

Coastal Clips

Sea Grant

1968-2018



L O U I S I A N A

Louisiana Sea Grant Marks a Half Century

It was 86 degrees in Baton Rouge on July 1, 1968 – cooler than usual. The median monthly income of a family in the United States was \$719. A woman's haircut cost \$2.15. Gasoline averaged 34 cents per gallon. And with initial funding of \$198,000 from the federal government, Louisiana Sea Grant was born.

Two years earlier, Congress founded the National Sea Grant College Program which created a university-based system dedicated to the responsible development of the nation's coastal and marine resources through research, education and extension. Officials at Louisiana State University recognized this unique opportunity and pursued establishing a state program under that federal umbrella.

"I was asked if I would like to come back to LSU and help set the thing up," said Jack Van Lopik in a 2006 interview. "So, I came back from Texas Instruments ... on a two-year leave of absence (from TI) just to get the program started." Van Lopik, who earned his doctorate from LSU in 1955, ended up serving as Louisiana Sea Grant's executive director for 37 years – 1968 to 2005. He passed away in 2015.

One of the first hurdles in launching Louisiana Sea Grant was money. State programs had to match federal funds with in-kind services or cash. "Lots of people (were) involved from the standpoint of trying to get matching funds," said Van Lopik. "Hard cash matching ... was one thing that would certainly impress the federal people. So, we did a lot of talking with legislators. This was done not only by myself, but by people like the chancellor and (other) people that were involved at LSU at the time.

"Key people were Sammy Nunez, who was a (state) senator at that time. Then there was Conway LeBleu and Ed Scogin on the House side. They really carried the ball as far as getting coastal people ... to support the program."

But even with support from LSU administration and state and federal funding, there was no guarantee university researchers would buy-into the Sea Grant concept. It's multidisciplinary, applied research approach was not the norm.

"Sea Grant was across all different kinds of disciplines ... not only from the science and engineering part of the university, but also from the law center and sociology and economics ... trying an interdisciplinary approach to (solve) a lot of the problems in the coastal zone," said Van Lopik.

"Sea Grant was trying to get involvement of not just people in the academic community, but to get people from academia tied into real world problems, coastal zone management problems and things of that nature.

"You are trying to solve real world problems and trying to do things that are important at the local level.... If a business has a problem, they want it solved right away. They don't want somebody to say, 'Ok, we'll write a proposal, do a three-year study of it, and then provide you with the information'," Van Lopik added.

To read more of Louisiana Sea Grant origin story, visit www.laseagrant.org/2018/lsg-marks-half-century/.

Supan Announces Retirement

Research professor, oyster specialist and Louisiana Sea Grant (LSG) Oyster Research Lab director John Supan retired Dec. 31, 2017, after more than three decades with LSU.

Supan first began work with LSG in 1984 as an area fisheries agent for Sea Grant and the LSU AgCenter, serving St. Tammany, Orleans and Tangipahoa parishes. During 1990, Supan changed his career focus and became a research associate to begin working on his doctorate, while on loan to the first commercial oyster hatchery in the Gulf region, Gulf Shellfish Farms of Louisiana. There, he began a 28-year part-time residency on Grand Isle, while managing the oyster hatchery and training oystermen to utilize oyster larvae for remote setting techniques to produce their own seed oysters in order to become less dependent on the public oyster grounds, where production had dwindled due to drought conditions and saltwater intrusion.

When wild seed production rebounded, the commercial venture folded and LSG acquired the facility. The repurposed Gulf Shellfish Farms became the Sea Grant Oyster Hatchery with Supan at the helm by 1993.

During his tenure as director of the hatchery, Supan's research focused primarily on developing triploid oysters. Triploid oysters — named such because they have three sets of chromosomes rather than two typically found in wild oysters — have higher summertime meat yields. They are also sexually sterile, which

means they don't expend energy during the summer months spawning. The result is an oyster that grows faster and remains fatter throughout the summer when wild oysters are typically thin and watery.

"It's been a long career helping all of this happen," Supan said. "My long-term goal for the (oyster) program was always commercialization, and now we have commercial triploid farms all across the Gulf."

In 2003, Supan began proposing the concept of oyster aquaculture parks in Louisiana's coastal waters. He assisted the passage of state legislation in 2012 and 2017 creating policies for the use of the water column and surface over existing oyster leases for off-bottom oyster farming zones. Eventually, this led to the establishment of the Grand Isle Oyster Farming Zone administered by the Grand Isle Port Commission.

