

Delcambre Direct Expanding Across the Coast

Taking the direct approach of offering their catch straight to consumers worked for Delcambre shrimpers. That tactic is now being replicated across the state.

With a \$550,000 grant from the Oil Disaster Recovery Program, Delcambre Direct is evolving into the Louisiana Direct Development of Coastal Seafood Marketing Network. "We're leveraging the success of Delcambre Direct into Louisiana Direct," said Thomas Hymel, Louisiana Sea Grant and LSU AgCenter Marine Extension agent for Iberia, St. Martin, Lafayette, Vermilion, St. Landry and Avoyelles parishes. "Over a three-year period, the network will be expanded across the coast – beginning with three new direct marketing programs in Cameron, Lafourche/Terrebonne and the Southshore areas."

In 2009, the Twin Parish Port Commission of Delcambre teamed with LSG to create Delcambre Direct, a community-supported, web-based seafood direct marketing program. With hands-on technical coordination provided by Hymel, member fishermen are profiled on the Delcambre Direct website where they can post vessel-specific messages regarding incoming catches, arrival times and prices. By the end of 2010, more than 20 vessels were enrolled in the program and 675 consumers had subscribed for the site's catch updates.

"In many cases, shrimpers reported having most or all of their catch sold prior to leaving port because of Delcambre Direct," said Hymel.

During the fall 2010 harvest season, the 10 Delcambre Direct boats that weren't working the BP oil spill reported landing an average of 5,000 pounds of 21/25 count white shrimp per week. Direct sales netted those fishermen a \$6,000 weekly premium over dock prices. "On average, prices received through Delcambre Direct are 2.5 times greater than average dockside prices for commodity shrimp, but still well below typical retail for consumers," said Hymel. "For those 10 weeks of the fall season, the program added \$60,000 to the pocket of each fisherman."

"It's amazing. Demand has been larger than supply and a new sense of optimism emerged among the Delcambre fleet," he added.

That optimism is expected to spread in 2012 at the three new sites. "But it has to be a grass-roots effort to work," noted Hymel. "And it's not for every fisherman. In Delcambre, shrimp harvesters who joined the program were typically smaller, inshore or near-shore vessels that fish from one to five days at a time."

LSG Extension personnel will identify and work with local fishers and seafood businesses to develop and encourage participation in Louisiana Direct, and will forge partnerships with local entities and stakeholders to help make the new programs a success. Each locale will have its own

website to market the local product and will connect with an umbrella Louisiana Direct website with information for consumers on how to buy, handle and prepare seafood, as well as serving as a conduit to sister sites.

"All of the locations to which Louisiana Direct is expanding have tens of thousands of consumers who want fresh, quality shrimp and other seafood," said Hymel. "It's a win for everyone. The fishermen make more money on that portion of their catch they sell directly to the consumer. The consumer gets an outstanding product at a lower price than normal retail. And it benefits seafood processors, too."

"The direct marketing only represents about 1 percent of the commodity market for shrimp. But the extra income it provides shrimpers helps keep them in business, which in-turn means they're fishing another day and have product for the processors," said Hymel.

Louisiana Sea Grant Extension personnel involved in the expansion of the program include:

Thu Bui – St. Mary, Iberia and Vermilion parishes (tbui@agcenter.lsu.edu)

Julie Falgout (jfalgout@agcenter.lsu.edu)

Rusty Gaudé – Jefferson, Orleans, St. Charles and St. John parishes (aguade@agcenter.lsu.edu)

Twyla Herrington – Plaquemines Parish (therrington@agcenter.lsu.edu)

Alan Matherne – Terrebonne and Lafourche parishes (amatherne@agcenter.lsu.edu)

Kevin Savoie – Lower Sabine and Calcasieu parishes (ksavoie@agcenter.lsu.edu)

Mark Shirley – Jefferson Davis, Vermilion, Acadia, St. Landry, Evangeline, Cameron, Calcasieu, Lafayette, Beauregard and Allen parishes (mshirley@agcenter.lsu.edu)



The Port of Delcambre once had more than 100 shrimp boats in its fleet. Today, there are fewer than 30. The Delcambre Direct program is helping revitalize the fishing community.

