

Eating Away at an Aquatic Invasive

Since first being discovered in the Toledo Bend Reservoir during the late 1990s, giant salvinia (*Salvinia molesta*) has spread – most likely from plant fragments on boats and trailers moved from waterbody to waterbody – across coastal parishes. This aquatic weed can completely cover waterways robbing native plants, fish, insects and other species of sunlight and oxygen.

“For anyone who has to work in the marsh or use boat trails for transportation, giant salvinia is a problem,” said Louisiana Sea Grant and LSU AgCenter Marine Extension agent Kevin Savoie, who has been on the forefront of salvinia management for nearly 16 years. “It chokes native aquatic plants that are a food source for waterfowl and other species. Duck hunters and alligator harvesters struggle to get their boats through it.” Agents with the Louisiana Department of Wildlife and Fisheries (LDWF) say that there are areas where the salvinia is so thick it can support a man’s weight.

In Cameron Parish, LSU entomologist Rodrigo Diaz is conducting research on how to control the invasive weed. Herbicides often are used to manage the salvinia, but they have a financial as well as environmental cost. “A biological control method is needed,” said Diaz. That biological control could be a weevil Diaz is researching – *Cyrtobagous salviniae*. The weevil larva feed on the plant, stunting the salvinia’s growth and causing it to sink.

Since spring 2016, Diaz and Savoie have monitored the impact of the salvinia weevil at several Cameron Parish sites owned by the Miami Corporation. Several years ago, weevils from the LSU AgCenter nursery were introduced at specific locations on Miami Corporation property and now the objective is to quantify the weevil density and damage to giant salvinia.

“The weevils have been doing their job,” said Savoie. “As salvinia begins to grow and spread, the weevils feed and the salvinia disappears. The weevils also move with the growing stands of salvinia, reducing the biomass of the stand and its impact.”

“Conditions this year have been ideal,” said Diaz. “We’re looking for what triggers weevil population growth and how quickly the salvinia comes back. Once we know, we can tell resource managers how effective the weevils will be under certain conditions and how patient to be. This natural control will be able to save land owners money on herbicides and manpower.”

LDWF is funding Diaz’s research.

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Under ideal conditions, a single giant salvinia can multiply to cover 40 square miles in only three months. Weevils (above) that feed on the plant are one way to keep salvinia in check. At a test area in Creole (background photo), weevils destroyed a salvinia infestation (turning it brown) and allowed the waterway to reopen.

New Louisiana Sea Grant Staff Strive for Community Engagement

Louisiana Sea Grant welcomed two new staff members to the organization this summer. Dani DiIullo joined the team as the new communications coordinator and Niki Pace continues her Sea Grant legal career as the new sustainability coordinator.

Prior to joining Sea Grant, DiIullo conducted outreach with numerous conservation organizations, universities and institutions across the country and internationally. “Having moved around for over a decade, I have become familiar with a lot of issues facing coastal communities,” she said. “I’ve worked on outreach programs in North Carolina, South Carolina, Florida and California. These experiences have helped me to stay connected with the public and attuned to their concerns.”



Dani DiIullo

DiIullo earned her master’s degree in marine biodiversity and conservation from the Scripps Institution for Oceanography. She completed her undergraduate studies in 2004 at Davidson College, where she majored in biology and economics.

In her new position, DiIullo is eager to connect coastal residents with current research efforts and vice versa. “Often times I find that there are very creative, resilient people who develop solutions equal to those thought up at institutions. This community knowledge is extremely important, and I look forward to what coastal Louisiana has to teach.”

No stranger to the Sea Grant Law and Policy Program, Pace joins the Louisiana team after seven years as senior research counsel with Mississippi-Alabama Sea Grant. While there she was immersed in the legal issues associated with the Gulf of Mexico including climate change, sustainable development and disaster response and preparedness. Pace also was a professor at the University of Mississippi School of Law.



Niki Pace

Pace holds a B.S. in geology from the University of Southern Mississippi and both a J.D. and an advanced LL.M. from Lewis and Clark Law School, where she focused on environmental and natural resources. She is also a nationally certified Flood Plain Manager.

Originally from south Mississippi, Pace is eager to continue working alongside Gulf communities. “Louisiana feels like home. The whole state has a coastal interest,” she said on her move to Baton Rouge. “I look forward to working on coastal resilience in a state where it is critical.”

In particular, she will focus on living shorelines – a field so specialized that few attorneys work there. “Defining a living shoreline can be tricky. Determining what is natural and what isn’t, no one can agree.” Pace literally helped write the book on permitting and legal issues with regard to living shorelines. *Living Shorelines: The Science and Management of Nature-based Coastal Protection* is set to be published in 2017.

LSU Research Associate, Tulane Grad Student Named 2017 Knauss Fellows

Next year, the Louisiana Sea Grant College Program will have two Knauss Fellows in Washington D.C. Alvaro Armas, a Louisiana State University research associate and recent LSU Master of Public Administration graduate, and Sarah Giltz, a Ph.D candidate from Tulane University, will be joining the 2017 class of Sea Grant Knauss Fellows in February.

