Education Through Maps And Aerial Photography (WETMAAP)
www.wetmaap.org
Larry_Handley@usgs.gov

This national program's short courses, workshops and Web site teach educators about the functions and values of wetlands and how to integrate environmental and earth science into curricula. Maps, aerial photography, satellite imagery and introduction to geographic information systems technology promote understanding of environmental issues, including land loss and the causes and consequences of wetland change. The Louisiana WETMAAP curriculum is funded in large part by BTNEP and PIES.



WATER MARKS INTERVIEW WITH VAL MARMILLION

A Louisiana native, Mr. Marmillion is the managing director of America's WETLAND Foundation. The foundation increases public awareness of Louisiana's wetland loss and understanding of its implications for the state, nation and world.

WaterMarks: Isn't coastal restoration a matter of science and engineering? Why should effort be spent on education and outreach?

Marmillion: The problem facing Louisiana's coast is so huge its solution will require expenditures of public money. Public awareness of this tragedy happening on American soil is very necessary to develop support for both state and federal funding of coastal protection and restoration. Without public support there is no money.

WaterMarks: Why should Louisiana's coastal crisis be a national issue?

Marmillion: The Mississippi River delta system is central to 31 states, but ecology knows no boundaries. If any part of the river is unhealthy, it affects the entire system — everything from navigation and maritime concerns, seafood production and energy development to communities in the wetlands — all of these things are national assets.

WaterMarks: How has America's WETLAND Foundation developed awareness of Louisiana's situation?

Marmillion: The foundation launched a media campaign

to make America's WETLAND a name familiar to people throughout the country. We used hundreds of strategies and tactics and normal marketing tools — advertising, billboards, public service announcements and such. We've attracted media attention by sponsoring events that demonstrate why wetlands are important. In conjunction with leading educational groups, we've introduced wetland studies into curricula nationwide, bringing awareness to the student population. Almost 200 cooperating organizations attend our summits and special events and incorporate our information into their own programs.

Through the years America's WETLAND and CWPPRA have enjoyed a complementary relationship. The foundation has used its research capability and its expertise in public outreach to help educate people about CWPPRA's projects and achievements.

WaterMarks: How do you measure the success of your efforts?

Marmillion: There are a number of ways. Polling shows we've consistently increased recognition of our name. We track how often we're mentioned in print, electronic and broadcast



media. We list the products we inspire — the special sections in magazines, the public television shows, the documentaries.

I'd say our greatest achievement has been helping to create the environment in which Louisiana adopted a comprehensive state master plan for coastal protection and restoration. This plan spells out the future for the region. Concurrently, passage of the Outer Continental Shelf revenue-sharing bill provides a critical source of money to implement the plan. These pieces of legislation would not have been passed without strong public support.

WaterMarks: America's WETLAND has many partners and sponsors. What is their role?

Marmillion: I believe the foundation's strongest feature is bringing together diverse interests to build partnerships. For example, the leaders of Shell oil company and Environmental Defense stood together with us when we launched America's WETLAND Campaign. Private companies sponsor the foundation and provide funding for our

campaigns and major initiatives, while a number of conservation and environmental organizations are cooperating partners. Other organizations, such as Women of the Storm and Coast Guardians, were created in association with the foundation to involve specific stakeholder groups. And some partners, like the America's WETLAND Conservation Corps, grew out of the foundation's initiatives.

The Corps demonstrates how we can leverage our partnerships. This program involves kids doing wetland restoration and repair out in the field. One of our sponsors, the Tabasco Company, generated funding for the Corps by attaching coupons to bottles of their sauce. Two dollar, five dollar donations have come in from thousands of individuals around the world.

We also went to Americorps for support. Their funding enables another of our partners, the LSU Ag Center, to manage the teams and schedule plantings.

WaterMarks: What lies ahead for the foundation?

Marmillion: The next phase of our campaign is reaching out to other deltas across the globe. In Louisiana we know that we have a very serious problem

Armed with shovels and saplings, volunteers fight to reclaim Louisiana's land from the reach of water. "Every person, every plant, every particle of soil is essential to winning the battle against land loss," says Susan Testroet-Bergeron, education coordinator for BTNEP. She should know: Testroet-Bergeron has been active in public outreach and wetland education since the early days of CWPPRA. "It's the efforts of dedicated people like Susan," says Honora Buras, herself involved in outreach as a coastal resources scientist at LDNR, "that give us hope for the future of our coast."

on our hands, but we also know that how we solve our problem could serve as a model for delta systems worldwide.

