COASTAL CLIPS



Derelict Crab Trap Rodeos Round Up Lost and Abandoned Fishing Gear

Louisiana Sea Grant (LSG), working with the Louisiana Department of Wildlife and Fisheries (LDWF) and community volunteers, is on a two-year mission to clean coastal waters of derelict crab traps.

Derelict traps are those that have been discarded, lost or abandoned in the environment. Traps can be accidentally lost if they become separated from their buoys by storms or passing boats. Many continue to fish, ensnaring blue crabs and other important aquatic species. Additionally, these wire mesh enclosures pose a potential navigation hazard to boats and can become entangled in other fishing gear like shrimp trawl nets.

In a good year, the Louisiana crab fishery yields more than 50 million pounds of crabs with a value of over \$35 million.

For these reasons, Julie Anderson, statewide fisheries specialist and assistant professor with LSG and the LSU AgCenter, and LSG editor Paula Ouder sought and were awarded a \$164,000 grant from the National Fish and Wildlife Foundation for the Louisiana Derelict Crap Trap Removal and Prevention Project. LDWF committed a \$50,000 match.

Since 2004, LDWF, together with individual volunteers and organizations, has removed and disposed of nearly 20,000 derelict crabs. The LSG project represents an expansion of this effort.

Special volunteer "rodeos" took place in February and March, with two in St. Bernard and Plaquemines parishes and one in Terrebonne Parish. Nearly 2,000 traps were removed from St. Bernard and Plaquemines waters, and more than 750 were collected in Terrebonne Parish.

Because the crab fishery is legally considered open year-round, the process of the cleanup began with approval from the Louisiana Wildlife and Fisheries Commission in September 2011 to close designated waters to crab fishing for 10 days. Officials scheduled the closures for the winter when crabs are typically smaller and less available as a way to reduce the impacts to crab fishermen.

LDWF mailed notices to licensed trap holders, and any traps found within the specified waters during each closure were considered derelict and subject to removal. Anyone could participate, but traps had to be dropped off at designated disposal sites where they were crushed and, for the first time this



Volunteers removed more than 2,700 abandoned crab traps during three weekends in February and March.

year, the metal recycled. Volunteer efforts were concentrated on Saturdays, and organizers worked to create a festive atmosphere as workers attended to the messy task of pulling traps from the muck.

"It was wonderful to partner with LDWF," Anderson said. "We worked closely with Marty Bourgeois and Carl Britt on the planning and execution of the project. LDWF employees did a lot of hard work going out in boats to retrieve traps, crushing them on land and getting them recycled. Our hosts for the first two rodeos, Cpt. Jack Payne and Cindy Berry at Sweetwater Marina in Delacroix, were very accommodating and we are grateful to them. LUMCON (Louisiana Universities Marine Consortium) in Chauvin was our drop-off spot in Terrebonne Parish, and that worked out really well."

"The Coastal Conservation Association (CCA) was a great resource," Ouder added. "The group's cook teams prepared and served lunch for our volunteers, and CCA members volunteered their boats, time and fuel to retrieve hundreds of traps. The group also donated door prizes as an incentive for participants."

The Crab Task Force and The Nature Conservancy supported the project as well. The first rodeo benefitted from a visit from 42 members of the National Student Leadership Conference, composed of high school students from around the country who were visiting New Orleans for six days. They learned about the volunteer opportunity through the National Relief Network. The teens offloaded traps at the dock, and most were able to go out on boats to get a first-hand look at the natural beauty of Louisiana. LSU and LSU AgCenter staff and students also lent a hand and boats.

In addition to removal, the project includes an educational element designed to reduce the number of traps lost annually and to lessen the impacts of traps in the environment. Data were also collected on the number and types of animals found in the recovered crab traps.

Dates and locations for the 2013 rodeos will be set later this year.

On the web: www.laseagrant.org/crabtraps





Earth Fest 2012

Louisiana Sea Grant communications intern Mallory Richard explains sea level to an Audubon Zoo Earth Fest visitor. The festival, held March 17-18 in New Orleans, is an annual event that draws more than 20,000 adults and children. Visitors to the Sea Grant booth learned that although they may be miles away from the Gulf of Mexico – as the crow flies – they may be mere feet away when it comes to their home's elevation relative to sea level. LSG Extension agents have been presenting the same information to students in coastal schools this academic year. Information about the outreach effort can be found at *http:// www.laseagrant.org/pdfs/CC_No23_Winter11.pdf*.

