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Coastal Clips

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Doggone Amazing – Fish Dogs

The Seafood Processing Demonstration Lab in Jeanerette is redefining the potential of underutilized species through the creation of "fish hotdogs".

The technical process of crafting these fish hotdogs is rigorous. It begins with raw protein sourced from buffalo fish and catfish mince, often recovered from the boney species or processing byproducts using specialized deboning machines. To achieve the correct "snap" and bite, the raw fish flesh must be super chilled and emulsified to form a smooth, stable protein paste. Once seasoned, the mixture is stuffed into cellulose casings to form the "dogs". The final steps involve cooking the product in a commercial meat smoker, followed immediately by an ice bath to stop the cooking process and lock in the texture.

"The beauty of these fish dogs is that we're taking species like buffalo and catfish that are often overlooked and turning them into something familiar and delicious," said Thomas Hymel, Louisiana Sea Grant and LSU AgCenter extension agent. "It's not as simple as just grinding up fish; you have to master the emulsion and the smoking process to get that perfect texture. But once people taste the final product, they realize the incredible potential we have here to add real value to Louisiana's freshwater catch."

Trout dogs are capturing a premium market on the West Coast, commanding high prices as a unique culinary novelty. "This represents another innovative concept with the potential to generate vital new revenue streams that directly support our state's commercial fishing industry," said Hymel.

The Seafood Processing Demonstration Lab serves as a vital bridge for local fishermen and small-scale processors, providing hands-on training to help them commercialize their catch while navigating complex food safety and federal compliance regulations. Managed by the LSU AgCenter and Louisiana Sea Grant, the lab uses commercial-grade equipment to transform low-value fish into high-quality, value-added products.

Promotions, New Hires at Louisiana Sea Grant

In recent months, Louisiana Sea Grant has welcomed several new staff members and one long-term staff member has taken on a new role. They are:

Courtney Bergeron is the Grand Isle oyster hatchery's water quality specialist. Bergeron hails from the south Louisiana town of Montegut where she grew up fishing, shrimping and crawfishing on her family's boat. She recently completed her Bachelor of Science degree in marine biology while studying at Nicholls State University in Thibodaux.

"Having grown up on the water, I've always felt a deep connection to it. Starting my career in oyster hatchery water quality is more than a job, it's a chance to give back to the environment that shaped me and protect the ecosystems I've loved my whole life," she said.

Bergeron will be responsible for monitoring and maintaining optimal water conditions to support the health and growth of oyster larvae and juveniles. The role is critical to sustaining hatchery success and supporting healthy coastal ecosystems.

Melissa Daigle, who served as a research attorney for Louisiana Sea Grant for 17 years, has become Louisiana Sea Grant's associate director. Daigle's new position will allow her to amplify LSG's work, assist the executive director and enhance staff development. Her responsibilities include overseeing annual reporting to the National Sea Grant Office, strategic planning and coordinating program development efforts.

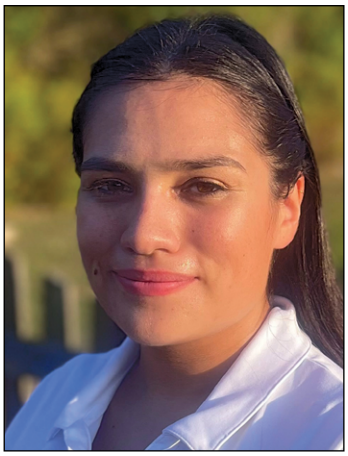
"While I greatly enjoyed my work as a research attorney, I am extremely interested in the bigger picture of Sea Grant and how our research, education and outreach impact people not only in Louisiana but also across the region and the country," Daigle said.

Folasade Elesho is the Grand Isle oyster hatchery manager. Elesho earned her PhD in aquaculture and fisheries from Wageningen University in the Netherlands, where her work focused on fish nutrition and applied aquaculture research. Prior to her doctoral studies, she worked as a lecturer in the Department of Fisheries and Aquaculture at the Federal University Oye-Ekiti Nigeria.

Before joining Sea Grant, Elesho worked in the research and development department for The Kingfish Co. in the Netherlands, researching early life-stages, sustainability reporting and supporting hatchery and grow-out operations for yellowtail kingfish.

"I am most excited about the opportunity to work directly with oyster hatchery production and applied research that benefits both the industry and coastal communities," Elesho said.

Elesho hopes to be a contributor to innovative hatchery practices, help strengthen research collaborations and support outreach efforts along the Gulf coast.



