

WATER MARKS

Louisiana Coastal Wetlands Planning, Protection and Restoration News

June 2006 Number 31



The Paradox of Plenty

Does Today's Bounty Herald Tomorrow's Collapse?

Sportsman's Paradise Under Siege

Breaux Act Projects Give Wetlands a Sporting Chance

WaterMarks Interview with Todd Masson

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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.



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ABOUT THIS ISSUE'S COVER . . .

Todd Masson, editor of *Louisiana Sportsman* and guest for this issue's *WaterMarks* interview, passes along Louisiana's sporting traditions to his children. He is pictured here fishing in the Delacroix area with his son Joel.

The photograph was taken by Andy Crawford.

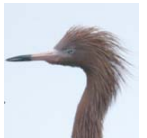
3 **Burgeoning Productivity Disguises Disaster in the Wetlands**



6 **Sportsman's Paradise Under Siege**



8 **Breaux Act Projects Give Wetlands a Sporting Chance**



11 **Sportsmen's Stake in Paradise**



14 **WaterMarks Interview with Todd Masson**



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www.btneq.org
www.lca.gov

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

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Wetlands' Decline Fuels Unsustainable Harvests

Burgeoning Productivity Disguises Disaster in the Wetlands

He's fished the waters of the Barataria Basin all his life, but in the past five years or so, says Eric Williamson, he just doesn't catch fish like he used to.

sportsman's paradise may soon be sharing Williamson's experience.

The fish aren't nearly as big or as plentiful as they've been in decades past.

"I'm not sure what's causing the decline," Williamson says, "although it's obvious that the habitat is changing. When I was a kid you could see solid marsh from the Leeville bridge to Grand Isle. Now,

30 years later, you look out at bits of broken marsh and a lot of open water. A change that dramatic has to affect the fish."

The Barataria Basin may be suffering the effects of land loss that scientists have been predicting. As wetlands continue to disappear, every hunter and fisherman in the

Boom Before Bust?

For decades the region's size has hidden the effects of Louisiana's coastal land loss from sportsmen's notice: If there were no longer any speckled trout here, there were still plenty of them — and maybe more — over there. Paradoxically, wetland disintegration enhances



Courtesy of Louisiana Office of Tourism

Of all the nicknames by which Louisiana is known — the Pelican State, the Bayou State, the Child of the Mississippi — the most popular throughout the years has been "The Sportsman's Paradise." Certainly to the state's nearly 300,000 annual visitors who come to hunt and fish, the phrase is richly descriptive. It is so apt a moniker that the 2003 Louisiana Legislature passed a bill directing its inclusion on the state's license plates.



marsh edge habitat. As the length of interface between land and water increases, populations of many species swell before the ecosystem collapses altogether.

Consider a healthy marsh one mile square. That marsh has four miles of edge habitat, where land and water intersect — prime territory for fish and reptiles, wading birds and waterfowl. Imagine a pipeline canal bisecting this square of marsh. Suddenly the amount of edge real estate is increased by two miles. With a 50 percent increase in edge habitat, marsh populations flourish.



Courtesy of Louisiana Office of Tourism

Dependent on marshes in its larval and juvenile stages, spotted sea trout is among the species that move into more open water as adults.

Numerous Fish Depend on Louisiana's Marshy Edges

Approximate distance from shore in meters	Fish Species
.6	Skilletfish
.9	Panfish
1.1	Tidewater silverside • Spot
1.2	Speckled worm eel • Bay anchovy • Naked goby
1.3	Clown Goby • Blackcheek tonguefish
1.4	Spotted sea trout
1.5	Silver perch • Darter goby
1.6	Red drum
1.8	Bay whiff
2.0	Gulf menhaden

Class size where a species' greatest concentration of individuals occurred:
 < 15 mm 15-30 mm 30-100 mm

The 15 species found in greatest abundance near marsh shorelines congregate within 2 meters from the edge. As they grow from larvae into juvenile fish, some species move into deeper water to find new food sources and escape predators. Approximate distance indicates where each species' most numerous class size occurred during the two-year study (from Baltz et al. Environmental Biology of Fishes, 1993).

But more edges — longer interfaces between land and water — cause more erosion. Water works its way among large chunks of the marsh and creates yet more edge that in turn supports larger marsh populations but causes yet more erosion, until the marsh becomes more water than land. Water bodies join together, edges vanish, habitat disappears, and the marsh-dependent fish and wildlife populations crash.