"I don't know that I could've possibly had a better career than I've had at Louisiana Sea



Grant," he said. "And I won't be leaving the oyster world at all, I just won't be in Grand Isle as much."

Despite humble beginnings working under an old boat shed for 18 years, saving his program from 16 named tropical storms, two catastrophic (Andrew and Katrina), and a historic oil spill, he said "I am equally proud of the hundreds of individuals I have trained in both hatchery operations, site and gear selection and farm management. The general field of coastal aquaculture, and in particular oyster farming, will continue to see aggressive support by state, regional and federal sources to help coastal residents transition their livelihoods to our ever-changing coast."

Louisiana Sea Grant Book Wins State Award

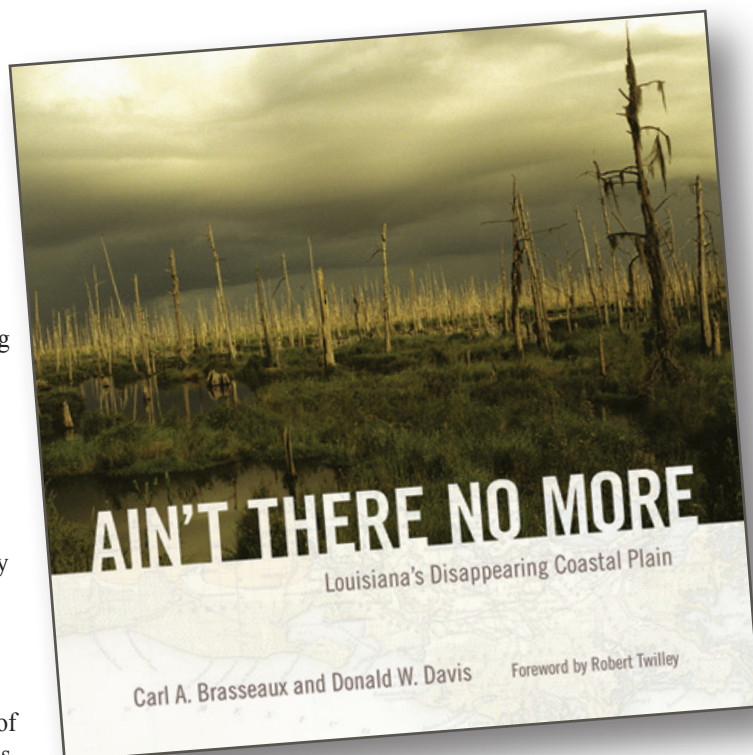
This year's Louisiana Literary Award winner is *Ain't There No More: Louisiana's Disappearing Coastal Plain* by Louisiana Sea Grant Scholars Carl A. Brasseaux and Donald W. Davis.

In an effort to put a human face on an ecological disaster, their book chronicles the economic history of coastal Louisiana and its people. The well-chosen photographs complement the text and support the authors' thesis that this landscape, rather than being "worthless" swamp land, has always been an important contributor to the economic engine of the state and nation. As such, the people living in the region deserve to have a voice when deciding how to fix the problems caused by coastal erosion.

The Louisiana Literary Award, which consists of a bronze plaque and a check for \$250, was presented to professors Brasseaux and Davis at an awards ceremony on March 9 as part of the Louisiana Library Association's Annual Conference at the Alexandria Convention Center.

Ain't There No More: Louisiana's Disappearing Coastal Plain is part of Louisiana Sea Grant's Third Coast Book Series published by the University Press of Mississippi. Books in the series can be purchased at www.upress.state.ms.us.

The Louisiana Literary Award Committee of the Louisiana Library Association is charged with promoting interest in books related to Louisiana, encouraging their publication and keeping librarians informed on the release of such books. To that end, each year the committee selects a noteworthy book as the recipient of the Louisiana Literary Award. In order to be considered, a book's subject must be related to Louisiana and it must be published in the year prior to receiving the award. The committee evaluates books on the basis of their merit, treatment of Louisiana life, interpretation of Louisiana heritage and possible value to the permanent record of the state.



2018 UROP Projects Announced

This year the Louisiana Sea Grant (LSG) College Program will fund nine Undergraduate Research Opportunities Program (UROP) projects. Established in 1992 to provide talented undergraduate students with hands-on research experience, it has funded more than 175 projects.

