

# Coastal Clips

A quarterly  
publication of the  
Louisiana Sea Grant  
College Program at  
Louisiana State University,  
Baton Rouge

## Alternative Oyster Culture Anchoring System to be Tested

When many alternative oyster culture (AOC) operations on Grand Isle were damaged during the 2020 hurricane season, Louisiana State University (LSU) researchers and Louisiana Sea Grant (LSG) personnel thought they found a mechanism to help AOC farms defend against tropical storms.

With a \$75,000 grant from the National Sea Grant Program, the team hoped to determine what conditions – such as geology and variability of soil properties at different water depths – caused some AOC mooring systems to fail and some to endure the 2020 storms. AOC is when oysters are grown in floating cages or in bottom-placed cages attached to anchors. This method allows the cages to be raised and lowered to protect oysters from predators, fouling and ideally the effects of hazards like hurricanes.

The research team of Navid Jafari, assistant professor of civil and environmental engineering at LSU; Brian Callam, director of the Louisiana Sea Grant (LSG) Oyster Lab and Voisin Oyster Hatchery on Grand Isle; and Rusty Gaudé, LSG and LSU AgCenter marine extension agent, met with many Grand Isle oyster growers to learn about the mooring systems used and how they were installed before October 2020's Hurricane Zeta struck. However, what survived the earlier storms and Zeta did not survive Hurricane Ida in 2021.

AOC operators were knocked-back to square one with their businesses. And the research team – which had hoped to provide growers with mooring solutions by the beginning of the 2022 hurricane season – had no insights to share.

As luck would have it, Gaudé was able to find an opportunity in the catastrophe. Entergy Louisiana was upgrading its transmission structures from Leeville to Grand Isle and removing the industrial-strength anchors that helped keep those structures in place. Those old anchors were no longer needed. And when Gaudé learned of their existence, he asked Entergy to donate them for an AOC pilot project. With the cooperation of MG Dyess, a contactor for Entergy, the anchors were moved to a storage location on the island.

"As a company, we're only as strong as the communities we serve," said Phillip May, Entergy Louisiana president and CEO. "And environmental sustainability is a crucial factor in helping our communities thrive. When the opportunity presented itself to help AOC operations, it was an easy decision to make, and we were proud to partner with LSU on this endeavor."

The moorings typically used by AOC operators on Grand Isle are about four feet in height, said Gaudé. "Two men standing in the water could screw them into the water bottom. The donated Entergy anchors are much bigger and more robust. Although they have to be installed with hydraulic equipment operated from a barge, these experimental anchors should provide many times the degree of security.

"We all know there's additional expense to this type of installation. But what we hope the project will demonstrate is this type of mooring system will survive the meanest of hurricanes, so AOC businesses won't be completely wiped-out when a storm hits. The objective is to make these oyster growers more resilient and storm resistant and keep their infrastructure from becoming marine debris and a navigation hazard," Gaudé added.

The anchors donated by Entergy – which cost about \$183 each – will be installed soon at the two AOC parks operated by

*(Story continues inside)*



## **Anchors** Continued from cover

the Grand Isle Port Commission. This pilot project is to see how they fare throughout the 2022 hurricane season. Research results, which have application throughout the northern Gulf of Mexico, hopefully will provide AOC operators with rock-solid mooring recommendations by the start of the 2023 hurricane season.

"Building a more resilient Louisiana requires all of us to do our part," said May. "Just as Entergy is upgrading its infrastructure to better withstand more frequent and more powerful storms, our partners at LSU are doing the same for our coast."

*Pictured from left: Christian Gioia with Entergy Louisiana, Eric Langston with MG Dyess Inc., Louisiana Sea Grant and LSU AgCenter marine agent Rusty Gaudé, and Grand Isle Port Commission executive director Weldon Danos stand with one of the anchors donated by Entergy. Gaudé holds a failed anchor AOC operators have traditionally used in his left hand. With extension rods also donated by Entergy, the new anchors can be buried approximately 20 feet deep into the water bottom.*





## Seafood Demonstration Lab Opens

A seafood processing demonstration facility is on the horizon for Louisiana's commercial fishermen, courtesy of Louisiana Sea Grant (LSG) and the LSU AgCenter.

A building at the AgCenter's Iberia Research Station, 603 LSU Bridge Road in Jeanerette, is being renovated for fishermen and small seafood processors to receive hands-on training with a variety of processing equipment. A ribbon cutting was scheduled for July 19.