Tulane Grad Named 2012 Knauss Fellow

Tulane University Law School graduate Brandon Sousa has been named a John A. Knauss Marine Policy Fellowship finalist for 2012.

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

Sousa earned his Juris Doctor from Tulane in May, where he served as a student attorney with the Tulane Environmental Law Clinic. He graduated from the University of South Carolina Honors College with a Bachelor of Arts in political science in 2007. Between

receiving his B.A. and starting law school, he worked as an Americorps volunteer in San Rafael, Calif., running an after-school program for low-income middle school students.

"My goal is to use my law degree to begin work within the executive branch of government for a marine issues-related agency, and ultimately to occupy a significant policy-making position within the federal government," Sousa said.

"Even as a teenager in Charleston, I pursued my passion for marine issues by volunteering each weekend for the South Carolina Aquarium, interacting and educating visitors about marine and freshwater species," he added. "When I returned home from college for summers, I worked as an ocean lifeguard

for the county and volunteered at the NOAA Marine Mammal Strandings Lab. There I was able to take part in an effort to catalogue the dolphin population of Charleston Harbor. So I'm really enthusiastic about marine-related legal and policy work."

Sousa is one of the 45 finalists selected nationwide for 2012. He was nominated for the Knauss Fellowship by the Louisiana Sea Grant College Program.



Brandon Sousa

LSG's Lampila Part of Norovirus Collaborative

Louisiana Sea Grant and LSU AgCenter seafood technology specialist Lucina Lampila, along with LSU Department of Food Science associate professor Marlene Janes, is part of a group called the USDA-NIFA Food Virology Collaborative that received a \$25 million award from the U.S. Department of Agriculture's National Institute of Food and Agriculture for a grant titled, "Building Capacity to Control Viral Food Borne Disease: A Translational, Multidisciplinary Approach."

The grant will be used to strengthen food safety by studying human noroviruses across the food supply chain in an effort to design effective control measures and reduce the number of virus-caused food-borne illnesses. Human noroviruses are the most common cause of food-borne disease, responsible for more than five million cases in the United States each year.

The project has six core objectives:

- Developing improved methods of studying human noroviruses and their role in food-borne illnesses
- Developing and validating rapid and practical methods to detect human noroviruses
- Collecting and analyzing data on viral food-borne illnesses – including how they are transmitted – and providing risk and cost analyses
- Improving the understanding of how human noroviruses behave in the food-safety chain in order to develop scientifically justifiable control measures
- Developing online courses and curricula for food safety and health professionals and food service workers, and providing information to fresh produce and shellfish producers and processors on the risks, management and control of food-borne viruses
- Developing a public literature database, building virus research capabilities in state public health laboratories, and developing graduate-level curricula to educate masters and doctoral students trained in food virology.

North Carolina State University will serve as the lead institution for the USDA-NIFA Food Virology Collaborative, which consists of more than 30 collaborators from academia, including Lampila and Janes, industry, and government.

Sea Grant Researcher Studies Impact of Corexit on Blue Crabs

The toxicity and sub-lethal effects of Corexit 9500 on larval and juvenile blue crabs has been the focus of a study by Julie Anderson, state-wide fisheries specialist for Louisiana Sea Grant and the LSU AgCenter. More than 1.5 million gallons of the dispersant was used to mitigate the impact of the Deepwater Horizon oil spill in 2010.

According to Nalco, the manufacturer of Corexit, the dispersant's ingredients are safe both collectively and individually. It also is approved for use by the Environmental Protection Agency (EPA). "But after the oil spill, blue crab

fishermen really wanted to know what impact the dispersant would have on Louisiana's crab fishery," said Anderson. "Little was known, and I knew this was something I could research in my lab."



