Matherne Returns to Louisiana Sea Grant

Alan Matherne jokes that he's the "old" new area agent for fisheries and coastal issues in Terrebonne, Lafourche and Assumption parishes.

He began his Marine Extension career with Louisiana Sea Grant and the LSU AgCenter in St. Bernard and St. Tammany parishes, where he worked from 1981-1984. He switched to Lafourche Parish in 1984. In 1997, Matherne founded Mathco Computer and left the world of Extension behind – for a while.

Alan Matherne

David Bourgeois held the agent's post until his death in late 2009. When the job opening was announced, Matherene decided he would like to return.

"Helping fisherman is one of my biggest motivators," Matherne said, noting that he comes from a family accustomed to earning its living from Louisiana's living natural resources. His grandfather trapped muskrat, nutria and gators. His uncle caught catfish and blue crabs and produced soft-shell crabs.

When asked what has changed in fishing in the last 13 years, Matherne observed that the fleet is smaller and many of the people he worked with in the 1980s and '90s have retired. The children of his former constituents who chose to remain in the fishery are barely getting by.

While he has a strong footing in marine fisheries, Matherne also looks forward to working with wild crawfish harvesters and turtle farmers in the freshwater realm. He's particularly interested in reopening the pet turtle market, which has suffered due to reported links between the beloved reptiles and salmonella infection.

"Sea Grant is a great model. A big part of my job is bringing solutions from researchers to the people and then bringing the people's problems back up to the researchers," Matherne said.

"We're fortunate that Alan was available as an applicant," said Rex Caffey, professor in the LSU Department of Agricultural Economics and director of the LSU Center for Natural Resource Economics and Policy. "He possesses extensive knowledge of the communities he serves and the issues they face. Alan seems to have picked up just where he left off. He's hit the ground running. It's a wonderful thing to have someone with his experience and understanding back on board, especially in this time of tremendous change along the coast."

Matherne holds a bachelor's degree in marine biology from Nicholls State University and a master's degree in vocational education from LSU. He can be reached at *amatherne@agcenter.lsu.edu* or at his Houma office at (985) 873-6495.

Charter Boat Survey Results

The data entry is done, and the analysis of the Gulf of Mexico charter boat industry's 2009 economic health should be complete this coming spring.

"The information collected includes captain and primary vessel characteristics, business structure and effort, and attitudinal responses to current and proposed fisheries management scenarios," said Michelle Savolainen, a Louisiana Sea Grant-funded graduate student conducting the study under LSG and LSU AgCenter economist Rex Caffey.

Michelle Savolainen interviews charter boat captain Tom Becker.

Charter boat captains from the Florida Keys to the southernmost tip of Texas were asked to complete the survey to gauge the impact of regulatory, economic and other factors on the structure and resiliency of the charter fishing industry. The survey is conducted every ten years. Texas A&M and the University of Florida administered the first two questionnaires.

Measuring the industry's 2009 economic health could be significant given the 2010 Deepwater Horizon disaster, closing of waters to commercial and recreational fishing and the possible long-term economic impacts from the oil spill. 2009 data has the potential to serve as a baseline when quantifying the spill's effect on the charter boat industry.

"The survey went out the day after the spill," said Savolainen. "Day-by-day as the spill was happening, responses were coming back. Out of 2,305 questionnaires sent out, we received 679 back. That's a 30-percent response rate, which should provide an accurate picture of the industry's health before the spill."

Savolainen said the plan is to publish survey results online in spring 2011.

Sea Grant communicators from across the country planted 200 feet of shoreline along Big Lake in New Orleans City Park during Sea Grant Week 2010, held Oct. 16-20. The spartina planted helps harden the shoreline against erosion and creates additional fisheries habitat. More than 300 Sea Grant personnel from the nation's 32 programs – as well as delegations from Sea Grant programs in Korea and Indonesia – attended Sea Grant Week 2010 in New Orleans. The event provided an opportunity to share individual program research, education, extension and outreach successes; strengthen working ties; and help chart a course for Sea Grant's future.