"The UROP program has served as a gateway to the world of research for many students," said Matt Bethel, LSG associate executive director for research. "Participating in the program allows them to be involved in the scientific process, it increases their competitiveness if they choose to pursue graduate school and encourages them to consider future careers in coastal sciences."

Each UROP student experiences the whole research process. They help prepare a proposal, conduct research, produce a final report and present their findings. UROP students also submit abstracts of their research to present at coastal-related conferences, both in Louisiana and beyond. Students are further encouraged to publish in peer-reviewed scientific journals.

To support these advanced studies in marine-related disciplines, projects receive funding up to \$3,000. UROP applications are accepted each fall for projects starting the following March. Full-time undergraduate students at all Louisiana colleges and universities are eligible.

The following students were selected for 2018:



Cameron Belding, biology major, Nicholls State University (NSU)
Faculty Advisor: Ramaraj Boopathy, NSU
Department of Biological Sciences
Use of Microbial Biofertilizers in Coastal Restoration of Wetland Plants in Southeast Louisiana

Some soil microbes called plant growth-promoting rhizobacteria (PGPR) enhance plant growth, but previous studies focused on crop plants. Belding will see which bacterial communities enhance growth of the coastal grass, *Spartina alterniflora*. This research will be useful for restoration projects where biofertilizer use could produce healthier plants while also increasing soil health.



Joshua Cobar, Chemical Engineering major, Louisiana State University (LSU)
Faculty Advisor: Evelyn Watts, LSU AgCenter
Black Drum Shelf Life Comparing Three Packaging Technologies

Seafood is important to Louisiana; it's the second largest commodity in the state by value. Cobar will investigate ways to better preserve and package one of the state's main fish products – black drum. He will evaluate shelf life and quality of black drum using three different packaging technologies.



Ean Hill, Coastal Environmental Sciences major, LSU
Faculty Advisor: John White, LSU
A Wetland Carbon Inventory for Coastal Louisiana: Implications for Climate Change and Carbon Credits

Hill will dig through 6,000 soil samples from Louisiana Coast-wide Reference Monitoring System stations to measure organic carbon content. With this information, he'll see how wetland organic matter is converted into organic carbon. Understanding this relationship is invaluable to the state, as it could reduce monitoring costs over time.



Olivia Hunt, Civil Engineering major, LSU
Faculty Advisor: Michele Barbato, LSU
Evaluation of Lightweight Gypsum-based Materials for Oyster Reef Reconstruction and Coastal Protection

Gypsum-based materials are currently not used in underwater construction. A novel gypsum-based blend could prove valuable for construction of coastal protection structures and artificial reefs in southern Louisiana. Hunt will work on a pioneering study of the mechanical and physical properties of high-strength, lightweight, gypsum-based blends for artificial reef construction.

(Continued on next page)

Fisheries Summit 2018 a Success

Approximately 500 fishers, seafood processors and dock workers got information on the latest technology in their industry at the Louisiana Fisheries Forward Summit held at the Pontchartrain Center in Kenner on March 6.

"This is a summit that's designed for fishermen," said LSU AgCenter instructor and Louisiana Sea Grant associate Pam Hodson. "We have everything for the industry represented here, from machinery to get their equipment tuned up and ready to go to GPS and the basics of micro-processing and packaging."

"The impact that seafood has on the state is huge," said Lt. Gov. Billy Nungesser, who was in attendance. "It's a way of life for so many generations, and it plays into the ecotourism effort the state ... I grew up in the seafood industry, and it's the backbone of the state of Louisiana."

In addition to presentations, cooking demonstrations were conducted at the Summit by a number of restaurants and the John Folse Culinary Institute at Nicholls State University.





Jennifer Lamori, Environmental Health major, Tulane University (TU)
Faculty Advisor: Samendra Sherchan, TU
*Occurrence of *Naegleria fowleri* in Sediments from Lake Pontchartrain, Louisiana*

Naegleria fowleri is a free-living amoeba that causes primary meningoencephalitis, which can be fatal. Lamori will study the occurrence, quantity and survival of *N. fowleri* in Lake Pontchartrain sediments, in the hopes of developing guidance for state and federal regulatory agencies on protection of state water supplies.