Juvenile blue crabs.

The study began by observing the effects of exposure to Corexit at different dilutions to determine the levels of toxicity. Later, both juvenile and larval blue crabs were

reared in a lab for several weeks in artificial sea water to look for long-term effects. Wild crabs

were also studied. Short-term effects were not seen, and while still in preliminary stages, the long-term effects appear to be minimal. However, larval crabs were found to be more sensitive to the dispersant than the juvenile crabs.

"This particular dispersant is less toxic and less harmful than most others," said Anderson. "It took extremely high concentrations to harm the crabs. Even at that, the mortality rate didn't even hit 50 percent after a week."

Juvenile crabs had a 75 percent survival rate after 96 hours in concentrations of 1,000 parts per million of Corexit. Levels in the Gulf at the time of the oil spill were estimated to be about 1 part per million. Anderson concluded that blue crabs in the Gulf would have easily survived exposure to the dispersant, as well as most larval crabs.

Research Update

Development of Oyster Products for the Frozen, Ready-Meals Market

In an effort to find new markets for the Gulf Coast oyster industry, an innovative development assures oysters are post harvest treated to prevent bacterial illness while retaining much of their raw attributes, thus attracting new consumers and creating new jobs.

Subramaniam Sathivel, associate professor of food engineering in the LSU AgCenter's Department of Biological and Agricultural Engineering and Department of Food Science, is investigating the development and effect of cryogenic freezing and steam venting technology to produce high-quality, microwaveable frozen meals that utilize oysters as the entree.

Cryogenic freezing is a process often used on high-end food products to quickly freeze the commodity while maintaining superior quality over other freezing techniques. More importantly, cryogenic freezing can effectively eliminate the *Vibrio vulnificus* bacteria sometimes found in oyster meat that can sicken human consumers who have compromised immune systems.

"The steam venting technology features pressurized steam in the package, compared to traditional vacuum packaging techniques," noted Sathivel. As moisture in the meal evaporates and creates steam, the steam helps retain product moisture. The package self-opens to regulate the pressure so there's no need to poke holes for ventilation. The process was designed for and has been applied in the frozen food industry to help extend shelf life while maintaining a premium product.

Sathivel, the principal investigator on this Louisiana Sea Grant funded project, is working with colleagues at LSU and doctoral student Luis Espinoza. In 2011, the Louisiana Gulf Coast Section of the Institute of Food Technologies (IFT) awarded Espinoza the Central Analytical Laboratory Scholarship for his work on the development of oyster products. Espinoza was also awarded first place in the 2010 IFT-Refrigerated and Frozen Foods Division graduate student paper competition for "Effect of Cryogenic and Air Blast Freezing on Pathogenic Bacteria Load Associated with Oysters and the Quality of Oyster Meat."

The frozen oyster meal project, which began in September 2010, was delayed because of the Deepwater Horizon oil spill. Oysters were unavailable following the spill, which caused the expected completion date to be pushed back to February 2013. Sathivel would eventually like to investigate using other coastal products for frozen ready-meals.

"The ready-meal products will be evaluated for nutritional and chemical properties, microbial safety, product acceptance and production cost," added Sathivel.

Oyster Nurseries in the Industry's Future

Oyster growers, like terrestrial farmers, need seed.

Historically, Louisiana oyster harvesters have relied on wild larvae and seed collected from public waters that they transplant onto private leases for grow-out. But natural predation, hurricanes, as well as freshwater diversions like those in 2010 to combat the BP oil spill, negatively affect wild seed production. Future coastal restoration efforts utilizing additional diversions, plus piped-in sediment to bolster shorelines, are expected to further diminish wild seed manufacture.

Hatcheries are the solution to current and coming oyster seed needs, according to John Supan, Louisiana Sea Grant (LSG) molluscan shellfish specialist. "Wild seed will never entirely go away," said Supan, "but the days when Louisiana oyster growers will pick up the phone to a hatchery and place an order for cultivated seed oysters aren't far off."