Species Move In and Out as Conditions Change

“When wetlands disappear, different fish move into the area,” says Harry Blanchet, a specialist in marine fisheries with the Louisiana Department of Wildlife and Fisheries (LDWF). “As a marsh converts to open

water, we lose the species that develop in the quiet lakes and tidal sloughs of a wetland — brown and white shrimp, blue crab, red drum, speckled trout. They are replaced by fish that live and grow in an open water column, such as anchovies, blue fish, lady fish and mackerel.”

“Ducks and geese are adaptable to a variety of marsh conditions,” says Larry Reynolds, waterfowl expert with LDWF. “They can thrive in freshwater or intermediate marshes, in wetlands with a land-water ratio of 10 to 90 percent. But the basis of the waterfowl food chain is marsh vegetation. As it washes away, the numbers of waterfowl that the Louisiana coast can support will plummet.”



Things Are Not Always as They Seem

The boom-before-bust model might lead to the expectation that hunting and fishing results improve in direct relationship to land loss, but records from the past five decades do not support such a correlation. Does this invalidate the theory? “No,” says Reynolds. “The information is not contradictory; it is our understanding of it that is incomplete.”

“There’s a lot of noise in the signal,” Blanchet says. “Naturally there are good years and bad years, with numerous factors influencing the fluctuation of wild populations. You might expect a deteriorating marsh to increase fisheries but see instead a decline due to an unusually long cold spell, or because storm damage to commercial

fleets translates into fewer reports of landings.”

The circumstances of speckled trout in 2006 exemplify the complex influences interacting in a coastal ecosystem. “Very dry conditions have increased salinity in the marshes,” Blanchet says. “Speckled trout are spawning further up the estuary where it is easier for eggs and post-larvae to reach the marsh ponds and tidal sloughs that are ideal for their growth. The result should be a short-term increase in the trout population. But in the long term, high salinity will destroy marshes that are normally fresh or of intermediate salinity. When the marsh disappears, the trout that depend on the marsh disappear too.”

Habitats Respond to Restoration

Habitats change not only when wetlands convert to open water, but also when restoration techniques succeed and build new land or reverse saltwater intrusion.

“In the short run, some restoration activities may degrade waterfowl habitat,” Reynolds says. “Consolidating areas of broken marsh can produce a higher land-to-water ratio than ducks favor. But in the long run, healthy, resilient wetlands are crucial to a flourishing waterfowl population.”

“Changing conditions affect the distribution of fish,” says Blanchet, “and the intent of wetland restoration is to change conditions. Rebuilding healthy marshes can be disruptive, costly and inconvenient, but it’s fundamental to sustaining the sportsman’s paradise.”

Few people welcome changes to a familiar marsh or a favorite fishing hole. In the past, objections of sportsmen and other stakeholders have sometimes succeeded in restricting or delaying restoration projects. But following the devastating hurricanes of 2005, many people are beginning to see the enormity of the problem facing coastal Louisiana and to understand that giving up the way things are today may be necessary if paradise is to have any future at all. **WM**

Courtesy of Louisiana Office of Tourism



As young fish increase in size, they become less vulnerable to other fish, but more so to birds. At this stage they tend to migrate from their shallow marsh-edge habitats to deeper water.

Hurricane Damage Offers Glimpse of Future Sportsman's Paradise Under Siege

Duck hunters crisscrossing the southwestern Louisiana wetlands in October 2005 found once-green grasses and dense submerged aquatic plants turned brown and withered.

Thrust inland by Hurricane Rita's storm surge, saltwater laid waste to thousands of acres of wetland vegetation. As a result, for the first several weeks of the season, marshes that had

fed and sheltered millions of waterfowl the previous year held far fewer birds. "Whether it's from storm surge or the gradual result of land loss, saltwater intrusion has the same effect: It kills freshwater



Courtesy of Ronald Peille

Courtesy of Dave and Karen Soileau, Jr.



Above: The world-renowned recreational fisheries of coastal Louisiana depend on the state's wetlands, which provide food, shelter and nursery habitat to popular game fish like red drum.

Right: Each fall and winter, duck hunters reap the benefits of Louisiana's location along the Mississippi Flyway, a major bird migration route connecting Canada and the Gulf of Mexico.

marsh vegetation, sending wildlife in search of better habitat," says Darryl Clark of the U.S. Fish and Wildlife Service. "Rita's damage was temporary, and by January the ducks had returned to southwest Louisiana. But wetland loss caused by prolonged saltwater intrusion takes much longer to repair." Clark says the 2005 hurricane season not only highlighted the importance of restoration to protect coastal communities, but for sportsmen, it also provided a sobering reminder of what will happen if we don't rebuild our wetlands.

