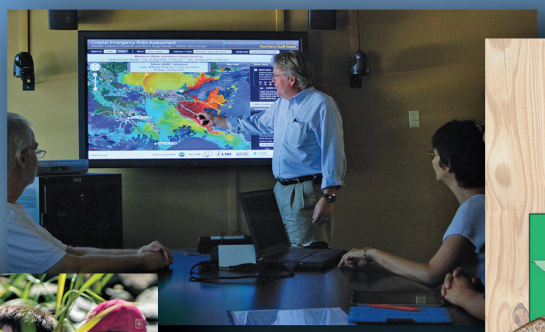
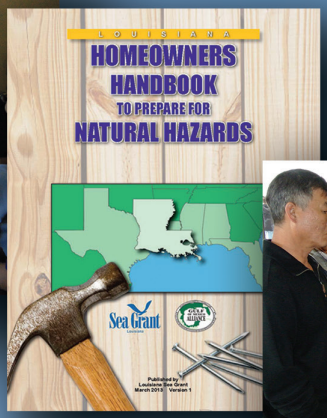
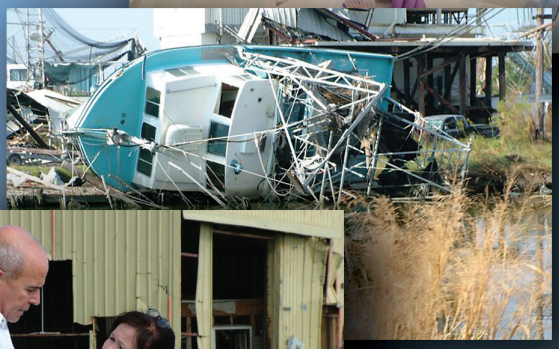




Federal Site Review

June 16-17, 2015



Sea Grant
Louisiana

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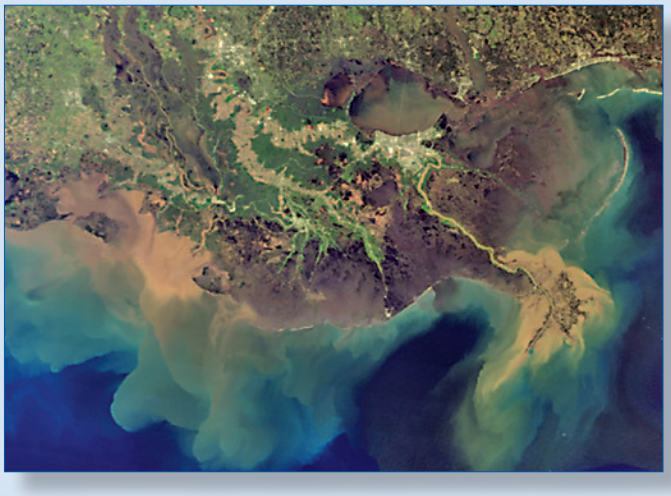
PROGRAM MANAGEMENT & ORGANIZATION

The most important research and outreach challenges that Louisiana Sea Grant (LSG) faces relate to sustainability of communities and ecosystems in the hurricane-prone deltaic coast bordering the northern Gulf of Mexico. The 2005 tropical storm season with Hurricanes Katrina and Rita, and the 2008 storm season with Hurricanes Gustav and Ike, revealed much about the region's increasing hurricane vulnerabilities and associated secondary impacts of disturbance to a degrading delta. Additional economic and environmental vulnerabilities were exposed during the 2010 Deepwater Horizon oil spill, the 2008 and 2011 Mississippi River floods, and, most recently, Hurricane Isaac. This deltaic coast, with reliance of communities on ecosystem services, will also continue to be confronted with the effects of climate change, sea level rise, and land subsidence on coastal parishes (counties) and their residents. Administration of this cross-disciplinary, multi-institutional effort is the responsibility of LSG. Although the primary functions of the office are unchanged, the scope and complexity of its activities have expanded tremendously since 1968. The LSG actively promotes inter- and intra-university involvement in State, regional, and Federal marine affairs; incubates new institutional capabilities and programs; conducts and coordinates marine informational and advisory services; and provides advisory and referral services for many agencies, businesses, and individuals. Eighty-five percent of Louisiana's population – LSG's primary constituency – resides in a vulnerable deltaic coast, which is also a major locus of strategically important seafood, oil and gas, maritime, refining, and petrochemical industries of great national significance. The program can provide services most effectively by actively recruiting relevant research projects and by establishing and maintaining an aggressive outreach program that relies on partnerships with state and federal agencies and private companies to supplement limited resources.