The Knauss Fellowship, sponsored by the National Sea Grant College Program, provides a unique educational experience to students with an interest in ocean and coastal resources and national policy affecting those resources. The program matches graduate students with hosts in federal legislative or executive branch offices for one year.



Alvaro Armas

The candidates share many parallels, having worked extensively with local species along the Louisiana coast. Armas continues to work with fisheries and aquaculture since completing research on tilapia at LSU. Giltz is completing work examining the effects of ocean acidification and oil exposure on juvenile blue crabs. Both candidates have collaborated internationally and examined impacts from the Deepwater Horizon Oil Spill. In addition, both candidates will be hosted by the executive branch next year.

Armas was awarded an undergraduate Fulbright Scholarship, and upon completion returned to his native Nicaragua where he worked with the Ministry of Fisheries. For over the last decade he has been at LSU, first as a graduate student then as a researcher. Despite all his collaborations, he still cites his work on the response team after the oil spill as his most relevant career experience. He hopes to use this and other experiences “for

the bettering of those communities affected by natural and anthropogenic factors in the southern United States.” Armas holds three master’s degrees, one in fisheries, one in aquaculture and one in public administration recently completed in May.

Giltz has participated in research from the tropics to the poles, working in the Antarctic



Sarah Giltz

Peninsula, Iceland and Panama, and currently pursuing her graduate work at Tulane. The 2010 oil spill had impacts on both her research and her outlook. “Marine policy work appeals to me in part due to its dynamic nature with issues of importance shifting due to new information and events,” Giltz states. “It continues to motivate my activities with a focus on fisheries, coastal management and science communication.”

In addition to working with numerous groups in New Orleans, Giltz writes and edits for the marine science blog Oceanbites.

LADIA Faculty Fellows Selected



Carol Wilson,
LSU,
Department of
Geology and
Geophysics



Carol Friedland,
Louisiana State University
(LSU), Bert S. Turner
Department of Construction
Management



Tamjidul Hoque,
University of New
Orleans, Department
of Computer Science



Beth Stauffer,
ULL,
Department of
Biology

Louisiana Sea Grant has selected 11 tenure-track faculty from four university campuses as 2016 LA DIA Fellows. Louisiana Discovery-Integration-Application (LA DIA) Fellows will receive training from national experts in science communication and outreach, broaden their knowledge of coastal concerns and connect with community leaders over the course of three workshops during the 2016-17 academic year.



Navid Jafari,
LSU, Department
of Civil and
Environmental
Engineering



Liz Skilton,
ULL,
Department of
History, Geography
and Philosophy

Not pictured:
Achim Herrmann,
LSU,
Department of Geology
and Geophysics



Morgan
Kelly, LSU,
Department of
Biology



Aaron Pierce,
Nichols State
University, Department
of Biological Sciences

James Nelson,
University of Louisiana at
Lafayette (ULL),
Department of Biology



Kanchan Maiti,
LSU, Department of
Oceanography and
Coastal Sciences

In 2014, LA DIA's pilot year, four fellows received communication training and worked directly with LSG Extension agents who served as outreach mentors. Fellows explored specific outreach objectives in coastal communities and provided their assessments of how to connect researchers with community residents.

In 2015, 11 tenure-track faculty from five university campuses were selected as LA DIA fellows.

To learn more about the 2016 LA DIA Fellows, visit

www.laseagrant.org/outreach/ladia/fellowships/fellows/2016-fellows

Gulf Pogies Could Become Pacific Fisheries Bait for Native American Nation

Gulf of Mexico menhaden – known as pogies – are finding their way into Northwest Pacific waters as a possible alternative bait for the commercial dungeness crab fishery.

Through the efforts of the Louisiana and Washington Sea Grant programs, Louisiana Bait Products Inc. of Abbeville connected with the Lummi Nation, a Puget Sound Native American tribe near Bellingham, Wash. Many Lummi harvest dungeness crab commercially but the cost of their traditional baits – squid and salmon carcasses – have been rising.

“They’re looking for a more economical option,” said Pete Granger, Washington Sea Grant seafood industry specialist. “Bait is a big part of Lummi fishermen’s budgets.”

This summer, 2,000 pounds of menhaden (*Brevoortia patronus*) were shipped nearly 2,700 miles from Louisiana Bait to the Lummi for testing. “The pogies are individually frozen,” said Thomas Hymel, Louisiana Sea Grant and LSU AgCenter Extension agent. “So you can reach in and pull out one at a time. That reduces the waste you might get if they were frozen in a block.”

“Only a small amount of the menhaden has been used, so far,” said Granger. “The fishermen discovered they work. But what we don’t know is if they’re better, worse or about the same as traditional baits in attracting crab. That testing hasn’t occurred, yet.”

If additional field tests show Gulf menhaden work as well – if not better – than traditional baits, there’s the potential of opening new

markets to Louisiana bait suppliers while reducing Pacific commercial fishermen’s operating costs.

The Gulf menhaden fishery is one of the largest in the United States. They are harvested primarily for fish meal and fish oil based products. But a small percentage of the harvest is caught for use as bait.