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Ocean Commotion 2010

Louisiana Sea Grant's annual one-day coastal educational event, Ocean Commotion, brought 2,088 K-12 students, plus 368 teachers and chaperones to LSU's Pete Maravich Assembly Center Nov. 9. Students learned about animals, aquatic habitats, the weather, wetlands, boating safety and numerous other topics from 63 exhibitors drawn from area government, non-profit, environmental and educational agencies. Right, a young attendee comes face-to-face with a polar bear from the U.S. Fish and Wildlife Service Repository, courtesy of the Safari Club International, Baton Rouge Chapter. Additional information about Ocean Commotion can be found at *http://www.lamer.lsu.edu/projects/oceancommotion/index.htm.*

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C O A S T A L C L I P S

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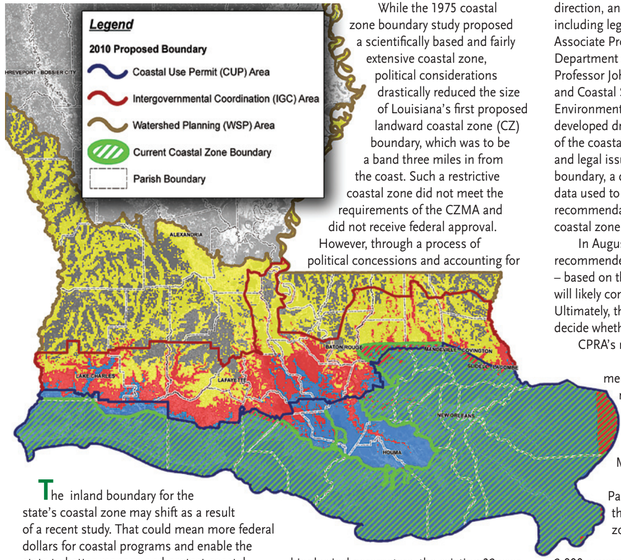
Coastal Zone Boundary Shift a Possibility



The inland boundary for the state's coastal zone may shift as a result of a recent study. That could mean more federal dollars for coastal programs and enable the state to better manage and protect coastal resources and safeguard the public from increasing natural hazards.

Louisiana's current coastal zone boundary was proposed in 1975 following a multi-agency research project sponsored by the National Oceanic and Atmospheric Administration (NOAA). State coastal zones stem from the federal Coastal Zone Management Act (CZMA), which encourages and provides incentives for governing bodies to preserve, protect and, where possible, restore and enhance natural coastal resources such as wetlands, floodplains, beaches, barrier islands and coral reefs. CZMA participation is voluntary, but states choosing to participate qualify for federal financial assistance to develop and implement coastal management programs, and they are granted some control over federal activities affecting the state's coastal zone.

While the 1975 coastal zone boundary study proposed a scientifically based and fairly extensive coastal zone, political considerations drastically reduced the size of Louisiana's first proposed landward coastal zone (CZ) boundary, which was to be a band three miles in from the coast. Such a restrictive coastal zone did not meet the requirements of the CZMA and did not receive federal approval. However, through a process of political concessions and accounting for biophysical parameters, the existing 32-year-old boundary, which includes all or parts of 19 coastal parishes and approximately 5.3 million acres of land, was adopted in 1978.

"During the 2009 state legislative session, Senate Concurrent Resolution No. 60 asked the Coastal Protection and Restoration Authority (CPRA) to conduct a science-based study on the adequacy of the current inland coastal zone boundary," said Jim Wilkins, Louisiana Sea Grant Law & Policy Program (LSGLPP) director. "The purpose of the study was to determine if the boundary meets current and future needs when it comes to managing, protecting and restoring our coast and serving its human inhabitants."