Land Loss Threatens Louisiana Traditions

Dependent upon the unique ecosystems of the state's



Courtesy of Louisiana Office of Tourism

and ecotourism activities that comprise a traditional Louisiana way of life.” The annual economic impact of hunting, fishing, bird watching and other outdoor activities in Louisiana totals more than \$7 billion, including \$700 million spent by tourists.

“Even beyond the dollars they bring to the state,” says Clark, “the wetlands have value and meaning. What price tag do you put on seeing a bald eagle, or watching a great egret in breeding plumage on a nest with chicks? If we lose the wetlands, we lose those experiences and our sporting traditions forever.” **WM**

wetlands, hunting, fishing and other outdoor activities have long been integral to Louisiana’s culture.

“Families have fished and hunted our wetlands for generations, forging traditions that are the foundation of our culture,” says Secretary Angele Davis of the Louisiana Department

of Culture, Recreation and Tourism. “Each year, thousands of visitors come to our state to experience that culture — through our cuisine, for example, or by participating in sporting



Courtesy of Louisiana Office of Tourism



Courtesy of Louisiana Office of Tourism

Above left: As migrating birds complete their springtime journey north across the Gulf of Mexico, they find food, fresh water and resting perches in Louisiana’s wetlands. Seizing the opportunity to view birds that have come from as far away as the southernmost tip of South America, birdwatchers take to the America’s Wetland Birding Trail, which features 115 sites across Louisiana’s coastal zone.

Left: Louisiana’s world-famous cuisine owes much to the state’s wetlands; generations of Louisianans have harvested the coast and marshes for crawfish, shrimp and fish — signature ingredients in Cajun and Creole cooking.

Above: Land loss threatens the wetland habitats of hundreds of species of birds, from natives like the great egret to migrating ducks, geese and songbirds.

Restoration Enhances Habitat for Fish and Fowl

Breaux Act Projects Give Wetlands a Sporting Chance

Recreational fishing boats dot the waters around Raccoon Island, following resurgent populations of speckled trout and redfish. Shorebirds cluster along sand flats, while pelicans, egrets, herons, spoonbills and ibis nest in stands of black mangrove.

In the last decade, this tiny island has become one of the premier saltwater fishing spots in Terrebonne Parish and a boon to birders. As do many other Breaux Act projects, Raccoon Island exemplifies how sportsmen and other outdoors enthusiasts benefit from coastal restoration.

Breakwaters Build Barrier Island Habitat

Raccoon Island supports the greatest diversity of nesting birds in the state and provides crucial habitat for migrating neotropical birds. But like

the rest of the Isles Dernieres barrier island chain, Raccoon Island faces the threat of erosion.

A 1997 Breaux Act project, Raccoon Island Breakwaters Demonstration (TE-29), sought to reduce that threat by building eight rock breakwaters to buffer wave action and collect sediment. Positioned in shallow water off the island's eastern end, the segmented breakwaters form a dashed line 300 feet from the island's fragile shore.

"Sand flats accreting between the breakwaters and the island provide additional bird nesting habitat. The breakwaters also provide a reef-like environment that attracts small marine organisms — and the redfish, trout, flounder and croaker that feed on them," says Marty Floyd,

wildlife biologist with the Natural Resources Conservation Service.

In January construction began on a second project, Raccoon Island Shoreline Protection/Marsh Creation (TE-48), that will continue the line of breakwaters and deposit dredged sediment on the north side of the island to create 60 acres of wetlands, further protecting and expanding bird habitat.

"Because both birds and fish are very mobile, outdoor enthusiasts will see benefits from this project not only on Raccoon Island but also quite a distance away," says Floyd.

Terraces Give Fish an Edge

For white shrimp, brown shrimp, blue crab and other invertebrates near the bottom of the food chain, edge habitat is "the name of the game," says John Foret of the National Marine Fisheries Service.

That's why terracing, a coastal restoration technique that creates thin strips of land in open-water areas, makes good fisheries habitat — and good fishing. "Terraces are virtually all edge," Foret explains. "They provide food and refuge for

Courtesy of G. Linscombe, LDWF



Black mangroves planted atop the dunes of Raccoon Island provide nesting habitat for several species of herons and egrets, including the reddish egret (above). The woody shrubs provide nesting cover and resting perches for native and migrating birds.



small invertebrates, whose presence attracts the game fish that feed on them.”