Gabriella Flores also joined Louisiana Sea Grant's Grand Isle oyster lab team. Originally from Milwaukee, Wisc., Flores earned a Bachelor of Science degree from Louisiana State University's College of Agriculture in agricultural extension education and evaluation, with a concentration in leadership and development and a minor in animal science.

Her career in aquaculture began as an undergraduate student worker at the hatchery, where she developed hands-on experience and a deep interest in oyster production. Now, she continues that journey full-time as a larvae specialist.

"I am honored to be part of the Louisiana Sea Grant and to work alongside dedicated individuals who were committed to preserving the Louisiana coastline and driving innovation in the world of aquaculture," Flores said.

Rikki Lynne Skelton is the sponsored research coordinator for Louisiana Sea Grant, where she will support the coordination and management of sponsored research projects and facilitate collaboration among interdisciplinary research teams. She earned a Bachelor of Science degree in biology with a minor in health from the University of Louisiana at Lafayette and a Master of Business Administration degree with a specialization in data analytics from Louisiana State University Shreveport.

"As lifelong resident of South Louisiana, I am excited to broaden my perspective on the coastal research that Louisiana Sea Grant supports," said Skelton.

To explore employment opportunities at Louisiana Sea Grant, visit

www.laseagrant.org/opportunities/employment.

Sea Grant
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2026-28 Research Projects Announced

Louisiana Sea Grant (LSG) is continuing to fund relevant research projects that address information gaps for coastal Louisiana communities and deal with the state's connection to water — from the Mississippi River to the coastal estuaries. For the 2026-2028 omnibus cycle, LSG will fund seven projects.

These projects were scheduled to begin in early 2026, subject to the availability of National Oceanic and Atmospheric Administration (NOAA) funding support. Below is a synopsis of the projects, along with a list of the investigators and their affiliations.

Kelly Boyle, assistant professor, Department of Biological Sciences, University of New Orleans
Title: *Spotted Seatrout Use of Essential Fish Habitat in Expanding Marshland Areas of Lower Breton Sound*

Spotted seatrout is a major part of Louisiana's recreational fishery. While currently over fished, this project hopes to determine several ways to maintain this species' numbers. Researchers aim to identify prime habitat in the Breton Sound, compare spotted seatrout populations across life-stages, and provide stakeholders with information to make better conservation decisions and better understand the value of the spotted seatrout.

Thomas DeCarlo, assistant professor, School of Science and Engineering, Tulane University
Title: *How to Save a Marsh: Effects of Oyster Reef Characteristics on Wave Dissipation and Shoreline Erosion*

Oyster reef restoration is a major nature-based solution for coastal restoration in Louisiana. To improve oyster reef restoration efforts, researchers seek to fill knowledge gaps in growth rates, sediment accumulation and erosion. Utilizing LiDAR and photogrammetry, researchers will develop digital elevation models (DEMs) of restored reefs. The DEMs will be able to quantify reef growth and changes in topography over time. The data collected will aid with reef restoration and project management decision making.

Eva Hillmann, instructor, Department of Biological Sciences, Southeastern Louisiana University
Title: *Scaling Up SAV Restoration: Seeding Techniques for the Pontchartrain Basin*

Submerged aquatic vegetation (SAV) helps to improve water quality and fish production. Unfortunately, SAV in the Pontchartrain Basin have decreased. This project aims to identify best SAV seed-based restoration methods in the basin. Two native species and multiple seeding methods will be tested to identify best cost-effective and replicable SAV restoration protocols.

Aixin Hou, professor, Department of Environmental Sciences, Louisiana State University
Title: *Mitigating Larval Mortality in Oyster Hatcheries: Harnessing Bacterial Predation for Sustainable Aquaculture*

Recurring *Vibrio* infections in oyster larvae are a challenge for hatcheries. Naturally occurring predatory bacteria like *Bdellovibrio* (BALOs) are a promising alternative to antibiotics for managing pathogenic bacterial strains such as *Vibrio* spp. This project will identify virulent *Vibrio* isolates, screen potent BALO strains and evaluate environmental effects on predation dynamics. Laboratory and hatchery-scale trials will determine effective BALO concentrations for controlling *Vibrio* in eastern oyster larvae.