Lauren Little, Biology major, LSU
Faculty Advisor: Fernando Galvez, LSU
Susceptibility of Crude Oil Exposed Gulf Killifish to a Marine Bacterial Infection

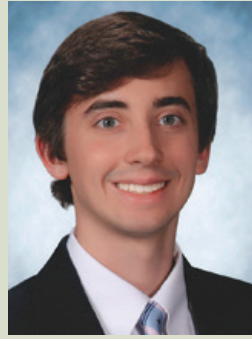
Little will assess immune function and disease resistance in adult Gulf killifish with varying exposure histories to Macondo oil. Using different populations of killifish exposed to oil in the laboratory, she will determine the effects of embryonic oiling later in life and the effects of parental oiling on immune function in offspring.



Steven Medina, Ecology and Evolutionary Biology major, TU
Faculty Advisor: Sunshine van Bael, TU
Bald Cypress Microbial Communities under Flooding and Drought Stress

Medina will study how bacteria and fungi in the roots of baldcypress influence the trees' resilience to flooding and drought conditions. His experiments will reveal how plant microbiome changes with hydrological stress, which is important information considering many restoration projects involve the

planting of baldcypress trees.



Logan Betzer, Civil Engineering major, LSU
Faculty Advisor: Navid Jafari, LSU
Continuous Monitoring and Analysis of Marsh Shoreline Evolution to Understand Erosion Mechanisms

The rate of erosion at the marsh edge is vital for predicting the marsh longevity. In his research, he seeks to develop a robust marsh edge erosion model that incorporates hydrodynamic, soil and vegetation properties. This information would lead to improved coastal restoration and management efforts across the state.



David Thomas, Biochemistry major, LSU
Faculty Advisor: Terrence Tiersch, LSU AgCenter
3-D Printing of Cryopreservation Devices for Standardization and Commercialization of Genetic Resources in Aquatic Species

Thomas will create and test devices using three-dimensional (3-D) printing, with the aim of improving freezing rates for cryopreservation of aquatic species. Cryopreservation is useful for conservation of endangered species, improvement of farmed species and management of wild populations subject to genetic change.

Louisiana Sea Grant Examines History and Options of Coastal Access Conflict

A new report from the Louisiana Sea Grant (LSG) College Program examines the growing conflict over public and private access claims to the state's coastal waters.

The report, *Preliminary Options for Establishing Recreational Servitudes for Aquatic Access over Private Water Bottoms*, was completed in early March. The document emanates from a 2017 legislative mandate (HR 178) that directed LSG to study and make recommendations on recreational access in coastal waterways. This ongoing conflict is primarily between private landowners and recreational fishermen, and it involves disputes over what water areas are re considered private and what water areas are open for public access. Jim Wilkins, Professor and Director of the Law and Policy Program, served as lead author of the study. "The coastal access conflict has been with us since the early 1970s" said Wilkins, "...but it has really ramped up in recent years."

A guiding principle imposed by the 2017 study resolution was to limit the analysis to voluntary actions that would not impinge on individual property rights or impede commerce. In preparing the study, LSG convened stakeholder meetings with fishermen, landowners and state agencies to hear concerns and identify potential options.

The final report provides a general overview of the context, history and drivers of the coastal access issue; describes the process utilized for soliciting stakeholder input; and details economic and legal considerations for ten preliminary options that could be used to partially mitigate this conflict. LSG does not oppose nor endorse any of the options, said Wilkins, who describes the report as a compilation of "suggestions that stakeholders and policymakers can use in future discussions of possible solutions."

A full copy of the report and a list of frequently asked questions is available online at: www.laseagrant.org/sglegal/publications/other/.



The Louisiana Fisheries Forward Summit covered everything from hydraulics to cooking demonstrations.

Delcambre Direct Goes Digital

The Port of Delcambre and Louisiana Direct Seafood (LDS) have partnered to take Delcambre's monthly seafood and farmers' market offerings from the dock to web browsers this summer. A variety of seafood items for consumers to purchase from the comfort of their homes will be available to the public through www.delcambremarket.org as early as May 2018.

"During the markets, we'd always get asked 'Do you ship? Can I purchase it here and have you ship it to my family in Virginia?'" said Thomas Hymel, Louisiana Sea Grant and LSU AgCenter Extension agent and LDS project director. "It's been an ongoing trend in the food industry to get seafood directly from the processor – an extension of the 'farm to table' movement. We offer the highest quality product which is certified authentic Louisiana seafood."

Naturally, the next step was to place those offerings online.