Completed in 2004, the Four Mile Canal Terracing and Sediment Trapping project (TV-18) consists of 90 terraces arrayed along the shores of Little White Lake and Little Vermilion Bay. Designed to accrete sediment and reduce shoreline erosion, the terraces already benefit area fisheries and may eventually provide habitat for numerous species of birds.

“Waterfowl often nest in marsh plants along terraces, and woody plants provide resting perches for migratory birds,” Foret says. “Ducks are drawn to the submerged aquatic vegetation that often colonizes the shallow water between terrace edges.”

Terraces Provide Habitat for a Variety of Species

Many fishermen and duck hunters in coastal Louisiana have discovered ample game near terracing projects. Here's why:

- 1** Along terrace edges, fish and crustaceans find food and nursery habitat and attract the larger fish that feed on them.
- 2** Marsh grasses on terrace slopes provide nesting cover for waterfowl, while woody vegetation atop terraces offers resting perches for migratory birds.
- 3** Ducks feed on the submerged aquatic vegetation that often grows along terrace edges.



Adapted from CWRPRA Project TV-18 monitoring plan

Keeping Salt Water at Bay, Structures Benefit Plants, Wildlife

More than 300 species of birds use the 125,000-acre Sabine National Wildlife Refuge, making the site popular with hunters, bird watchers and other outdoorsmen.

But saltwater intrusion from shipping channels and canals threatens vegetation in the refuge's freshwater and intermediate marshes. The submerged aquatic vegetation (SAV) on which many ducks feed is especially sensitive to salt — and if the SAV dies, the ducks won't return.

By replacing undersized, outdated water control structures at three key locations, a 2001 Breaux Act project — Replace Sabine Refuge Water Control Structures at Headquarters Canal, West Cove Canal and Hog Island Gully (CS-23) — allows greater control over water flow through the refuge's eastern third.

“The new structures have sliding gates that allow precise control over the amount of water entering or leaving the refuge,” explains Darryl Clark of the U.S. Fish and Wildlife Service. “That lets us maintain the right salinity levels in our marshes and allows fish and shellfish access to the area.”

Water can now move in and out of the refuge in a way that mimics tidal flow, Clark says. “That preserves marsh habitat, fish and wildlife for the enjoyment of duck hunters, bird watchers and the thousands of others who fish, crab and shrimp here every year.” **WM**



Right: Straddling a small waterway that connects the Sabine National Wildlife Refuge to Calcasieu Lake, the Hog Island Gully water control structure helps protect over 42,000 acres of marsh from high-salinity salt water.

Above: The structure's six gates allow refuge managers precise control over the movement of water in and out of the refuge.