Management Team Composition and Responsibilities

The Louisiana Sea Grant College Program is a unit within the Office of Research and Economic Development at Louisiana State University. Program management requires an exceptional blend of leadership and administrative knowledge to address the unique marine resource problems of the Mississippi River Delta region. Objectives of LSG include the following: (1) To develop and maintain strategic and implementation plans for the Louisiana Sea Grant College Program; (2) To meet the needs and opportunities of coastal Louisiana communities and industries by marshaling intellectual talent in Louisiana institutions of higher education; (3) To plan Sea Grant efforts that contribute Louisiana-based university research, expertise, and experience in addressing regional, national, and international priorities in coastal issues; (4) To conduct ongoing program "self-evaluation" of most effective impacts to coastal issues; (5) To support the administrative functions in the LSG that are required for effective program operations, planning, reporting, and fiscal accountability. The program's Executive Director has access to a talented research faculty, extension faculty and agents, research associates, and professional support staff. As employees of LSU, Sea Grant personnel are encouraged to take classes to advance their careers and seek new challenges that not only benefit their career development but also the Sea Grant program. LSG is led by a management team that touches all aspects of the program and is coordinated through regular staff meetings, individual department meetings, and quarterly meetings with Marine Extension program. In addition, senior leadership of LSG also have tenure and adjunct appointments in academic units at LSU, helping to strengthen the linkages between research, education, and outreach. Below is a partial list of management team member responsibilities:

- Executive Director – Provides vision for the overall program; presents opportunities to the management team; ensures the program meets National Sea Grant and NOAA compliance, reporting, and fiduciary responsibilities; facilitates communication within the LSG office and between LSG and its various advisory boards, the region, and Sea Grant Association; and leads the management team in meeting the LSG Strategic Plan. Presently, the Executive Director holds tenure in the Department of Oceanography and Coastal Sciences that includes teaching and research responsibilities (40 percent appointment), as well as duties as Executive Director of LSG (60 percent).

- Associate Executive Director – Is Director of Research and responsible for all research grant and student fellowship grant activities, including the biennial grants program; acts on behalf of the Executive Director in his absence; represents LSG in university, local, and regional meetings; and assists in the operation, management, and development of the LSG Strategic Plan. Provides primary support in reporting to the National Sea Grant Office, coordinating capabilities, and identifying research talent needed to effectively develop and evaluate the core program administered by LSG. Has a partial non-tenure research appointment. Presently AED has adjunct appointment in the Department of Environmental Sciences in the School of the Coast and Environment.

- Business Manager – Provides information about the past, current, and future fiscal status of Louisiana Sea Grant. Manages the accounting team and coordinates with LSU Office of Finance and Administrative Services and NOAA's budget office. Coordinates responsibilities of sponsored research activities and is point of contact with the Office of Sponsored Research at LSU and sponsored program offices of the LSU AgCenter and other universities that have grants or contracts with LSG.

- Assistant to the Executive Director – Is the point of contact for the Executive Director by providing logistical and travel support and coordinates meetings; assists with procurement and inventory.

- Program Development Manager – Administers human resource functions, maintains the program's graduate student database, oversees special events including quarterly meetings of the Marine Extension Program, and supports the Associate Executive Director.