Blogs Help Keep Sea Grant Stakeholders in Touch

Louisiana Sea Grant is extending its outreach activities to the blogosphere.

Currently, Extension agents Alan Matherne and Rusty Gaudé have blogs. And *Lagniappe*, a monthly fisheries newsletter published since 1977, is keeping its readers better informed through a blog.

"We're using the websites as a way to provide additional and timely information that just won't wait for a monthly newsletter or newspaper column," said Julie Anderson, Louisiana Sea Grant and LSU AgCenter statewide fisheries specialist and *Lagniappe* editor. "One of the great features of the blogs is that readers can provide us with comments and feedback about newsletter articles, posts and topics they would like to see discussed." The *Lagniappe* blog can be found at http://louisianalagniappe.wordpress.com/. Matherne, whose territory includes Terrebonne and Lafourche parishes, titled his blog "BayouLog" and it can be found at http:// bayoulog.com/. Gaudé's region includes Jefferson, Orleans, St. Charles and St. James parishes, but his blog is focused on Bayou St. John issues. It can be found at http:// bayoukchoupique.com/.

Louisiana, Michigan Partner on Oil Spill Technology

The Deepwater Horizon oil rig exploded and caught fire on April 20, 2010. Two days later, the largest oil spill in U.S. history began as the rig sank to the bottom of the Gulf of Mexico. More than 200 million gallons of crude spewed into the Gulf as a result, and millions of gallons of dispersant were added to the flow in an attempt to mitigate damages. Michigan experienced a similar disaster that same year in which 843,000 gallons of oil spilled into the Kalamazoo River.

In an effort to combat similar disasters in the future, Louisiana Sea Grant, the LSU AgCenter and Michigan Sea Grant plan to work together to design and test a cost-efficient device that separates oil and water. "The device will not only separate the oil and water," said Alan Matherne, LSG and AgCenter Extension agent for Terrebonne and Lafourche parishes, "but it will allow us to safely and legally put that water back into the environment as well as recycle the oil."

More effective separation of oil-water mixtures is a key technology for oil spill cleanup, and it has tremendous potential to decrease environmental damage, and to recover large amounts of oil that would be lost during a spill.

Set to begin in May 2012 and last until May 2015, this joint project will produce a treatment device that combines crossflow filtration and

hydrocyclonic (a swirling flow used to separate solids from liquids) separation into one unit to simultaneously de-oil water and recover the oil. The rotating flows create a force on oil droplets to extract them from the water.

Matherne will lead Louisiana's outreach component for the venture to ensure that residents, community leaders and other stakeholders are involved in the project, and that they understand research regarding the device.

"We'll begin by holding public meetings for those interested and provide a blog to facilitate information," said Matherne. "Social media will also be utilized to provide the community with updates. We want the public involved in this process and to understand how the device can help during a future spill."

During the final year of the project, Matherne expects to hold demonstrations of the device to provide hands-on learning opportunities.

"This technology could have a positive effect on our environment," said Matherne. "It directly affects us since we're on the Gulf, but it could eventually be applied as a nationwide project to combat future spills."

Sea Grant Funds Project to Demolish Outdated Water Control Structure

In an effort to improve water flow and recreational fisheries along Bayou St. John in New Orleans, the Gulf of Mexico (GOM) Sea Grant programs are funding the removal of a non-functional water control structure on the bayou. The \$234,000 project will be executed by the Orleans Levee District (OLD). The GOM Sea Grant programs are contributing \$95,000 toward the cost.

A recent study concluded the old water control structure is unnecessary. The cement structure, built in 1962, was originally designed with open butterfly valves to control water flow from Lake Pontchartrain. But years of valve maintenance problems rendered the control structure superfluous. In 1992, additional floodgates were built to replace the old structure.

"Because the new, much higher sector gate structure is the primary protection for storm surge entering the bayou, the original purpose of the 1962 structure to protect against storm surge is no longer necessary," said Gerard Gillen, OLD executive director.