Darryl Clark, U.S. Fish and Wildlife Service

Examples of Breaux Act Projects That Restore Habitat for Fish and Game

Project Name	Project Type	Basin	Project Goals	Benefits
Atchafalaya Sediment Delivery (AT-02)	Marsh Creation	Atchafalaya	Promote delta growth and build marsh	Marine fisheries, wildlife
Big Island Sediment Mining (AT-03)	Marsh Creation	Atchafalaya	Promote delta growth and build marsh	Marine fisheries, wildlife
Barataria Bay Waterway Wetland Delivery (BA-19)	Marsh Creation	Barataria	Build marsh via beneficial use of dredged material	Birds, marine fisheries
Vegetative Plantings on Grand Terre Island (BA-28)	Vegetative Plantings	Barataria	Stabilize beach sediment via vegetative plantings	Birds, marine fisheries
Cameron Creole Plugs (CS-17)	Hydrologic Restoration	Calcasieu	Reduce salinities, moderate water levels, increase emergent and submergent vegetation	Waterfowl, wildlife
Replace Control Structures at Sabine NWR (CS-23)	Hydrologic Restoration	Calcasieu	Reduce salinities, moderate water levels, increase emergent and submergent vegetation	Waterfowl, wildlife
Black Bayou Hydrologic Restoration (CS-27)	Hydrologic Restoration	Calcasieu	Reduce salinities, moderate water levels, increase emergent and submergent vegetation	Waterfowl, wildlife
Sabine Refuge Marsh Creation (CS-28)	Marsh Creation	Calcasieu	Build marsh via beneficial use of dredged material	Marine fisheries, wildlife
Holly Beach Sand Management (CS-31)	Barrier Island	Calcasieu	Reestablish beach system and shoreline	Birds, marine fisheries
Pecan Island Terracing (ME-14)	Terracing	Mermentau	Build marsh, reduce wave fetch and shoreline erosion, reduce water turbidity	Marine fisheries
West Bay Sediment Diversion (MR-03)	Freshwater Diversion	Mississippi River	Promote delta growth and build marsh	Marine fisheries, waterfowl, wildlife
Delta Wide Crevasses (MR-09)	Marsh Creation-Freshwater Diversion	Mississippi River	Promote delta growth and build marsh	Marine fisheries, waterfowl, wildlife
Bayou Sauvage NWR Restoration (PO-16/18)	Hydrologic Restoration	Pontchartrain	Reduce salinities, moderate water levels, increase emergent and submergent vegetation	Waterfowl, wildlife
Bayou La Branche Wetland Creation (PO-17)	Marsh Creation	Pontchartrain	Build marsh via dedicated sediment delivery	Wildlife
Hopedale Hydrologic Restoration (PO-24)	Hydrologic Restoration	Pontchartrain	Improve tidal exchange and reduce water impoundment	Marine fisheries, wildlife
Chandeaur Islands Marsh Restoration (PO-27)	Barrier Island	Pontchartrain	Stabilize island sediments via vegetative plantings	Marine fisheries, birds
East Island (TE-20)	Barrier Island	Terrebonne	Reestablish beach system, shoreline and back barrier marsh platform	Birds, marine fisheries
Point au Fer Plugs (TE-22)	Hydrologic Restoration	Terrebonne	Reduce salinities, moderate water levels, increase emergent and submergent vegetation	Wildlife
Trinity Island (TE-24)	Barrier Island	Terrebonne	Reestablish beach system, shoreline, and back barrier marsh platform	Birds, marine fisheries
Raccoon Island Breakwaters Demo (TE-29)	Barrier Island	Terrebonne	Protect island shoreline and sediments	Birds, marine fisheries
Timbalier Island (TE-40)	Barrier Island	Terrebonne	Reestablish beach system, shoreline, and back barrier marsh platform	Birds, marine fisheries
Little Vermilion Bay Sediment Trapping (TV-12)	Terracing-Sediment Trapping	Teche-Vermilion	Promote delta growth and build marsh	Marine fisheries, birds
Sediment Trapping at the "Jaws" (TV-15)	Terracing-Sediment Trapping	Teche-Vermilion	Promote delta growth and build marsh	Marine fisheries, birds
Four Mile Canal Terracing (TV-18)	Terracing-Sediment Trapping	Teche-Vermilion	Promote delta growth and build marsh	Marine fisheries, birds



Stewards in the Land of Abundance

Sportsmen's Stake in Paradise

Single blades of cordgrass cannot turn back a hurricane, but many standing together quell storm surge and moderate waves.

Similarly, no one person or single agency can reverse coastal land loss; protection and restoration of the sportsman's paradise require the dedication and participation of all stakeholders.

Sportsmen are realizing the importance of their role in addressing Louisiana's coastal crisis. By promoting public support for restoration, embracing inevitable change, and working through organizations to

make a difference on the ground, they are doing their part to save paradise.

Sportsmen and State Team Up to Rebuild Reef

Plentiful trout and redfish have made Lake Pelto a favorite among local fishermen, says John Walther, who's fished the area most of his life. Since 2002 the day's catch has increased, thanks to an artificial reef he and other members of the Coastal Conservation Association—Louisiana

(CCA) helped build on the site of a sunken barrier island.

“Working with the technical experts of the Louisiana Department of Wildlife and Fisheries (LDWF), we hoped to improve recreational fishing by restoring habitat,” says Walther, who as president of the CCA's Houma chapter led fundraising efforts for the project.

In March 2002, some 4,200 tons of golf ball-sized chunks of limestone were placed at the former site of Bird Island, creating a one-acre reef two to three feet high. “This reef provides hard-structure habitat, which is a vital part of the marine food chain,” explains Rick Kasprzak, LDWF artificial reef coordinator. “It provides a substrate for algae and soft corals, which attract invertebrates like crabs and shrimp — preferred food for speckled trout, redfish, spotted sea trout, and other popular game fish.”