- Director of Extension – Oversees Marine Extension Program (MEP) including quarterly meetings, communication, recruitment, and evaluation of MEP personnel; develops and administers an omnibus budget and pursuit of extramural support funding. Has tenure in the Department of Resource Economics and partial academic appointment (51 percent), and is jointly funded by LSU AgCenter.

- Director of Communications – Gathers information from management team, researchers, and MEP personnel, and directs production of outreach products for a variety of audiences. Shares information about publications, news releases, and media coverage. Responsible for distribution of information on web site, social media, and listservs.

- Director of Law & Policy Program – Researches and provides updates on State, regional, and Federal law and policy activities in support LSG Marine Extension personnel and other efforts. Responsible for legal interns. Presently has adjunct appointment in the Department of Environmental Sciences in the School of the Coast and Environment.

- Director of Education Program – Shares LSG-sponsored education activities from and with all education centers associated with LSG. Develops novel, standards-based environmental curricula for the K-12 classroom. Is tenure position and has appointment in the School of Education (30 percent).

- Oyster Research Lab Director – Operates LSG Oyster Research Lab on Grand Isle; serves as point of contact for growers and dealers association concerning shellfish issues; and guides LSG shellfish research and outreach programs. Is non-tenured research professor.

- Sea Grant Laborde Chair for Research and Technology Transfer – Endowed chair that brings highly qualified scientists to LSU to focus on marine and coastal issues critical to Louisiana. Beginning in 2015, the Laborde Chair is associated with the directorship of the LSU Hurricane Center to promote research, education, and outreach activities that reduce storm risk and promote public safety as commitment to the Weather-Ready Nation program at the National Weather Service.

Louisiana Sea Grant Staff Efforts

Staff Member	Title	FTE LSG	FTE Other
Dr. Robert Twilley	Executive Director	0.60	0.40
Dr. Matt Bethel	Associate Executive Director	1.00	
Judy Johnson	Assistant to the Executive Director	1.00	
Katie Lea	Program Development Manager	1.00	
Business Office			
Kelly Robertson	Business Manager	1.00	
Marty Chavers	Accountant 4	1.00	
Communications			
Roy Kron	Director of Communications	1.00	
Melissa Castleberry	Web Coordinator	1.00	
Vanya Cherneva	IT Analyst	0.50	0.50
Paula Ouder, J.D.	Science Writer/Editor	1.00	
Robert Ray	Art Director	1.00	
Jessica Schexnayder	Administrative Coordinator, Communications	1.00	
Education			
Dr. Pam Blanchard	Director of Education	0.30	0.70
Dianne Lindstedt	Education Coordinator	1.00	
Extension			
Dr. Rex Caffey	Director of Marine Extension	0.49	0.51
Dr. Julie Anderson	Assistant Professor, Specialist, Fisheries	0.50	0.50
Vacant	Assistant Professor, Specialist, Seafood Quality	0.50	0.50
Thu Bui	Associate Marine Agent, St. Mary, Iberia, & Vermilion Parishes	0.50	0.50
Carol Franze	Associate Marine Agent, St. Tammany, & Tangipahoa Parishes	0.50	0.50
Albert “Rusty” Gaudé	Marine Agent, Jefferson, Orleans, St. Charles, & St. John Parishes	0.50	0.50
Vacant	Associate Marine Agent, Plaquemines, St. Bernard, & Orleans Parishes	0.50	0.50
Thomas Hymel	Marine Agent, Iberia, St. Martin, Lafayette, Vermilion, St. Landry, & Avoyelles Parishes; Director, LA Fisheries Forward	0.50	0.50
Lauren Land	Sustainability Coordinator	1.00	
Dr. Brian LeBlanc	Professor, Specialist, Water Quality	0.50	0.50
Dr. Greg Lutz	Professor, Specialist, Aquaculture	0.50	0.50
Alan Matherne	Marine Agent, Terrebonne & Lafourche Parishes	0.50	0.50
Dr. Emily Maung-Douglass	Oil Spill Specialist	1.00	
Kevin Savoie	Marine Agent, Lower Sabine & Calcasieu Parishes	0.50	0.50
Mark Shirley	Marine Agent, Jefferson Davis, Vermilion, Acadia, St. Landry, Evangeline, Cameron, Calcasieu, Lafayette, Beauregard, & Allen Parishes	0.50	0.50
Dr. John Supan	Research Faculty Professor, Oyster Research Lab Director	1.00	
Rebekah Jones	GIS Specialist	1.00	