Karuna Kharel, assistant professor, School of Nutrition and Food Sciences, LSU AgCenter
Title: *Ensuring Food Safety and Market Potential for Smoked and Canned Oysters from Louisiana's Coastal Fisheries*

Smoked and canned oysters are gaining popularity, but lack validated food safety protocols, raising concerns about *Clostridium botulinum*, a serious toxin. This project aims to validate microbial safety interventions for these products. Researchers plan to enhance the safety and adoption of vacuum-packaged smoked and canned oysters by optimizing dry brining parameters, validating time/temperature combinations for *C. botulinum* control and assessing consumer acceptance through sensory evaluations.

Yongcheol Lee, associate professor, College of Engineering, Louisiana State University
Title: *Modernizing Disaster Resilience and Mitigation Strategies of Coastal Communities with Urban Digital Twin Frameworks*

Louisiana's coastal communities face escalating risks from compound disasters, including storm surge, flooding, hurricanes and sea-level rise. This project aims to enhance the long-term disaster resilience of vulnerable coastal communities by developing a foundational, mathematical and digital model of urban environments. The proposed platform will function as a digital replica of a city or community, integrating real-time data to monitor, analyze and predict urban conditions for improved management and planning. Using Hurricane Ida as a baseline event, the project will develop a digital twin to evaluate the economic and transportation impacts on Port Fourchon and the community resilience of Grand Isle, while assessing the transferability of the framework to other vulnerable coastal communities.

Havalend Steinmuller, assistant professor, Louisiana Universities Marine Consortium
Title: *Linking Plant Genetic Structure to Biogeochemical Processes Across a Chronosequence of Engineered Marsh Terraces: Implications for Coastal Restoration*

Engineered marsh terrace fields are being created throughout coastal Louisiana as a habitat restoration strategy. Despite their widespread use, comprehensive long-term monitoring of marsh terraces is limited. To date, no studies have looked at the development of marsh community structure, soil development or the processes of nutrient cycling. This project aims to fill that knowledge gap by studying marsh terraces that range from two to nine years in age in the Terrebonne Basin and quantify the role the engineered terraces have had on creating marsh habitat.

2026 Undergraduate Research Projects Announced

This year the Louisiana Sea Grant College Program (LSG) is funding five Undergraduate Research Opportunities Program (UROP) projects. Established in 1992 to provide talented undergraduate students with hands-on research experience, LSG has funded more than 200 UROP projects.

Each UROP student will gain first-hand knowledge regarding the whole research process from design, implementation, analysis to conclusion. The hope is for students to present at relevant conferences and publish in peer-reviewed scientific journals. Projects receive funding up to $4,500. UROP applications are accepted each fall for projects starting the following March. Full-time undergraduate students at all Louisiana colleges and universities are eligible.

Kara Brady, McNeese State University
Faculty Advisor: Wen-Huai Tsao
Title: *Multi-Phase Modeling of Wave–Debris–Structure Interaction for Coastal Infrastructure Resilience in Louisiana*

Louisiana's coastal infrastructure, including bridges, ports and petrochemical facilities, faces critical threats from hurricane-driven debris that standard models fail to predict. This project, leveraging the Proteus open-source toolkit and the Cut Finite Element Method (CutFEM) for modeling moving boundaries, aims to develop a reliable, multi-phase and hydrodynamic framework to accurately simulate debris impacts with infrastructure. This initiative will provide essential predictive data for designing resilient infrastructure and enhance coastal defenses.

Kaylene Gohmann, McNeese State University
Faculty Advisor: Wen-Huai Tsao
Title: *Uncertainty Quantification of Wave Attenuation by Louisiana Mangrove Forests Using Multi-Fidelity Surrogate Models*

Louisiana's rapidly eroding coastline faces increasing threats from sea-level rise and storms, highlighting the potential of mangrove forests as vital living barriers for wave mitigation. The project's goal is not to construct a single, detailed model of one storm event, but to build a fast, reliable modeling system capable of exploring thousands of combinations of storms, water levels and mangrove conditions. By delivering rapid, trustworthy predictions, the modeling framework supports long-term resilience planning and can eventually be integrated into real-time hurricane response.

Maci Louque, University of Louisiana at Lafayette
Faculty Advisor: Emily Kane
Title: *Substrate Preferences of Blennies on Artificial Reefs*

Louisiana has one of the largest artificial reef programs in the world, part of an initiative to support the recreational fishing industry that has an economic impact of more than $1.3 billion annually. This project will examine substrate preferences of benthic blennies (*Scartella cristata*), a key prey species for recreationally important, pelagic piscivores. Researchers will investigate how specialized fin structures enable blennies to maintain their position on reefs during high-flow events like hurricanes. This analysis will look at assessing the resilience of this prey base and how it can serve as a vital indicator of long-term artificial reef stability and productivity, while also providing insights on types of materials suitable for artificial reefs.