Due to hurricanes, erosion and subsidence, Louisiana's natural oyster reef habitat is disappearing. “To maintain our fisheries, we must replace that habitat,” says Kasprzak. “By working with local

Courtesy of CCA-Louisiana



Delivered to the Bird Island site by barge, limestone pieces 1.5 inches in diameter were scattered across an area 200 feet square to form an artificial reef. “If we used larger pieces, that could pose problems for shrimp nets,” says Rick Kasprzak of the Louisiana Department of Wildlife and Fisheries.



Ambitious Effort Aims to Restore Storm-Ravaged Habitat

Hurricane-driven debris litters the Barataria-Terrebonne National Estuary, endangering the fragile habitat that has made this region a premier destination for birding enthusiasts.

“Toys, signs, swing sets, wedding pictures, the whole back seat of a charter fishing rig — the amount and variety of debris is mind-boggling,” says Joni Blanchard, coordinator of volunteers for the Barataria-Terrebonne National Estuary Program (BTNEP). Since spring, teams of BTNEP volunteers



have combed the area, hauling away debris and clearing bayous clogged by fallen trees.

This summer, a grant from the National Oceanic and Atmospheric Administration (NOAA) to BTNEP and the Gulf of Mexico Foundation will

expand clean-up efforts by supplying volunteers with chainsaws, trimmers, safety equipment, food, water and sunscreen.

“Bulldozing the area might be faster, but that would destroy this unique

ecosystem,” Blanchard explains. “This way, we preserve

prime habitat for migratory birds and restore an important resource for the thousands of visitors who come here to fish, canoe and tour the bayous.”



Debris littering the ground can prevent migrating birds from spotting food and fresh water, says Joni Blanchard. “Clearing away debris also allows new vegetation to take root, replacing trees and shrubs destroyed by the storms.”

Both courtesy of Joni Blanchard, BTNEP

sportsmen, we can identify locations where reefs are most needed and would be most utilized.”

Buoyed by the success at Bird Island, the CCA and

the LDWF have undertaken a second reef project in Vermilion Bay and have begun planning a project for the Lake Charles area.

The LDWF has also formed

reef-building partnerships with the Lake Pontchartrain Basin Foundation, the Recreational Fishing Research Institute, the Louisiana Wetland Association and other organizations. “Recreational fishermen’s

groups are a natural fit for projects like these, because anyone who fishes has a stake in providing habitat for game species,” says Walther. “If we don’t maintain that habitat in Louisiana’s inshore waters, the fisheries will decline.”

Ducks for Generations

“We did it because we wanted ducks to be around for our kids,” Jeff DeBlieux says of building the Ensminger-Songe Wetlands Unit in the Pointe-aux-Chenes Wildlife Management Area. “Guys who hunt in Terrebonne Parish have watched the wetlands change year by year — first

Courtesy of Ducks Unlimited



Installed in October 2005, water control structures at Pointe-aux-Chenes Wildlife Management Area in Terrebonne Parish reestablish the marsh’s natural hydrology, improving conditions for the marsh plants favored by waterfowl.



this corner vanished, then that corner. The ponds were getting bigger and bigger. Now we've restored 5,000 acres of marsh, prime waterfowl habitat, and it's open to the public at no charge."

As the chairman of the local chapter of Ducks Unlimited (DU), DeBlieux was closely involved in the project conceived decades ago by Allan Ensminger and Lloyd Songe, Sr., two employees of the Louisiana Department of Wildlife and Fisheries (LDWF). The idea sat on the shelf until four years ago when Ducks Unlimited formed a coalition to make the two men's vision a reality.

Having worked successfully with DU in the past, the Louisiana Department

of Natural Resources was pleased to participate in this project and pledged to cover a significant percentage of the construction cost, augmenting a grant from the North American Wetlands Conservation Act (NAWCA). DU raised additional funds from private businesses and individuals. "Citizens, businesses, sporting clubs, the media — the entire community was behind the project," DeBlieux says.