The primary benefit of removing the old control structure will be to restore historic hydrologic flow into the bayou, allowing for the re-establishment of Bayou St. John's aquatic vegetation and the growth of native marine life. Officials also hope that the revitalized bayou will attract more recreational activity along the City Park lagoons that feed off the bayou.

If all goes as planned, the project will be completed by the end of June.

The Gulf of Mexico Sea Grant programs consist of the Louisiana Sea Grant College Program, Texas Sea Grant College Program, Mississippi-Alabama Sea Grant Consortium and Florida Sea Grant.

Teens Attack Invasives Problem with a Rodeo

We've all heard of rodeos. From the Angola Prison Rodeo to annual fishing rodeos, rodeos of all varieties are a familiar Louisiana pastime. But have you ever heard of a nutria rodeo?

Neither had Alex Naquin, co-founder of Sassafras Louisiana and a junior at South Lafourche High School in Galliano.

"My friend Aaron Guidry came to us with the idea," Naquin explained. "At first we all thought it was a joke, but Aaron was serious about it. That was how it all started."

Guidry, a senior at South Lafourche and co-chair of Sassafras Louisiana, proposed hosting a nutria rodeo to raise awareness about invasive species such as coyote, Asian carp, nutria and wild hogs. Nutria, a species that was originally introduced to North America by fur trappers, can typically be found living in burrows alongside water bodies. They feed on aquatic plants and waste close to 90 percent of the plant material while feeding on the stems. Their feeding and burrowing behaviors destroy precious marshlands, making the nutria a devastating coastal problem.

With the support of Sassafras Louisiana, an organization dedicated to engaging Louisiana's youth in restoring and preserving the state's Gulf coast, Guidry's idea came to fruition. The event took place on Dec. 3 at the Oak Ridge Community Park in Golden Meadow and attracted more than 350 participants and a good deal of media attention.

"We were very pleased with the turnout," Naquin said. "We even got national press coverage. Florida, Georgia, Mississippi, you name it, they covered it."

Participants primarily hunted nutria, wild hogs and coyote. All hunting participants possessed hunting licenses and were required to hunt on private property. Hunters' efforts were rewarded in a variety of competitions, including the most game killed, the largest game killed, and there was even a bid for the nutria with the orangest teeth.

Naquin reported that 20 nutria, 10 feral hogs and two coyotes were brought in. The largest nutria weighed 20 pounds; the largest feral hog was 146.1 pounds; and the largest coyote weighed 30.9 pounds. All game killed was donated to the La Rose Civic Center for a wild game cook-off to benefit needy families.

"The rodeo was absolutely a success," Naquin said. "We definitely look forward to hosting this family event annually." Naquin added that Sassafras Louisiana hopes to expand the rodeo by working more closely with Louisiana Sea Grant in the future. Sea Grant and LSU AgCenter extension agent Alan Matherene publicized the rodeo as well as attended the event.

Naquin also hopes to educate the public about the dietary usefulness of invasive species by demonstrating ways to cook and prepare the species.

On the web: www.sassafrasla.org



Nutria teeth compared at the Nutira Rodeo in Golden Meadow.

Differences between Two Alligator Gar Populations Studied

Louisiana's diverse ecosystem supports a unique assortment of terrestrial and aquatic species. This ecological bounty provides an opportunity for Allyse Ferrara, associate professor of biological sciences at Nicholls State University, to study two groups of alligator gar, an ancient and persistent air breathing fish found along the Gulf of Mexico Coastal Plain and in the Mississippi River and its larger tributaries.

Ferrara's study, titled "Characterization of Two Coastal Populations of Alligator Gar," compares life histories and diets of two gar communities that are exposed to different rates of fishing pressure. "We have a unique situation here in Louisiana compared to other states," said Ferrara, "and we're actually really lucky. We don't have regulations that limit harvest of alligator gar, which allows us to compare two marsh populations that experience different levels of fishing pressure."

The study groups are located in the Rockefeller Wildlife Refuge and the Terrebonne Estuary. The Rockefeller Wildlife Refuge community is lightly exploited with no commercial fishing and restricted public access, while the population in the Terrebonne Estuary is more heavily exploited with unrestricted harvest by commercial and recreational fishers.