Building levees along the Mississippi River had tragic consequences in our wetlands. From that we learned that whatever you build in the wetlands, you have to build in concert with natural systems. It's a lesson to share with other deltas before they suffer the destruction we've experienced.

Another model that Louisiana offers is its civic process of bringing citizens and stakeholders together in political discourse. The result is the state's adoption of a unique, comprehensive plan for coastal restoration and protection. Approval of the plan would never have been possible without strong public support, rooted in public awareness of the urgency of Louisiana's coastal crisis. **WM**



H.Hitter, USGS

America's WETLAND has employed multiple diverse, award-winning strategies to expand public awareness of Louisiana's land loss crisis. Cartoon characters, puppets and entertainment stars join businessmen, scientists and educators in speaking for the wetlands, enrolling people across the country in the campaign to save coastal Louisiana.



BGuillot, Wetland Watchers



VISITORS EXPLORE COASTAL CULTURE, ECOLOGY AT SOUTH LOUISIANA SITES

Learning About Louisiana's Wetlands

State Refuges, Wildlife Management Areas and Outdoor Education Centers

Managed by the Louisiana Department of Wildlife and Fisheries
www.wlf.louisiana.gov/experience

- 1 Marsh Island Wildlife Refuge
- 2 Rockefeller Wildlife Refuge
- 3 St. Tammany Wildlife Refuge
- 4 Terrebonne Barrier Islands Refuge
- 5 Atchafalaya Delta WMA
- 6 Attakapas WMA
- 7 Barataria Preserve
- 8 Biloxi WMA
- 9 Bonnet Carre Spillway

- 10 Indian Bayou Area
- 11 Joyce WMA
- 12 Lake Boeuf WMA
- 13 Lake Ramsey Savannah WMA
- 14 Manchac WMA
- 15 Maurepas Swamp WMA
- 16 Pass-a-Loutre WMA
- 17 Pearl River WMA
- 18 Pointe-aux-Chenes WMA
- 19 Sabine Island WMA
- 20 Salvador/Timken WMA
- 21 Sherburne/Atchafalaya NWR/Bayou des Ourses
- 22 Wisner WMA
- 23 Waddill Outdoor Education Center
- 24 White Lake Wetlands Conservation Area

Museums

- 25 Children's Museum of Acadiana
www.childrensmuseumofacadiana.com
- 26 Louisiana Arts and Science Museum
www.lasm.org

National Park

- 27 Jean Lafitte National Historical Park and Preserve
 Managed by the National Park Service
www.nps.gov/jela

National Wildlife Refuges

Managed by the U.S. Fish and Wildlife Service
www.fws.gov/southeast/maps/la.html

- 28 Bayou Sauvage NWR
- 29 Bayou Teche NWR
- 30 Big Branch Marsh NWR
- 31 Cameron Prairie NWR
- 32 Lacassine NWR
- 33 Mandalay NWR
- 34 Sabine NWR

State Parks and Preserves

Managed by the Louisiana Department of Culture, Recreation and Tourism
www.crt.state.la.us/parks

- 35 Bayou Segnette State Park
- 36 Cypremort Point State Park
- 37 Fairview-Riverside State Park
- 38 Fontainebleau State Park
- 39 Grand Isle State Park
- 40 Lake Fausse Pointe State Park
- 41 Sam Houston Jones State Park
- 42 St. Bernard State Park
- 43 Tickfaw State Park

WATER MARKS

Louisiana Coastal Wetlands Planning, Protection and Restoration News

June 2008 Number 37

DEPARTMENT OF THE ARMY
 NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
 P.O. BOX 60267
 NEW ORLEANS, LOUISIANA 70160-0267

OFFICIAL BUSINESS

First Class Mail
 Postage and Fees Paid
 U.S. Army Corps of Engineers
 New Orleans District
 Permit No. 80