The Louisiana Department of Natural Resources' Office of Coastal Management took the lead on the study, at CPRA's direction, and worked with LSGLPP staff, including legal research assistant Seth Bagwell, Associate Professor Mike Wascom of LSU's Department of Environmental Studies, Professor John Day of LSU's Oceanography and Coastal Studies program, and Shaw Environmental & Infrastructure Inc. They developed draft findings that include a history of the coastal zone, description of the physical and legal issues associated with the current boundary, a detailed analysis of the scientific data used to re-evaluate the boundary, and recommendations on how to redefine the coastal zone and its boundaries.

In August, CPRA outlined several recommended changes to the coastal zone – based on the study – that the Legislature will likely consider during its 2011 session. Ultimately, the Legislature has the authority to decide whether or not to shift the boundary.

CPRA's recommendations include:

- Establishing an "Intergovernmental Coordination Area," which requires governmental actions that involve major changes to water flow or management to be consistent with the Louisiana Master Plan for a Sustainable Coast.
- Add a portion of Ascension Parish to the coastal zone, bringing the number of parishes in the zone to 20.
- Create a net increase of about 2,000 square miles to the coastal zone by increasing the zone's coverage in Assumption, Calcasieu, Cameron, Iberia, Lafourche, St. Mary, St. Martin and Terrebonne parishes. A slight decrease in zone coverage is proposed in Livingston and Tangipahoa parishes.

The proposed changes more accurately reflect the most up-to-date scientific understanding of the functions and complex systems that shape Louisiana's coastal zone, according to DNR. "Redrawing the boundary, as well as the planning and coordination zone area boundaries, could mean more federal assistance for coastal protection and restoration efforts," noted Wilkins.

More information on the study and recommendations is available at *http://dnr.louisiana.gov/crm*.

Louisiana Sea Grant Response to Gulf Oil Spill

Seven Louisiana parishes were directly impacted by the Deepwater Horizon oil spill and the state's remaining coastal parishes suffered indirect effects. Immediate impacts were related to loss of access to fishing grounds and reduced national demand for seafood due to contamination concerns. The longer-term concerns will be associated with ecological damages and perceived safety of Louisiana seafood.

As the disaster unfolded, all Louisiana Sea Grant programmatic areas were activated, from research and Marine Extension to the legal program, communications office and education department. Louisiana Sea Grant and the LSU AgCenter worked both to assist constituents and to fulfill their role as brokers of unbiased, reliable information in addressing the socioeconomic and seafood safety issues.

"Part of Sea Grant's Deepwater Horizon mission was and will continue to be recruiting the state's best available talent in addressing oil spill-related issues and solutions," said LSG Executive Director Chuck Wilson. "At least 80 percent of our Extension agents' time has been reallocated to help our constituents deal with the oil spill aftermath and recovery."

Research

• LSG's seafood specialist collected archival samples of shrimp harvested before the spill to explore methods of detecting petroleum taint in seafood. Also, LSG's statewide fisheries specialist conducted research on the effects of dispersant on juvenile blue crabs and blue crab megalopae.

• Less than nine days after the Deepwater Horizon event, Louisiana Sea Grant issued a request for proposals for short-term, rapid-response research projects to monitor the effects of the spill on coastal marshes and important fishery species. More than 50 proposals were received. Initially Louisiana Sea Grant was able to underwrite five research projects. An additional five projects were funded with monies provided by the National Sea Grant Office.

Extension

• Sea Grant program personnel from Louisiana, Texas, Florida and Mississippi-Alabama called on scientists, policy makers and fishermen from Alaska to tap into their experiences in the aftermath of the massive Exxon Valdez spill 21 years ago. LSG facilitated meetings between Louisiana residents and Alaska representatives (*http://tinyurl.com/2wcyd4t*) and escorted federal representatives and the news media on tours of the Louisiana coast.

• LSG representatives responded to innumerable requests from local, national and international media and facilitated community meetings (such as one in Abbeville – *http://tinyurl.com/36atqpq*) to answer questions and allow residents to voice concerns. LSG provided information to the general public and state and local officials and participated in meetings with emergency planners, the U.S. Coast Guard and BP representatives.