Since 1990, LSG has operated a hatchery on Grand Isle focused on improving the state's oyster production through research and technology transfer. Caminada Bay Oyster Co.'s Jules Melancon is one of the state's oystermen to benefit from LSG's "nursery-development" research.

Under Supan's guidance, Melancon has built his own oyster nursery on Grand Isle to utilize the larvae produced from the Sea Grant facility. Melancon's nursery is the first such public/private partnership for LSG, and there are hopes for many other similar relationships in the future. "Jules is producing oyster seed for his needs," said Supan, "but there are opportunities for home-grown commercial nurseries to supply Louisiana oyster growers."

Existing bait fish and shrimp, as well as crab shedding operations, can easily expand to produce oyster seed. "The infrastructure is already there," said Supan. "They have tanks. They have the plumbing and pumps. They have direct access to saline water. It's a natural extension of their existing business and a means of keeping Louisiana a predominant oyster producing state."

Working with LSG Extension personnel, Supan is identifying appropriate locations and potential partners for this next phase of his work. He and Bill Walton from Auburn University are also teaching Gulf of Mexico harvesters the advantages of growing oysters in mesh bags suspended in the water column, rather than on traditional shell reefs in open water. This off-bottom technique protects the oysters from predators and reduces disease and fouling.

"One of my graduate students conducted an industry survey and found only 35 percent of the oysters planted using traditional methods make it to harvest," said Supan. "With off-bottom culture, every oyster you put into the water you get back."

He and Walton are conducting workshops on the off-bottom technique as well as other oyster-related topics through 2012.



Oyster seed grown at the Louisiana Sea Grant hatchery.

Mangrove Expansion in Louisiana Salt Marsh

Mild winters since 1990 have facilitated an increase of black mangrove in coastal Louisiana, resulting in a decline of *Spartina alterniflora*, commonly known as cordgrass. While both native plants provide habitat for aquatic species and help protect against coastal erosion, black mangrove's growing dominance potentially places the state's coast at greater risk.

"I remember driving down to Grand Isle for the first time in the 1980s. There was spartina as far as the eye could see," said Chuck Wilson, Louisiana Sea Grant executive director. "Now when I make the drive, it seems like the mangrove is taking over."

Structurally, black mangrove is sturdier than spartina. During hurricane storm surges, cordgrass provides little resistance and simply bends to the tidal flow. Mangrove however, which can grow to nine feet, acts as a barrier



Black mangrove seeds.

slowing and lessening the surge. And according to some research, mangrove is better at "building" land by allowing more sediment to settle out of the water.

But mangroves still can be uprooted by storm surge, and it is sensitive to cold. "The last harsh winter in 1989 killed approximately 98 percent of our mangrove trees," said Irv Mendelssohn, professor in the LSU Department of Oceanography and Coastal Sciences.

Those vulnerabilities exacerbate the coastal risk where mangrove is out-competing spartina.

The sudden loss of the trees as the result of either a hurricane or freeze would leave the shoreline exposed to erosion caused by normal wave action,

not to mention tropical storms and sea level rise. And although the mangrove can grow back, or spartina could reassert itself, neither plant would likely bounce back before more coast is lost. It can take mangrove 5 to 10 years to return. Spartina grows at a much faster rate of one to two years, but it would have to re-establish itself on mangrove turf.

During the four-day freeze in 1989, when the plant's domain was considerably less, mangrove seeds that had fallen were insulated by the ice. They later germinated and over 20 years of mild weather the trees reestablished themselves, thrived and expanded into spartina's range. The scenario for future die-offs is less promising.

"Salt marsh plants might not be able to come back," said Mendelssohn. "If plants do grow back, what plants will they be, how long will it take or will it be too late?"

How those questions are answered impacts the local ecology and what fish, crustaceans, birds and animals make coastal Louisiana their home. Unfortunately, there are no answers until such an event occurs.