The project improved water flow in the degraded marsh by building a protective levee and installing four structures that permit egress of fresh water but block entry of wind- and wave-driven salt water. Submerged aquatic vegetation flourishes in the

restored area, and in time, highly productive, shallow ponds will replace open water. The LDWF will manage the unit to maintain excellent habitat for wintering waterfowl. **WM**

Strength in Numbers

Numerous organizations contribute to coastal restoration efforts in southern Louisiana. To learn more, visit the following Web sites:

Audubon Society:
www.audubon.org/states/la

Barataria Terrebonne National Estuary Program:
www.btnep.org

Coastal Conservation Association, Louisiana:
www.ccalouisiana.com

Coalition to Restore Coastal Louisiana:
www.crcl.org

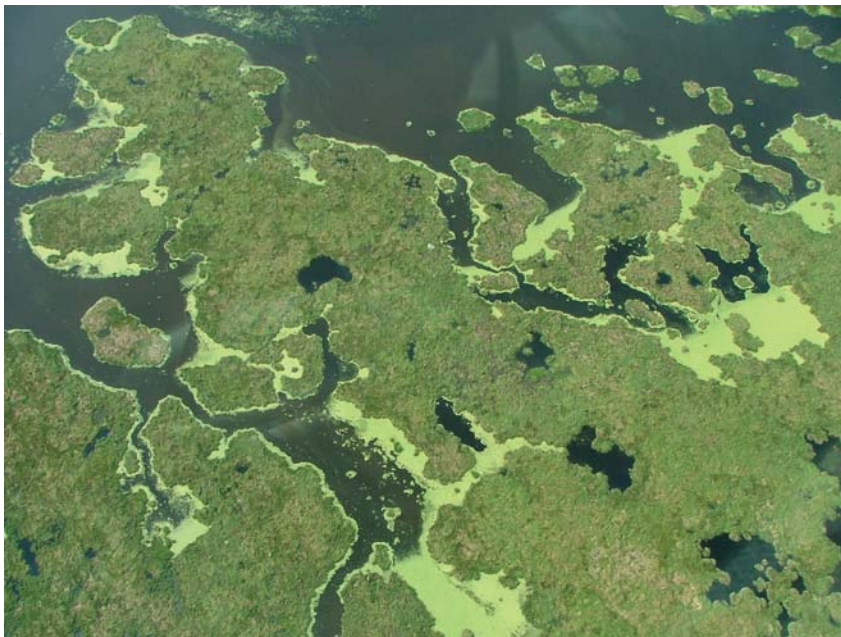
Ducks Unlimited:
www.ducks.org

Lake Pontchartrain Basin Foundation:
www.saveourlake.org

Louisiana Wildlife Federation:
www.lawildlifefed.org

The Nature Conservancy:
www.nature.org/wherewework/northamerica/states/louisiana

Courtesy of Ducks Unlimited



In a healthy coastal wetland, large areas of marsh grass are interspersed with ponds. That mix of land and water provides important habitat for wintering waterfowl and other wetland-dependent wildlife.

WATERMARKS Interview with Todd Masson

South Louisiana native Todd Masson has been editor of *Louisiana Sportsman* magazine for 12 years. An avid outdoorsman, Masson is passionate about the health of the marshes and swamps that support his hobbies and are so vital to the culture and charm of the Bayou State. In his career, he's written more than 250 feature stories about Louisiana's wetlands, including "Paradise Lost," a chilling look at coastal Louisiana's future that appeared in *Louisiana Sportsman* in August 2003. Masson is also the author of *Specks*, Louisiana's best-selling outdoors book ever. He lives in the New Orleans area with his wife and three children.

WM: We hear a lot of noise about land loss, but you talk to people, you look at the records, and fishing and hunting in coastal Louisiana continue to be superb. Why should sportsmen be concerned?

TM: In Louisiana we're cursed by what we're blessed with. The wetlands are vast. For years we've witnessed their degradation, and we've grown used to it. We fish one stretch of bank, watch it decline and disappear, and then move on to the next stretch of bank. There's always more, and the fishing and hunting remain fantastic.

But as more and more marshland converts to open water, those strips of bank become fewer and fewer. They will continue to dwindle until the entire ecosystem crashes.

WM: But why isn't the quality of hunting and fishing declining along with land mass?

TM: Ironically, degradation boosts a marsh's productivity. As a marsh erodes, it puts more nutrients in the water and creates more edge habitat, which is great for fisheries. A slightly broken marsh supports more waterfowl than a solid one. So, in the short run, wetland loss means there are more fish to catch, more ducks to shoot.

But as time goes on and more marshland converts to open water, we lose wetland habitat. Fish, waterfowl and other wildlife populations dependent on the marshes will inevitably decrease.

WM: But aren't changing conditions part of the natural order of things? Ducks leave one place, they go to another. Marsh erodes here, builds up



over there. Why should we be concerned about that?

TM: Erosion isn't catastrophic if a marsh receives sediment to maintain its shallow base. But over the past century, our success in suppressing river floods, in developing the oil and gas industries, in accommodating building and development has unbalanced the natural equation of land accretion and erosion.