"Populations of alligator gar have declined with changes in habitat," said Ferrara. "So we're hoping to see if the differences in fishing pressure have an effect, as well."

Life history characteristics such as seasonal diets, age and size distributions, growth rates, reproductive cycle and total mortality are items of comparison in this study.

Alligator gar are closely tied to the sustainability and health of the state's coastal ecosystems. The species is vulnerable to decline from loss of suitable spawning habitats from saltwater intrusion, subsidence and erosion.

"Because the populations are vulnerable and we have this opportunity to gather data on the fish, we're hoping that the information gathered can be used as a future resource for fisheries in other states, as well as here in Louisiana," said Ferrara. "We're

also working to produce the fish more efficiently for restocking purposes, and the possibility of aquacultureproduced fish becoming regionally unique table fare to supplement wild harvest."

The Louisiana Sea Grant-sponsored project continues through August 2013. Thus far, 370 fish have been collected fro



An alligator gar is collected for study.

been collected from the two sites, providing a large sample of data during the past year.

Research Update

Development of Novel Spawning Protocols for Pompano

In an effort to address the lack of voluntary or volitional reproduction of some marine fishes raised in captivity, Louisiana Universities Marine Consortium (LUMCON) scientists have developed an innovative technique for promoting natural spawning among pompano with

hopes of improving hatchery production and profit margins.

While many species of marine fishes, such as red drum and speckled trout, breed readily in captivity with just light and temperature conditioning cycles, the Florida pompano does not. Edward Chesney, an associate professor with LUMCON specializing in culture, growth and spawning habits of marine species, is leading the Louisiana Sea Grant-sponsored effort to develop a more natural and efficient method for volitional spawning of Florida pompano. "There has been work



Ed Chesney examines Florida Pompano.

done on spawning of pompano over the years with some success," said Chesney. "But the best results to date have been with hormone implants." Hormone implants are typically administered to brood stock to induce reproduction for commercial purposes, but Chesney points out that the hormones often compromise the quality of the eggs produced.

"The goal of this project is to eliminate the use of hormones in the spawning process," he said.

To accomplish this, Chesney and his team have conducted trials combining natural and artificial light cycles by rotating the fish from indoor to outdoor tanks. "In the northern Gulf, it is too cold in this climate to hold pompano outdoors all winter long unless they are in some sort of greenhouse," Chesney said.

He explained that many fish species reproduce better with natural light cycles. Chesney hopes that his team can achieve volitional spawning with quality eggs by partially conditioning fish both indoors and outdoors.

While Chesney reported that the brood stock did not spawn naturally in the first trials, he did note that the fish seemed to show an improved growth rate when cycled outdoors. "That was a surprise and difficult to rationalize why they would eat more and grow faster when moved outdoors," he said.

He hopes to expand on his results by conducting more trials during the spring and potentially implanting one group of pompano with hormones if they do not spawn naturally.

"That's the trick," Chesney said. "You have to come up with techniques that not only will work, but will also be user friendly for the industry."

Trout Study May Aid in Fishery Management

There's always been a curiosity factor surrounding why fish move from one area to another. For species such as spotted sea trout, which are an important resource in coastal Louisiana, that knowledge is critical to effectively manage the fishery.

Beginning in May 2007, Jody Callihan, then a doctoral student in LSU's Department of Oceanography and Coastal Sciences, embarked

on a 29-month project to answer some of those fish migration questions using an acoustic telemetry approach. With the help of Louisiana Sea Grant and LSU AgCenter extension agent Kevin Savoie, acoustic transmitters were surgically implanted in 172 adult spotted sea trout in the Calcasieu Lake system. The fish were tracked by 60 receivers

deployed throughout the estuary, including receivers placed at the two entrance/exit points of the system.

The receivers have the ability to monitor fish movements from a variety of spatial and temporal scales, as well as quantify habitat use. Residency patterns, environmental preferences and severe

weather effects on fish movement were the focus of Callihan's research.

The fish achieved a high survival rate. Eighty-four percent were detected by multiple stations more than one week after surgery and being released. During the course of his study, a total of 650,000 detections were recorded from these fish.