The website will start with standard Louisiana seafood offerings, such as peeled shrimp, black drum and crab meat. Everything sold will be packaged frozen for shipping. The inventory will be updated with more unique and diverse seafood options over time.

Louisiana Direct Seafood is a partnership between Louisiana Sea Grant and the LSU AgCenter, funded by the Louisiana Office of Community Development and the Gulf States Marine Fisheries Council. The program's primary mission is to help coastal fishermen connect with consumers and build community support for fresh, wild-caught seafood products. As a statewide entity, the program has built partnerships in Delcambre, Cameron, Terrebonne and Lafourche parishes.



Decambre Farmers Market

Message from the Executive Director

The words below were penned by Louisiana Sea Grant's first director, Jack Van Lopik, as he reflected on the first 25 years of our program's accomplishment. Now, looking back on 50 years of achievements, it is fascinating to see how LSG continues to be at the forefront of addressing so many ongoing and new issues facing Louisiana and its coastal communities. We are proud to have been a resource to our state for the past half century and plan to be here for 50 years more.



Robert Twilley
Louisiana Sea Grant Executive Director

Highlighting (Louisiana Sea Grant) selected accomplishments of the past, it is convenient to think in terms of contributions to higher education, human resources development, government and the private sector.

Sea Grant was instrumental in establishment and development of LSU's M.S. and Ph.D. programs in marine science, and also played a key role in the creating and nurturing of LSU research groups (such as) the Coastal Ecology Institute, the National Ports and Waterways Institute, the Coastal Fisheries Institute and the Wetland Biogeochemistry Institute.... Every Sea Grant dollar invested in their development has brought a three-for-one return to the university – and to the State of Louisiana.

Sea Grant actively participated in the formation of the Louisiana Universities Marine Consortium ... and has funded LUMCON researchers in a variety of projects to elucidate the scientific understanding of complex coastal and marine processes. Besides research at LSU and LUMCON, Sea Grant has also supported studies by faculty members at the University of Southwestern Louisiana, the University of New Orleans, Nicholls State University, Southeastern Louisiana University, Northwestern State University, Southern University and Tulane University.

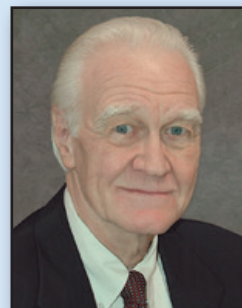
The results of Sea Grant research contributed significantly to the development of Louisiana's initial Coastal Zone Management Plan; the environmental protection plan for Louisiana Offshore Oil Port; the Breaux-Johnson Coastal Planning, Protection and Restoration Act; and the Louisiana Rigs-to-Reefs Program.

Sea Grant's Marine Advisory Service has worked with seafood processors to improve plant sanitation and insure good product quality. In other Sea Grant advisory projects, coastal communities were assisted in developing their recreation and tourism potential as a means of economic diversification and growth, and the Ports Association of Louisiana was formed for mutual economic benefit.

Former Louisiana Sea Grant employees and students have served as secretaries of the Louisiana Department of Environmental Quality and the Louisiana Department of Wildlife and Fisheries, and as directors of Sea Grant programs in South Carolina and Puerto Rico.

Louisiana Sea Grant will continue as a mechanism for marshaling university resources to address the changing environmental and economic needs of the state's coast. It is and will continue to be a window to the academic community, a developer of academic resources, a facilitator, an educator, a funding source for researchers and a catalyst for economic development – functions designed to connect universities to the real world.

Jack Van Lopik
Louisiana Sea Grant Executive Director
1968-2005



Excerpts from a column written by Van Lopik for the 25th anniversary of Louisiana Sea Grant – Coast & Sea magazine, winter/spring 1994. Louisiana Sea Grant celebrates its 50th anniversary in 2018.



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Louisiana Sea Grant and LSU AgCenter Extension agent Thu Bui (center, holding award) received special recognition from the U.S. Coast Guard Marine Safety Unit-Morgan City on Tuesday, Dec. 19, for her assistance as a Vietnamese translator during an October search and rescue operation/investigation. Also pictured are: (from left) Lt. Mary Gilday, senior investigations officer USCG; Harry March, commercial fishing vessel examiner; Mark Shirley, Louisiana Sea Grant and LSU AgCenter Extension agent; Cdr. Heather R. Mattern, commanding officer Marine Safety Unit USCG-Morgan City; and Lt. Ximena Johnson, investigations officer USCG.