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Pete Granger can be reached at pgranger@uw.edu



Louisiana Sea Grant fisheries specialist Julie Anderson Lively displays a frozen menhaden.

Workshop Demonstrates Economic Benefits of Small-batch Seafood Processing

More than two dozen fishermen and other seafood industry members attended the Seafood Value-Added Micro Processor Workshop in July. The event was designed to explain new ways to sell Louisiana seafood, with a focus on the freezing, packaging and marketing of raw product in a manner requiring basic equipment and facilities. Topics included: facility requirements, business and finance basics, marketing case studies and ways the food incubator can help.

“Even though the majority of workshop participants are part of the shrimping fishery, we also had those in the crabbing, fin fish and oyster groups attend,” said Anne Dugas, Louisiana Fisheries Forward coordinator. “There were folks who are experienced in selling their fresh product direct to the customer, with some owning and operating docks and/or retail seafood shops. Some still sell the majority of their catch directly to the dock but are looking for a new business model. Several of the participants are already ahead of the game with a licensed micro-processing facility, a product brand and several types of products currently in production.”

Additional workshops and events are scheduled in the coming months for commercial fishermen, docks and processors. A list of events can be found at www.lafisheriesforward.org.

Workshop participants inspect vacuum packaged seafood.



Crabs caught by Lummi Nation fishermen with Louisiana Bait Products pogies.



Menhaden boats harvest pogies in the Gulf of Mexico.

Sea Grant Agent Champions the Louisiana Clam

Louisiana is known for its seafood. We harvest shrimp, oysters, crabs, snapper, drum, flounder, jacks, mackerel, tuna, herring and much, much more. In a state where most ocean denizens have been sampled for their palatability, there is one species that we just don't know that much about—the southern quahog (*Mercenaria campechiensis*).

This large, meaty clam is similar to its northern relative *Mercenaria mercenaria*. Famously seen in chowders and sitting along the raw bar, northern quahogs have been a commercial staple in the Northeast for centuries.

Clams are marketed and sold according to their size – starting from littlenecks up to chowders. As they grow and become more dense, their suitability for various recipes changes. The smaller littlenecks and topnecks are steamed or eaten raw, while the larger cherrystones and chowders are used in baked dishes like clams casino or meaty chowders.

The culinary notoriety of the clam comes with a price as northern quahog populations have dwindled along the East Coast. This vacancy could provide an opportunity for the southern relative to shine at last. “I believe Louisiana is the last big reservoir of *Mercenaria* clams in the US,” states Rusty Gaudé, Louisiana Sea Grant and LSU AgCenter Extension agent.

Southern quahogs are not new to the market. Louisiana briefly harvested them in the 1970s, though they were outcompeted by other states' cheaper production. Nowadays, economic conditions have changed. To find a local clam bed, however, you need to talk to an oysterman. And be prepared to get wet.

Louisiana doesn't have large tidal swings, so you can't just walk out to an exposed bed with a clam rake in hand. “You have to dive for them,” says Gaudé. “And it is tough work.”

And it isn't just the location of the clams that is a mystery. There are still major questions about the clam's life history, size classes, abundance and population densities. “Nobody knows anything about the southern quahog,” emphasizes Gaudé, but he is on a mission to make sure that this changes.

One challenge has been changing state regulations regarding clam harvests. Clams currently aren't targeted commercially, and were not listed as bycatch on trip tickets. So technically, you couldn't keep them. For a year, Gaudé tirelessly attended meetings, encouraging state managers to ensure oystermen weren't out of compliance if they collected clams as bycatch. The campaign was a success and the clams can now be kept and marketed.

Gaudé is now onto learning more about the clams themselves. His next project will be using sonar to identify clam beds and determine densities. Hopefully, with some work, Louisiana clams will be coming to Louisiana tables soon.



Message from the Executive Director

August's slow-moving storm system – fueled by warm, moist air – dumped four trillion gallons of rain over two days to the east and west of the Atchafalaya River Basin. As many as 145,000 structures sustained flood damage. Thirty-thousand people were evacuated by boat and helicopter from their homes and cars due to flash flooding.

The initial flurry of emergency flood response has subsided. Now it is time for the upper regions of the Mississippi River Delta to give thought as to how we move forward.

We need to diagnose how this volume of water behaved along the flat, highly-developed landscape. This will provide insight into effective, long-term recovery efforts. Additionally, we should take lessons learned in coastal communities with regard to storm surge flooding and apply that traditional community knowledge to areas impacted by backwater flooding. This information can help protect all residents and communities from the future threats of an ever-changing climate.

Now, more than ever, we need to think comprehensively about water in both the coastal and upper delta plain.

Thanks to some rapid response funds from the National Sea Grant Office, Louisiana Sea Grant will integrate our present research and outreach programs to address efforts and provide guidance during the rebuilding process. We will work with partners among the university research community to assist government agencies from the federal to parish level, as well as others, in rebuilding safer communities.

Louisiana Sea Grant will continue to assist our region, from the coastal fringes to the upper floodplains, on mitigating the hazards of flooding in a changing climate.



Robert Twilley, Ph.D.

*Executive Director
Louisiana Sea Grant College Program*

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