Acoustic transmitters

Overall, most fish preferred to stay in the estuary, as only 18 percent emigrated and did not return. This emigration practice occurred only during late spring and summer and was nearly three times higher for males than females.

"We don't really know where these emigrants go," said Callihan. "So these rates should be viewed as a conservatively high estimate of movement to other systems."

Females also tended to avoid lower salinity areas compared to males, according to his findings. Females virtually disappeared from lower salinity areas as males continued to stay in an area regardless of salinity levels. This is thought to be related to differences in energy



optimization between sexes, allowing females to channel more of their energy to other processes such as growth and reproduction.

Callihan believes this movement data can be used as a management tool to better predict animal responses to freshwater diversions used for coastal restoration as well as flood control.

During the study, Tropical Storm Edouard occurred and produced high winds directly over the lake. Movement responses varied

Jody Callihan implants an acoustic transmitter in a spotted sea trout to monitor its movement.

depending on where the fish were at the beginning of the storm. "Fish that were in open, exposed habitats during the storm moved

to protected, deep water," said Callihan. "Fish that were already in those protected and deep water habitats remained there, which makes sense."

Callihan is currently a post-doctoral researcher at North Carolina State University's Center for Marine Sciences and Technology. His presentation can be found at *http://tinyurl.com/7za846j*.

Louisiana Sea Grant Director Announces Departure

Louisiana Sea Grant College Program Executive Director Charles "Chuck" Wilson has announced his upcoming retirement.

Wilson, who has been Sea Grant director since 2005, will retire from Louisiana State University with nearly three decades of service this coming



Chuck Wilson

h nearly three decades of service this coming summer to take the position of chief science officer at the Gulf of Mexico Research Initiative (GoMRI). "I am extremely grateful to LSU for an exciting and fulfilling academic career and for opportunities that the university has afforded me over the past 28 years," said Wilson.

"My time with Sea Grant has been especially rewarding," he added. "Along with fostering research, education and outreach, Sea Grant has responded to four devastating hurricanes, the worst oil spill in the nation's history, as well as Mississippi River flooding. I can say it has been a pleasure to work with such a group of dedicated professionals eager to address these and other coastal issues."

In 1985, Wilson helped establish the Louisiana Artificial Reef Initiative, which explored and led to the development of the Louisiana Artificial Reef Program (The Louisiana Fishing Enhancement Act of 1986). Over the past 20-plus years he also has served on a number of state and federal advisory boards, panels and committees concerned with fishery management and habitat issues in the Northern Gulf of Mexico.

Wilson served as chair of the LSU Department of Oceanography and Coastal Sciences from 1995-2002, director of the Coastal Ecology Institute from 2002-2003, and vice provost in the Office of Academic Affairs from 2003-2010. He received a Ph.D. in marine fisheries from the University of South Carolina in 1984.

Wilson is only the second executive director of the Louisiana Sea Grant College Program. For additional information about his pending GoMRI appointment, visit *www.gulfresearchinitiative.org*.

Decision-Making Toolkit for Wetland Management Goal of Laborde Chair

Edward Maltby, emeritus professor of wetland science, water and ecosystem research and former director of the Institute for Sustainable Water, Integrated Management and Ecosystem Research at the University of Liverpool, is the John P. Laborde Endowed Chair for Sea Grant Research and Technology Transfer at Louisiana State University.

As Laborde chair, Maltby's objective is to develop an integrated framework for the assessment of ecosystem services based on scientific evidence of key processes and functions performed by coastal wetlands. He believes that there are better ways to quantify wetland restoration efforts and is interested in shifting how policy makers view the environment.

"There is a growing realization that the natural environment is extremely valuable," said Maltby. "Yet, the wetlands are often under-valued and simply taken for granted. I would like to show a stronger link between wetland characteristics and how they function to what services they provide."

Coastal wetlands are important in protecting Gulf communities from tropical storms and sea level rise. Maltby hopes to contribute to a better foundation of strategies for coastal zone restoration based on a holistic approach. "Coastal restoration in Louisiana is often a conflicting issue," said Maltby. "I would like to make a stronger connection between science and people. The wetlands can provide many benefits to society, and it would be a benefit to

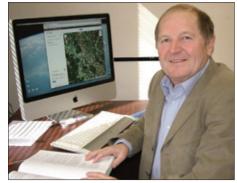
human wellbeing if they are made better known."