"This will be the first of its kind for seafood along the entire Gulf coast," said Thomas Hymel, LSG and AgCenter marine agent and director of the Louisiana Fisheries Forward program. "It's going to be phenomenal. It will offer mom-and-pop operators the opportunity to learn about how to get into the seafood processing business."

"We want to show people the equipment they can get, how their facility can look and what are the minimum federal and state requirements," said Evelyn Watts, LSG and AgCenter seafood technology specialist. "Our goal is to introduce local fishermen to commercializing their product in a cost-effective and federally compliant manner, ultimately bringing them more revenue."

Large vacuum packing machines, meat grinders, fish skinners, flake ice machines, nano ice machines and modified atmosphere packaging machines will be available for fishermen to learn to use. Additionally, safe seafood handling practices will be taught.

To learn more about the facility, Thomas can be reached at [thymel@agcenter.lsu.edu](mailto:thymel@agcenter.lsu.edu). Watts can be reached at [egwatts@agcenter.lsu.edu](mailto:egwatts@agcenter.lsu.edu).



Thomas Hymel and Evelyn Watts in the new seafood demo lab.

## Gulf of Mexico Conference Draws Crowd



If you had to sum-up the Gulf of Mexico Conference (GOMCON) in one word, it would be collaboration. With the support of 33 sponsors; more than 800 registered coastal scientists, managers and professionals; and hard work from Gulf of Mexico Alliance (GOMA) teams, the event was held in late spring in Baton Rouge. Amongst the multitude of presenters and volunteers at the conference were many Louisiana Sea Grant personnel. To experience a video overview of GOMCON 2022, visit [www.youtube.com/watch?v=4zIEs18xwjc](https://www.youtube.com/watch?v=4zIEs18xwjc).

## Browning Begins at Oyster Research Lab

Stephanie L. Browning is a new research associate at the Louisiana Sea Grant Oyster Research Lab and the Michael C. Voisin Oyster Hatchery on Grand Isle.

Browning earned her bachelor's degree in environmental studies, with a concentration in ecology and environmental assessment and a minor in biology, from Florida Gulf Coast University in Fort Myers. While attending, Browning was a research assistant studying Dermo – a parasite that thrives in oyster-populated waters – in the eastern oyster (*Crassostrea virginica*). In her role at LSG, Browning will be using her prior experience and formulating new methods and mitigation efforts to better control diseases and infections impacting bivalves.



Stephanie Browning

One of Browning's favorite quotes is by Doe Zantamata: "To sit in silence at the shore, watch the waves and hear the surf, is to appreciate the very breath and heartbeat of Earth."

## Sea Grant Engages K-12 Students in the Field

From the highly anticipated Wetlands Days series to a sensory-filled trip to the LSU Center for River Studies, Louisiana Sea Grant's (LSG) Education and Engagement (E/E) team continues to deliver engrossing academic experiences.

COVID-19 restrictions and hurricanes prevented K-12 students from having field trips the past two-plus years. It also prevented the Education and Engagement team from participating in school events. But the team persisted – knowing the value of hands-on, place-based learning – and they used their time to apply for grants to fund educational opportunities.

"There are already so many barriers to schools going on field trips – buses, lunches, substitutes, missed teaching hours, curriculum alignment – that we wanted to help eliminate as many of those as possible," said Dani DiIullo, director of LSG Education and Engagement. "That way, when students could participate in place-based learning again, we would be ready to help schools address some of those challenges."

Each workshop this past academic year was a unique collaboration between the E/E team and teachers from participating schools. Lesson plans were tailored to meet each school's needs and interests. This allowed students to actively learn from and in their environment. Schools from Plaquemines, Terrebonne, St. Bernard and Vermilion parishes participated in Wetland Days field trips close to their campus. Lessons included engrossing hikes, aquatic ecology, native vs. non-native species, sediment cores and water quality sampling.

"Wetland Days provided students an interactive science education that has often been absent in their educational experiences. Students are provided an opportunity to think about how the planet is changing and become stewards," stated Jennifer Cook, LSG education coordinator. "Some students were even able to hold a live baby alligator which was an experience they will not forget."

But not just Wetlands Days made a splash. Other fun and educational activities happened in East Baton Rouge.