• Marine Extension agents maintained frequent contact with local fishermen regarding closed fishing zones and provided information concerning claims, the Vessel of Opportunity Program, and training meetings. They gathered and interpreted technical reports and information to transfer to fishermen and the public and orchestrated special outreach for members of the state's Vietnamese fishing community.

• An LSG water chemistry specialist conducted a literature review of dispersant usage, toxicity, oil toxicity and recent studies by the Environmental Protection Agency on soil sampling across the northern Gulf coast, and provided summary information to LSG personnel and the public. Another Marine Extension specialist used geospatial technologies to create a map for parish officials that identified the location of oil-response assets such as jack-up rigs, booms and marsh openings. This map was so useful it was submitted to the federal government as part of a regional response plan.

• Extension Associate Julie Falgout became the first Sea Grant representative to be embedded in Joint Incident Command (JIC). She served as a communications conduit between Sea Grant and its constituents and other members of Joint Incident Command, distributing critical information from JIC and delivering essential information on Sea Grant programs and capabilities to JIC.

• To address short-term seafood safety concerns, Sea Grant Extension agents and specialists spoke with regional, national and international media about the spill's impact on Gulf seafood, participated in contamination detection workshops, and conducted contamination screening training for processors.

• LSG personnel developed comprehensive FAQs concerning the spill's economic impacts to fisheries in Louisiana (*http://gulfseagrant.tamu.edu/oilspill/economic.htm*).

Communications

• As soon as it became apparent that the well was discharging a significant amount of crude oil, Sea Grant programs in the five Gulf states joined together to develop the Gulf of Mexico Oil Spill Resources website (*http://gulfseagrant.tamu.edu/oilspill/index.htm*), providing a wealth of information and contacts on a variety of related topics. All GOM programs provided content for the site. Louisiana Sea Grant designed and maintains the site; Texas Sea Grant hosts the site on its server.

• Recognizing the imperative of obtaining environmental samples and data before the spill spread, the Research Sample Collection Forum (*http://sg-server.lsu.edu/forums/*) was created to allow researchers to coordinate sample collection trips and to list the samples they had and those they needed.

• Following the capping of the well, and in response to constant requests for this information, Louisiana Sea Grant established web pages dedicated to the Natural Resource Damage Assessment (NRDA) process (*http://www.laseagrant.org/nrda/index.htm*) to keep LSG personnel and stakeholders informed about restoration efforts.

• LSG Extension and Communications worked together to develop a short public awareness video on seafood safety (*www.youtube.com/user/LouisianaSeaGrant*). That video, along with other seafood safety materials, was distributed nationally across the Sea Grant network, with other programs sharing resources with their respective constituents.

Legal

• Amid public confusion surrounding various contracts with BP and concern over compensation for individual, business and natural resources losses, the LSG Law & Policy Program developed two fact sheets, "If You Suffer Damage Because of an Oil Spill" (*www.lsu.edu/sglegal/pdfs/Oil_Spill_Remedies.pdf*), and "Recovery of Public Natural Resources by the Federal and State Governments in the Event of an Oil Spill" (*www.lsu.edu/sglegal/pdfs/Natural_Resource_factsheet.pdf*), to explain pertinent law and to inform constituents who may need to file legal claims.

• LSG Law conducted legal research into a number of oil-spill related issues, including accepting assistance from foreign vessels and the Jones Act, criminalization of the oil spill, freshwater diversion use to reduce oil intrusion and its impact on fisheries, closure procedure for state and federal waters, claims by foreign nations, problems with double recovery, securities fraud issues and recovery under the general theory of torts.

• Sea Grant Law received numerous inquiries regarding the claims process and the distinction between claiming lost income based on prior catch by weight or by value and conducted research on that topic and advised the fishermen accordingly.