Maltby hopes that upon conclusion of his Laborde appointment there will be development toward a practical toolkit that will enable policy makers to make more informed, reliable and transparent decisions in relation to the management and

sustainable utilization of coastal wetland assets.

"We are currently in the exploratory phase of this project to prepare the groundwork for our focus effort," said Maltby. "I am currently reviewing existing evidence regarding wetlands as well as speaking with professionals to determine the level of our current knowledge base." Maltby also plans to interview stakeholders to gain further understanding of their knowledge of wetlands and how wetland conditions affect them.

Maltby has more than 40 years' experience in scientific research and environmental project management. His achievements include early



Edward Maltby

studies of soil microbial and ecological changes resulting from drainage and land use alteration in Louisiana wetlands. During the last two years, he has played a key role in the UK National Ecosystem Assessment, which has helped move policy toward greater recognition of the importance of ecosystem services. He will serve as

Laborde chair through June 2012.

The John P. Laborde Endowed Chair for Sea Grant Research and Technology Transfer enables Louisiana Sea Grant to bring highly qualified scientists to LSU to focus on marine and coastal issues critical to the state while providing those researchers with supplemental sabbatical funding. To date, seven internationally recognized researchers have been appointed to the endowed chair.

LUMCON Director Named National Sea Grant Advisory Board Chair

Nancy Rabalais has been named the chair of the National Sea Grant Advisory Board. She has served on the board since 2008.

Rabalais has served as executive director of the Louisiana Universities Marine Consortium (LUMCON) since 2005, and has been a LUMCON researcher and faculty member since 1983. She is internationally known for her research on the dynamics of hypoxic environments and interactions of the Mississippi River with the Gulf of Mexico. She additionally studies estuarine and coastal eutrophication, benthic ecology, and environmental effects of habitat alterations and contaminants. She and her research team are currently involved in studies of



Nancy Rabalais

multiple environmental stressors in the Barataria estuary; the "Dead Zone" in the Gulf of Mexico; coastal observing systems; and phytoplankton taxonomy, ecology and physiology.

Rabalais received the 2002 Bostwick H. Ketchum Award for coastal research from the Woods Hole Oceanographic Institution and several research and environmental awards for her work on the causes and consequences of Gulf hypoxia. These include the Blasker Award for Environmental Science and Engineering, a NOAA Environmental Hero Award, a Gulf Guardian Award and a Clean Water Act Hero.

Louisiana Sea Grant has been involved in funding four of Rabalais' past research projects.



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The Louisiana Sea Grant College Program is part of the National Sea Grant College Program maintained by the National Oceanic and Atmospheric Administration of the U.S. Department of Commerce. Sea Grant, a unique partnership with public and private sectors, combining research, education and technology transfer for public service, is the national network of universities meeting changing environmental and economic needs of people in our coastal, ocean and Great Lakes regions.

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Gulf of Mexico Hydrological Restoration Projects Sought

Do you know of a hydrological restoration project that is not funded? Information about projects that remove or modify anthropogenic barriers in order to restore historic tidal estuarine and freshwater exchange that benefit coastal and marine fisheries habitat are being sought. Project ideas can cost up to \$5 million.

Hydrological restoration projects can provide a large impact at a relatively low cost. An inventory of potential restoration projects will be developed and shared with numerous groups that fund on-the-ground restoration.

Building this inventory demonstrates the demand for these types of projects and allows projects to get more exposure to potential resources. The projects in the inventory also

> can be prioritized based on funding source objectives. The Gulf of Mexico Sea Grant College programs and **NOAA** Restoration Center are providing this service to emphasize to funding agencies the need for these types of projects and increasing the likelihood that

hydrological restoration will be implemented throughout the region.

To place a Louisiana project in the inventory, contact Louisiana Sea Grant and LSU AgCenter Extension specialist Maurice Wolcott at mwolcott@agcenter.lsu.edu, or 225/578-8291.