Emily Maung-Douglass, LSG public engagement specialist, organized a field trip to Louisiana State University's (LSU) Center for River Studies for the Louisiana School for the Deaf and the Louisiana School for the Visually Impaired. To create a unique and sensory-focused educational experience, Maung-Douglass collaborated with members of the E/E team, the schools' teachers, as well as faculty and staff from LSU and the Center for River Studies.

"Most of the schools we've been working with either haven't had a field trip since COVID, or it is their first ever field trip, which made it more special



*Dani DiIullo, LSG Education and Engagement director, presents youths from the Louisiana schools of the deaf and visually impaired with a sensory-filled, 3-D model made of Play-Doh, depicting how the Mississippi River helped shape and form Louisiana. The field trip was to the LSU Center for River Studies in May.*

for us to deliver an unforgettable experience. Additionally, we know there are challenges such as accessibility issues for a lot of schools. Our team strives to create different, inclusive approaches that will bridge educational gaps," said Maung-Douglass.

"The school systems and the teachers saw their students make physical connections to what was taught in the classroom. By exposing students to the environment in this

manner, we showed them how everything is connected. Several of these schools have already asked us to come back next year," added Cook.

The E/E team consists of DiIullo, Cook, Maung-Douglass and community science liaison Liz McQuain. For more information about LSG Education and Engagement, contact Dani DiIullo at [ddiullo@lsu.edu](mailto:ddiullo@lsu.edu).

## Atchafalaya NERR Preferred Site



Gov. John Bel Edwards selected the Atchafalaya Coastal Basin as the preferred site in Louisiana to be added to the National Oceanic and Atmospheric Administration's (NOAA) National Estuarine Research Reserve (NERR) System. He also tasked the Coastal Protection and Restoration Authority (CPRA) to serve as the state's lead agency, working with continued support from Louisiana State University, for engaging with NOAA to complete the remaining steps to formally designate the Atchafalaya Coastal Basin as Louisiana's NERR.

NOAA's NERR sites serve as living laboratories for the study of estuaries and the natural and human changes that they experience. They host monitoring, training and educational activities that connect people to science while helping to build long-term relationships among local communities, state and federal agencies and other nongovernmental entities. Louisiana is currently the only marine coastal state in the country without a NERR.

"Louisiana's Atchafalaya Coastal Basin is going to be an outstanding addition to NOAA's NERR System," said Edwards. "From an environmental and scientific point of view, the Atchafalaya River Basin is the nation's largest freshwater swamp, and where it meets the Gulf of Mexico, there are two active, land-building river deltas and an extremely vibrant estuary. And, as everyone in Louisiana knows, the Atchafalaya Basin is home to a unique and cherished culture and history."

Edwards began the process of establishing a NERR in coastal Louisiana with a letter to NOAA in July 2019. Over 24 months, LSU and Louisiana Sea Grant assisted the state in evaluating three potential sites in the Atchafalaya, Barataria and Pontchartrain basins, engaging more than 70 volunteers across state and federal agencies, universities and nongovernmental organizations on four committees. In addition, nine public town hall meetings were held to engage stakeholders and letters of support were collected from a cross-section of public and private interests.

This summer, the executive committee, with members from CPRA, the Department of Natural Resources, the Governor's Office and the Department of Wildlife and Fisheries evaluated the proposals, heard presentations from each basin's team and reviewed the scoring from a screening committee before recommending the Atchafalaya Basin.

With the governor's selection of the Atchafalaya, a nomination packet was sent to NOAA containing more detail about the state's site selection process and other materials. If NOAA approves of the selection and adopts Louisiana into the NERR system, an environmental impact statement (EIS) and management plan will be drafted, followed by the executing of memorandums of understanding (MOUs) between NOAA and the state, the completion of a final EIS and management plan, a record of decision and finally a designation ceremony.

"The addition of Atchafalaya Basin to the NERR System provides Louisiana the opportunity to tell our story at the national level of the unique and spectacular environment and culture that a delta estuary represents compared to other estuaries in the nation and around the world," said Robert Twilley, chair of the Louisiana designation team. "This is a tribute to efforts of so many coastal champions over the past several years to finally see this NERR nomination accomplished under the leadership of Gov. Edwards."



## Daigle and Partners Receive Gulf Guardian Award

Melissa Daigle, Louisiana Sea Grant resiliency specialist, and partners recently received the Environmental Protection Agency (EPA) 2022 Gulf Guardian 2nd Place Partnership Award.