• Members of the Law & Policy Program participated in public meetings, answering questions on legal aspects of damage claims. And LSG Law published an article in the *Louisiana Coastal Law* newsletter entitled "Legal Implications of the Deepwater Horizon Disaster."

Education

• Louisiana Sea Grant's Education program coordinated and collaborated with the LSU College of Education and other partners to develop and disseminate oil spill educational materials, including a dozen lesson plans that can be incorporated into kindergarten through 12th grade math, science, social studies and language arts coursework. Workshops were held in the fall to train teachers on how to use the materials.

• Loss of income due to the oil spill created additional anxiety and stress among residents of impacted coastal communities. Similar stresses were witnessed during the Exxon Valdez spill. In conjunction with all four Gulf of Mexico Sea Grant programs, Extension and other SG personnel participated in peer listening training so they can better identify persons suffering from such stresses and refer them to appropriate healthcare providers. LSG made the training available online (*http://tinyurl.com/36c6rlz*).

• As part of the Great American Seafood Cookoff, three educational panel discussions were held Aug. 8. Participants of the first panel included national chefs discussing the perception of Louisiana and Gulf seafood. The second panel concerned seafood safety with participants from state and federal agencies such as the National Oceanic and Atmospheric Association, the Food and Drug Administration, Louisiana Sea Grant, and the Environmental Protection Agency discussing how seafood is currently being tested. The final panel included marketing and tourism professionals. Louisiana Sea Grant webcast all of the panel discussions (*http://tinyurl.com/2b56klp*).

Left: LSG Extension Agent Rusty Gaudé examines oil washed ashore on Grand Isle. Middle: LSU Food Science Specialist Lucina Lampila is interviewed by National Public Radio. Right: LSG statewide Fisheries Specialist Julie Anderson tested dispersant toxicity on juvenile blue crabs.

Louisiana Sea Grant-Funded Projects

Principal Investigator	Institition	Title
Dr. Caroline Taylor, Department of Ecology and Evolutionary Biology	Tulane University	Deepwater Horizon Oil Spill Effects on Blue Crab Recruitment
Dr. Laurie Anderson, Department of Geology and Geophysics	LSU	Changes in Coastal Food Webs Caused by the Deepwater Horizon Crude Oil Spill: Responses by and Effects on Oysters and Other Primary Consumers
Dr. Ralph Portier, School of the Coast and Environment	LSU	Microbial Species and Community Structure as Indicators of Oil Spill Recovery and Restoration: Initial Investigations
Dr. Martin O'Connell, Department of Earth and Environmental Sciences	UNO	Assessing Oil Spill Impacts on Juvenile Fishes, Crabs, and Shrimp at the Chandeleur Islands: A Comparison to Baseline Data
Dr. Kim de Mutsert, School of the Coast and Environment	LSU	Effects of the Deepwater Horizon Oil Spill on Growth and Mortality of *Fartantepenaeus aztecus* and *Callinectes sapidus* in an Affected Louisiana Estuary

Research Update

Landscape Architecture Projects Hone in on Coastal Sustainability

LSU's Robert Reich School of Landscape Architecture and Louisiana Sea Grant have partnered again to help two coastal communities.

In the first project, graduate and undergraduate students studying under Professor Bruce Sharky focused their efforts on finding a cost-effective and culturally acceptable solution to repairing a quarter-mile section of damaged levee that protects the City of Des Allemands in St. Charles Parish from Bayou Des Allemands. The parish erects temporary storm surge protection when needed, but parish officials are looking for a more permanent solution.

A proposal on the table before students became involved was constructing a flood wall. But the wall would cut the community off from neighboring waterways integral to the local economy, and it was cost prohibitive.

"Our principal objective was to look at ways of providing the protection residents need while still enabling them to have their cultural and traditional access to the bayou so they can continue fishing," Sharky said. His students recommended restoring area wetlands to serve as a storm surge buffer.