Noah Rachal, University of Louisiana at Lafayette
Faculty Advisor: Sercan Aygun
Title: *A3H: Agentic AI for Aquatic Habitats – Autonomous Sensing and Decision-making for Water Ecosystems*

Constant changes along Louisiana's coast requires constant monitoring. In this project, researchers will develop a low-cost, low-power A3H (Agentic Artificial Intelligence for Aquatic Habitats) edge-based monitoring device that small-scale fishers, oyster farmers, crawfish and rice farmers, and coastal residents can use to track water conditions, near-by boat traffic and visible debris. The technology's initial deployment to collect training data will be in the Atchafalaya region.

Kristen Webster, Tulane University
Faculty Advisor: Sunshine Van Bael
Title: *Do Baldcypress Host Traits Shape Endosphere and Rhizosphere Bacteria?*

Baldcypress swamps in the Southeast U.S. are essential for carbon sequestration and coastal protection, yet the swamps are increasingly converting to open water due to altered hydrology and saltwater intrusion. This research will determine how host-level factors, such as genotype and root traits, influence the root-associated microbial communities that support tree stress tolerance. The study will help in the understanding of why some baldcypress lineages handle salt stress better than others.

2026 CSAP Research Projects Announced

Four students pursing master's degrees in the fall will be new participants in the Coastal Science Assistantship Program (CSAP), a partnership between the Louisiana Coastal Protection and Restoration Authority (CPRA) and Louisiana Sea Grant that provides graduate students with up to three years' financial support.

CSAP supports Master of Science students in science or engineering research relevant to Louisiana coastal protection efforts. This collaboration offers the dual benefit of engaging students in CPRA activities while potentially recruiting qualified personnel for the agency.

Louisiana Sea Grant administers these assistantships, available to all Louisiana university faculty to recruit outstanding students to coastal restoration-related research. Annually, up to four new students are chosen, based on the review of proposals, and awarded $30,000 each for up to three years. The latest projects are:

Quantifying Wetland Accretion and Change in Response to Storms through Statistical Analysis and Modeling
Student: To Be Determined (TBD)
Principal Investigator: Muriel Brückner; Louisiana State University (LSU), Department of Coastal and Ecological Engineering

Coastal marshes in the Mississippi River Delta are declining due to water movement patterns that affect sediment availability and erosion. Marsh growth depends on sediment supply, channel shape, water flow and plant density, as plants help trap sediment and slow erosion, though this effect varies seasonally. The research project aims to create a better understanding of long-term marsh growth by analyzing environmental factors, marsh characteristics and storm patterns, including hurricanes, using statistical methods and eco-morphodynamic modeling. This model simulates interactions among plants, water, sediment and land shape to provide understanding how marshes develop, change and survive over time.

Evaluating High Marsh Characteristics to Inform Restoration Design to Benefit the Threatened Eastern Black Rail
Student: TBD
PI: Erik Johnson; LSU School of Renewable Natural Resources

This project aims to protect the threatened eastern black rail (*Laterallus jamaicensis jamaicensis*) in Louisiana, where fewer than 70 breeding pairs remain, by improving and restoring its shrinking high marsh habitat which is threatened by sea level rise, storms and development. Using statistical models and point count data, researchers will identify key habitat features — such as elevation, landscape variation and soil characteristics — that differentiate where the birds can be found. The findings will guide marsh restoration and creation efforts under Louisiana's Coastal Master Plan to better support black rails and help reduce coastal land loss and storm damage.

The Decadal Sustainability of the West Bay Sediment Diversion from Source to Sink
Student: **Ros Visser**, LSU, Department of Geology and Geophysics

PI: Emily Wei; LSU, Department of Geology and Geophysics

To slow land loss in the Lower Mississippi Delta, coastal managers have used dredged material to build marshes and created small freshwater diversions, such as the West Bay Sediment Diversion, which have shown short-term success but uncertain long-term results. Although previous studies found that considerable amounts of sediment were retained nearshore a few years after the creation of the diversion, it is unknown whether these projects can support lasting land growth over decades, as storms can transport nearshore sediment offshore. This study aims to better understand how much sediment is retained in the nearshore of the West Bay Sediment Diversion and how much bypasses the area to the submarine delta. Researchers will focus on quantifying sediment deposited in the submarine delta using sediment cores and Chirp (a type of sonar system) sub-bottom geophysical data collected through the MissDelta Project. This study will help evaluate how effective the West Bay Sediment Diversion has been over time and improve understanding of the timescales of sediment retention and offshore transport.