New marsh springs up where sediment collects. Arguably the best duck hunting in the state is now in Atchafalaya Bay. Marshes to the east and west protect the bay, and river silt collects on its relatively shallow bottom. There is lots of emergent vegetation — three-corner grass and duck potato — and water-



fowl flock there by the tens of thousands.

WM: Then why do you think plentiful harvests in other coastal areas are a sign of impending doom?

TM: We can compare satellite images taken over years and see where land is accreting and where land is disappearing. Good harvests in deteriorating areas demonstrate how productivity increases in broken marsh. And we know once the marsh is gone, species that depend on the wetlands disappear too.

WM: Has that happened in Louisiana?

TM: Maybe in the Barataria basin. It used to be that you stood on Grand Isle and all you saw were stands of wire grass stretching into the bay. Now it's virtually nothing but wide-open water. Essentially the bay's become the Gulf of Mexico. Fishing's still good, but you talk to people who have fished the basin the past 10, 20 years, and they'll tell you the basin is producing nowhere near what it used to.

WM: So you're saying that, at least in Barataria Bay, land loss is already affecting anglers' experience.

TM: And not just anglers'. The fresh to intermediate marshes of Little Lake Hunting Club, out of Lafitte, used to be the envy

of duck hunters across Louisiana. Now the area is brackish, even saline, and hunting is nothing like it was. So it's not just loss of land that affects our sporting experiences, it's also marsh conditions changing and altering habitat.

WM: You describe a huge problem years in the making. Can sportsmen really do anything about it?

TM: If there is any silver lining to hurricanes Katrina and Rita, it is the realization that we have to fix this problem no matter what it takes. For the sportsman, that means looking beyond the afternoon's catch or the season's take and pressing for actions that will produce healthy wetlands 25, 50 years from now. Those of us who have a favorite

fishing hole or hunting ground have to be willing to give it up so that in the future, our kids and grandkids will have the chance to hunt and fish.

Land loss is going to affect fisheries, it's going to affect waterfowl habitat, it's going to affect wildlife populations. It's going to affect every person who enjoys outdoor sports in coastal Louisiana: There is no way to avoid it. To be effective, coastal restoration has to change present conditions. We can resist change and enjoy things as we know them a few more years — and then watch it all disappear — or we can accept change now in the hope that down the road, in the big picture, we and the generations that follow us will continue to enjoy coastal Louisiana as a sportsman's paradise. **WM**



"We can accept change now in the hope that ...we and the generations that follow us will continue to enjoy coastal Louisiana as a sportsman's paradise."

Courtesy of Louisiana Office of Tourism

Outdoors Programs Nurture Enthusiasm for Nature

Reeled in by fishing demonstrations and canoeing lessons at National Hunting and Fishing Day, a third-grader claims a prize in a kids' fishing contest — and urges his dad to teach him more about the sport.

Planning to lead her daughters on a camping trip like the ones she enjoyed as a child, a mother enrolls in Becoming an Outdoors-Woman (BOW), where she takes classes in land naviga-

tion, campfire cuisine and backpacking.

Often, all it takes to inspire love of the outdoors is a little exposure and education, says Bo Boehringer of the Louisiana Department of Wildlife and Fisheries (LDWF).

“Whenever we can teach outdoors skills,” says Boehringer, “we have a chance to develop new

lifelong participants.” To preserve and pass along Louisiana’s sporting traditions, the LDWF sponsors Louisiana’s National Hunting and Fishing Day, which draws thousands of families to events held across the state, and BOW, a

popular weekend program offering courses in fishing, hunting, wilderness first aid and other outdoors subjects.

“We learn to respect and appreciate nature by experiencing it,” says Bo. “Louisiana needs its sportsmen and women, people who understand the wonder of this paradise and will speak up and support its preservation.”

For more information about Hunting and Fishing Day and BOW, visit the Louisiana Department of Wildlife and Fisheries Web site, www.wlf.louisiana.gov. **WM**



Above and right: Outdoors education programs teach students basics to build on later. “BOW participants tell us that not only do they enjoy the classes, they gain the confidence to practice these skills on their own and pass them along to their families,” says Dana Permenter, LDWF’s BOW coordinator.

Both courtesy of Joni Blanchard, BTNEP

WATER MARKS

Louisiana Coastal Wetlands Planning, Protection and Restoration News

June 2006 Number 31

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