The students developed illustrative plans that depict a coordinated system of restored cypress forest and wetlands to protect the people, property and infrastructure in the parish. The designs also include a system of boardwalks, visitor access points and outdoor education facilities to encourage and enhance use of the bayou.

The complete report can be downloaded from *www.laseagrant.org/pdfs/Des_Allemands_Report.pdf*.

The students' second project involved developing new sport and recreational fishing opportunities on Cameron, St. Bernard and St. Tammany parish waterways badly damaged during the 2005 and 2008 hurricane seasons.

Sharky's team produced plans for boat launches and nature walks using small, remnant tracts of property in the parishes that have been idle since the hurricanes. Their designs provide examples of how, with a limited budget, a community can provide tourists and residents with access to local waterways and the coastal environment.

Their designs, which serve as demonstrations and are not for construction purposes, can be downloaded at *www.laseagrant.org/pdfs/RecFishingBoatingOpps.pdf*.

New Oyster Farming Technique Increases Productivity

A new oyster farming initiative has launched in the northern Gulf of Mexico.

The goal of this effort, a collaboration between researchers from Louisiana State University and Auburn University, is industry adoption of off-bottom oyster culture to supplement the traditional harvest. Historically, oysters are grown on and harvested from reefs on the water bottom. In this new process, oysters are grown suspended in the water column.

Benefits of this new oyster farming technique include increased productivity; job creation; and continued production of a safe, sustainable domestic oyster supply, according to John Supan, Louisiana Sea Grant and LSU AgCenter oyster specialist, and Bill Walton, Auburn University aquaculture and fisheries specialist. Off-bottom culture also protects oysters from predators, provides a means to reduce fouling and allows complete harvests of planted oyster seed – a major advantage over traditional oyster harvesting.

"This could be an important addition to a traditional coastal industry," said Walton. "It's clean, green and energy efficient. And it provides business opportunities to those already in the oyster industry as well as other coastal residents."

"Through proper planning, off-bottom culture can work in harmony with other water uses and users," added Supan. "It can support both part- and full-time incomes, just like natural fisheries, but with greater control over the natural variability that dominates bottom harvesting."

Although this program was developed prior to the Deepwater Horizon disaster, the oil spill prompted increased interest in oyster farming.

"We have received more calls and questions about oyster farming in the last four months than we have combined over the prior 12 months," said Walton. "The spill has created a window of opportunity where traditional oystermen are eager, even desperate, to find ways to get back to working on the water as soon as possible."

"Catastrophe causes change," added Supan. "The challenge is to direct change to improve conditions, not to settle for status quo. This project will attempt do just that."

Both the Auburn University Shellfish Laboratory on Dauphin Island, Ala., and the Sea Grant Bivalve Hatchery at the Louisiana Department of Wildlife and Fisheries (LDWF) Marine Research Laboratory on Grand Isle will provide oyster seed for this tri-state project. The project is funded through the Louisiana Sea Grant College Program and the Mississippi-Alabama Sea Grant Consortium by the National Sea Grant College Program's Aquaculture Extension and Technology Transfer Initiative, a national grant competition. LDWF's Fisheries Research Laboratory in Grand Isle provides research and hatchery space to researchers from Louisiana Sea Grant.

"Louisiana's oyster fishery has been hit with major natural and man-made disasters in the last five years, and has grown wiser for it," said LDWF Assistant Secretary Randy Pausina. "We are thrilled that Louisiana Sea Grant and researchers at Auburn University have worked so diligently to develop new methods for safeguarding and developing our oyster reefs along the coast. Our department is going to work side-by-side with the industry and researchers to help ensure the success of our oyster fishery."

A series of workshops are planned during 2011 and 2012 on the new technique, addressing issues such as appropriate culture systems, oyster seed stock, growing market-quality oysters and developing practices and regulations in collaboration with state agencies. For more information, contact Supan at *jsupan@lsu.edu* or Walton at *billwalton@auburn.edu*.

LSU graduate student Esther Young works with plastic mesh bags used to grow oysters in a new farming technique.