Daigle worked on the Resilience to Future Flooding project, led by Renee Collini at the Program for Local Adaptation to Climate Effects: Sea Level Rise (PLACE:SLR). The two-part project, which commenced in 2017 with funding from a NOAA Regional Coastal Resilience Grant and ended in January 2022, examined the northern Gulf region's communication and financial barriers toward sea-level rise resilience. Other partners on the project were the Northern Gulf of Mexico Sentinel Site Cooperative, the Gulf of Mexico Alliance, Mississippi-Alabama Sea Grant Consortium, Climate and Resilience Community of Practice, Dauphin Island Sea Lab, Mississippi Department of Marine Resources, Mississippi State University, and University of Florida Extension.

"It is important for local governments to think about ways to become more resilient whether their community is experiencing flooding due to sea level rise, an increase in flooding from storm surge or flash flooding. Communities can learn from what their neighbors along the Gulf coast are doing," said Daigle.

Communication barriers were addressed through several short films as well as case studies from coastal communities that have implemented projects to address flooding. "The videos are a great way to show local governments how other coastal communities have worked with limited resources to address issues related to flooding," she said.

The second part of the project – providing funds directly to five additional communities for projects to increase flood resiliency – began in early 2019. The community projects are in Alligator Point, FL; Apalachicola, FL; Biloxi, MS; Magnolia Springs, AL; and Santa Rosa County, FL. Those communities also captured their implementation process by creating video diaries, providing insight into the process in order to benefit other communities facing similar challenges.

"I hope other communities utilize the videos this project provided, and that they begin to strategize about ways to help their coastal communities despite barriers such as limited resources. The case studies and video diaries show that local governments can take action now to address future flood risk," Daigle said.

More details about the project, and all project videos, can be found on the PLACE:SLR website, <https://placeslr.org/>. PLACE:SLR is a partnership between the Mississippi-Alabama Sea Grant Consortium, Florida Sea Grant, National Oceanic and Atmospheric Administration and Mississippi State University Extension to support and enhance sea level rise resilience in the northern Gulf of Mexico.

The EPA Gulf of Mexico Division is a non-regulatory program of EPA established to facilitate collaborative actions to preserve the Gulf of Mexico's health, which promotes the region's economic well-being. The division initiated the Gulf Guardian Award in 2000 to celebrate the businesses, community groups, individuals and agencies taking positive steps to keep a healthy Gulf coast. There are five award categories: individual, business/industry, youth environmental education, civic/nonprofit organizations and partnership.



Melissa Daigle

## Sea Grant Agent Named Alumnus of the Year

Louisiana Sea Grant and LSU AgCenter marine extension agent Mark Shirley has been inducted into the Louisiana State University School of Renewable Natural Resources/Forestry, Wildlife and Fisheries Hall of Fame as Alumnus of the Year for 2022.

Nominations must be made by School of Renewable Natural Resources (RNR) faculty members, and all 28 RNR faculty members vote on the nominations. The Hall of Fame was re-established in 2007, and Shirley makes the 30th inductee since that time.

Shirley has served as a coastal resources extension agent since 1984, developing numerous education programs in the areas coastal ecology, fisheries biology and resource management. To parallel his adult outreach efforts, he founded the Marsh Maneuvers Coastal Education Camp in 1987. Since then, this program has expanded through various sponsors into a series of four-day camping sessions held each July. The program is now well-recognized as an intensive wetland odyssey featuring a range of educational activities related to coastal ecology, wetland loss and key social issues affecting the health and economic well-being of Louisiana's coastal communities, his nomination states

Shirley also is a highly respected communicator of coastal science and marine policy with adult audiences. As an aquaculture and fisheries extension specialist, his technical expertise on alligator and crawfish production has been extremely helpful to producers throughout Louisiana. He has served as secretary of the Louisiana Alligator Farmers Association for most of his career and has been instrumental in helping to build the political will and funding needed for an alligator research laboratory at the Ben Hur Aquaculture Research Station in Baton Rouge, the nomination added.

Shirley has been a contributing author of crawfish farming newsletters for more than two decades and has provided scientific advice and best practice recommendations to thousands of individual pond owners and coastal wetland managers. He has been a strong recruiter and supporter of RNR, as well collaborator on RNR funded research projects, the nomination concluded.

Shirley was inducted into the Hall of Fame in a May 19 ceremony.



Mark Shirley introduces third graders to a live alligator during a recent Wetland Days event.



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