Oral History Recordings Now Available Online

Researchers, as well as those who are just curious about the culture and history of Louisiana's coastal zone, have a new resource. More than two dozen oral history recordings and transcripts are now available from Louisiana Sea Grant's website.

The unedited recordings – which can be found at <http://www.laseagrant.org/comm/voices.htm> – cover topics from shrimp harvesting, raising cattle in coastal areas, barrier islands, canal building, oil leaks and hurricanes to European and Asian immigration and settlement of the coast.

"I like to ask the questions that no one else thinks to ask," said Don Davis, LSG's director emeritus of oral histories. "If someone doesn't find out all of the details from these areas' past, the history will be lost forever."

Davis and Carl Brasseaux, former director of the Center for Louisiana Studies at the University of Louisiana at Lafayette, have captured more than 60 hours of interviews. These recordings and transcripts are a valuable resource in the way that they provide first-hand information and experience from coastal Louisiana residents, keeping a vital part of the state's history alive.

"Today's society lives differently than it did 100 years ago," said Davis. "Life's easier now. You make more money. You have appliances. We want to know how they did things back then that people in today's society wouldn't even consider."

The audio files allow listeners to truly immerse themselves into the lives of those interviewed, while the transcripts provide researchers a way to review the same information in significantly less time.

"We have a small window of opportunity to capture these stories," said Brasseaux. "We're trying to create a mosaic. We want to obtain as much information as possible and piece the stories together to give the best image."

The oral history project began more than five years ago when LSG produced the web film series "Shrimp Tales," featuring photographs and interviews with fishermen discussing changes, challenges and wives' tales in their profession. "Reflections on Chandeleur," completed in 2009, documents the island chain's lighthouse and landscape through photographs and interviews with scientists and naturalists. And "Grand Isle Diaries," produced by Earl Robicheaux, recounts the history of that community.

"You have to gain trust," said Davis. "These people are giving you intricate details of their lives so you have to be able to listen."

In addition to text and audio files, Davis and Brasseaux have collected tens of thousands of images. They range from family photographs to copies of official records, and are available at Hill Memorial Library on LSU's Baton Rouge campus. LSG also partnered with the LSU Libraries Special Collections to make the images freely available through the Louisiana Digital Library.



Caffey Named Sea Grant Extension Director

Rex H. Caffey is Louisiana Sea Grant's (LSG) new director of Marine Extension. He had served as interim Extension director since December 2010.

"Rex is a natural for this position," said Chuck Wilson, Louisiana Sea Grant College Program executive director. "He understands the importance of Extension to Sea Grant's mission, he's demonstrated his leadership abilities countless times, and he knows the job. Twice he's served as interim Marine Extension director."

LSU AgCenter Vice Chancellor Paul Coreil added, "We are delighted Rex has accepted the position. Marine Extension is critical to the future sustainability of coastal Louisiana, and Rex is perfect to lead our shared AgCenter/Sea Grant team."

Caffey has been with LSG and the AgCenter since 1998, when he began serving as a wetlands and coastal resources

specialist. In 2002, he was appointed an associate professor in the LSU AgCenter Department of Agricultural Economics and Agribusiness while also maintaining his Marine Extension specialist appointment. In 2008, he was promoted to full professor. Caffey also is the founding director of the LSU Center for Natural Resource Economics and Policy.

Caffey earned his B.S. in agricultural business, his M.S. in natural resource economics, and his doctorate in wildlife and fisheries science from Louisiana State University. He's worked for the Louisiana Department of Agriculture and Forestry, Aquaculture Technologies Ltd., and operated his own charter fishing business.

"I'm looking forward to the new challenges," Caffey said. "Although I'll be leading Louisiana Sea Grant's Marine Extension program, I'll still be an Extension

specialist and continue with my resource economics work and working with students."