Multi-Scale LiDAR Assessment of Aquatic Vegetation Geometry of Hydrodynamic and Morphodynamic Modeling in the Lower Mississippi River
Student: TBD
PI: Tian Zhao, Mead Allison; Tulane University, Department of River-Coastal Science and Engineering

Coastal erosion is a major issue for Louisiana, particularly in the Mississippi Delta region. Marsh vegetation can reduce water flow and facilitate sediment retention, helping to increase the sustainability of these fragile wetlands. Remote sensing technologies like drone-based and airborne LiDAR (Light Detection and Ranging) can map the three-dimensional structure of vegetation across large areas, measuring features such as canopy height, density and overall shape. By combining a 2022 airborne LiDAR survey of the Lower Mississippi River in southeastern Louisiana with higher-resolution drone data and ground observations, this project aims to create more detailed vegetation data for the Mississippi Delta region to improve model projections that can be utilized in coastal restoration planning and design.

Shrimp Grading Machine another Tool for Commercial Fishermen

One of the most time-consuming aspects in shrimp harvesting could be eased through mechanization, and a North Dakota company with ties to Louisiana's commercial crawfish industry hopes to aid in that process.

For more than 50 years, Kerian Machines Inc. has manufactured equipment for sorting fruits and vegetables. In the 1990s, they expanded with crawfish sorting machines. Now, they hope to assist the shrimp industry with the Kerian Speed Sizer.

Louisiana Sea Grant and LSU AgCenter extension agent Thomas Hymel and shrimper Lance Nacio approached James Kerian, president of Kerian Machines, about modifying their crawfish grading equipment to work with shrimp. The original speed sizer was on Nacio's boat, but there were issues, so they moved it from the boat to the dock.

James Kerian (left) and Lance Nacio

A prototype sizer was developed and successfully demonstrated in 2020 at the Louisiana Fisheries Forward Summit. During the topsy-turvy economy of the COVID-19 pandemic, Kerian continued to refine the machine, addressing issues like how to modify a sorter designed be used on land to be used aboard a shrimp boat, and reduce corrosion and rust from saltwater exposure.

Louisiana shrimper Clay "CJ" Theriot, who uses the grader, says it has been beyond helpful in his operation when catch sizes fluctuate. "Some-times the catch is large and sometimes it's not," he said. "We may not have enough hands to sort the catch, and that's where the grader comes in."

The current model can sort up to 3,400 pounds of shrimp per hour. This speed allows Theriot to grade his shrimp more efficiently in a market that requires a uniform size. This attracts more buyers who will pay a premium price. In Theriot's experience, the machine can process about 24,000 pounds in seven hours — work that would take days to complete manually.

The shrimp grader itself consists of a roller system where shrimp move forward and fall between gradually increasing gaps – allowing the shrimp to be sorted based on size. This grader can be adjusted to sort three different shrimp sizes.

"We have developed this project to the point where we can offer equipment that will sort shrimp quickly, accurately, gently and reliably — while providing a low-maintenance, rugged machine," said Kerian.

Kerian Machines is currently developing smaller units that will fit on the smaller, inshore vessels. It'll be made from aluminum, instead of stainless steel, and available at a more consumer-friendly price point.

"Prior to this machine, there wasn't a size sorter for head-on shrimp," said Hymel. "The industry is all about tails and peeled meat, but to be able to do direct marketing with a head-on shrimp, there really wasn't any equipment out there that could be used. This changes that."

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Fisheries Leadership Class 3

The third class of Louisiana Sea Grant's Fisheries Seafood Leadership Program (FSLP) recently graduated and applications for the fourth class will open soon. FSLP is a statewide initiative dedicated to strengthening leadership, communication and resource stewardship within Louisiana's commercial fishing and seafood industries. The program brings together a diverse cohort of harvesters, seafood professionals, educators, researchers and agency staff for a series of hands-on sessions held across coastal Louisiana.

Pictured from left are Jordan Poole, LSG extension agent; Jacqueline Richard, Nunez Community College; Julie Lively, LSG executive director; Lisa Tillman, Tillman's Seafood; Michaela Mayers, Louisiana Department of Wildlife and Fisheries (LDWF); Lacy Dardar, World's Finest Oysters; Julie Falgout, LSG seafood industry liaison; and Alec Scott Plaisance, LDWF.

To learn more about the program, visit *www.laseagrant.org/outreach/fslp*.