Rex Caffey

Bui Receives Gulf Guardian Award

Louisiana Sea Grant and LSU AgCenter Extension agent Thu Bui received the 2011 Gulf Guardian Award in the Cultural Diversity/Environmental Justice Category from the Gulf of Mexico Program. The award was presented on Aug. 3.

"During the days following the Deepwater Horizon oil spill, many people rose to the occasion to help those impacted by the crisis. Among the thousands of state and federal employees and private sector workers, one

Vietnamese lady stands out among the crowd," states her award nomination, submitted by fellow LSG and AgCenter Extension agent Mark Shirley. "During the oil spill, Thu played a vital role in assisting fishermen, especially the Vietnamese fishermen, in their efforts to cope with the crisis.

"Most of the offshore shrimp fleet and a large number of the crab fishermen in that region are Asian-American. Thu's Vietnamese heritage and her knowledge and experience in the fishing industry enabled her to sense the needs of the fishermen and deliver culturally appropriate programs. The fishermen in her region depend on word of mouth communication rather than e-mail, Facebook or Twitter. For that reason, Thu spread the word about meetings by visiting docks and contacting key community leaders. More than 400 commercial fishermen and their families in her region, both Anglo-American and Vietnamese-American, were kept informed about the Deepwater Horizon response and recovery issues in a timely, factual and non-biased way," the nomination states.

Aside from her oil spill response efforts, Bui, in conjunction with the Texas Health Science Center, has been involved with safety training programs for fishermen. She also serves on a U.S. Coast Guard advisory committee dealing with commercial fishing safety and environmental concerns.

The Gulf of Mexico Program initiated the Gulf Guardian awards in 2000 as a way to recognize and honor the businesses, community groups, individuals and agencies that are taking positive steps to keep the Gulf healthy, beautiful and productive. A first, second and third place award is given in seven categories: Individual, Business, Youth Environmental Education, Civic/Nonprofit Organizations, Cultural Diversity/Environmental Justice, Partnership and Bi-national Efforts.

"The Gulf Guardian Award winners demonstrate great examples of collaborative efforts leading to solutions that address the Gulf of Mexico environment," said EPA regional administrator Al Armendariz. "Their accomplishments are making a positive difference in protecting and restoring the Gulf and EPA is pleased to recognize their environmental stewardship."

The Gulf of Mexico Program began in 1988 to protect, restore, and maintain the health and productivity of the Gulf of Mexico ecosystem in economically sustainable ways. The Gulf of Mexico Program is underwritten by the U.S. Environmental Protection Agency and is a non-regulatory, inclusive consortium of state and federal government agencies and representatives of the business and agricultural community, fishing industry, scientists, environmentalists, and community leaders from all five Gulf States.



Thu Bui

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Herrington New Marine Extension Agent

Twyla Herrington is the new Louisiana Sea Grant and LSU AgCenter Marine Extension agent in Plaquemines, St. Bernard and Orleans parishes.

A Louisiana native, she was hired in April to fill the position previously held by Rusty Gaudé, who has moved to Jefferson, St. Charles and St. John parishes.

Herrington first became familiar with Sea Grant in the summer of 1997 when she worked at Marsh Maneuvers – a summer camp program hosted by LSG and the AgCenter that gives high school students an opportunity to learn about coastal ecology and the biology of coastal areas.

As an Extension agent, Herrington is working on several ongoing projects, including: eco-tourism, community

resilience, direct seafood marketing and new gear types for fishermen. Specifically in St. Bernard, she is helping implement Southshore

Direct. The web-based direct marketing program emulates the already successful Delcambre Direct program, which has profited shrimpers of the Vermilion Bay region. In Plaquemines, she plans to work closely with recreational fisheries.

Herrington attended Louisiana State University where she earned a Bachelor of Science degree in environmental management and recently earned a

Master's degree in marine biology from Nova Southeastern University Oceanographic Center in Florida.

She can be reached at therrington@agcenter.lsu.edu.



Twyla Herrington