Law & Policy Program			
James Wilkins, J.D.	Research Faculty Professor, Director of Sea Grant Law & Policy Program	1.00	
Melissa Daigle, J.D.	Research Associate and Resiliency Specialist	1.00	
Research Associates			
Victoria Bell	Research Associate, Extension, GIS	1.00	
Lisa Bourassa	Research Associate, Phycologist	1.00	
Leslie Davis	Communication Coordinator, LA Fisheries Forward	1.00	
Anne Dugas	Research Associate, LA Fisheries Forward	1.00	
Julie Falgout	Extension Associate, Seafood Industry Liason	1.00	
Megan Gima	Research Associate, Breeding Program Manager	1.00	
Sea Grant Scholars			
Dr. Carl Brasseaux	Sea Grant Scholar	0.20	0.0
Dr. Scott Hagen	Laborde Chair	0.05	0.95
Dr. Don Davis	Sea Grant Scholar	0.20	0.0
Gratis Appointments			
Dr. Jack Van Lopik	Director Emeritus	0.00	
Dr. Charles Wilson	Director Emeritus	0.00	
Total	**44 People**	**31.34**	

Louisiana Sea Grant Advisory Council and Panels

Guidance for Louisiana Sea Grant leadership is provided by an Advisory Council, NGO Advisory Council, and two project-specific advisory panels – the Sea Grant Law & Policy Advisory Panel, and Marine Education Advisory Panel. All four groups have been actively involved and have been particularly helpful in strategic planning and program implementation.

Additionally, all MEP agents are required to seek systematic program input and guidance from local constituents. The recruitment, organization, and communication with a single, standing advisory committee had been the traditional method for MEP agents. In recent years, particularly as a result of coastal crisis operations since 2005, the scope of agent work has expanded to include multi-parish responsibilities. As part of this evolution, some MEP agents have moved to a more participatory approach in which they maintain membership in numerous scientific, management, and issue-based advisory committees that are pertinent to their program and region of responsibility. Under this approach, it is not uncommon for a MEP agent to be actively involved in more than a dozen local, state, and regional boards or committees.

Louisiana Sea Grant has maintained a high-profile Advisory Council for several decades. Membership is drawn from the leaders of state agencies, regional Federal offices, area communities, and stakeholders. The primary role of the Advisory Council (as a whole) has been to help guide LSG's Strategic Plan by providing input and feedback in the development of that plan and ratifying the final version. Many Council members play a more direct, interactive role in the program by assisting with LSG's Omnibus and Program Development proposal review process, as well as contributing to specific research and outreach programs.

Louisiana Sea Grant Advisory Council

Member	Position/Affiliation
Robert Barham	Secretary, Louisiana Department of Wildlife and Fisheries
Ryan Bourriaque	Parish Administrator, Cameron Parish
Virginia Burkett	Chief Scientist for Global Change, U.S. Geological Survey
Phillip Elzer	Associate Director, LSU AgCenter
Pat Forbes	Director, Office of Community Development
Jim Gossen	Chairman, Sysco Louisiana Foods
Chip Groat	CEO, Water Institute of the Gulf
Clint Guidry	President, Louisiana Shrimp Association
Wayne Keller	Director, Grand Isle Port Commission
Kai Midboe	Director of Policy Research, Water Institute of the Gulf
King Milling	Chair, Governor's Commission on Coastal Restoration
Ralph V. Pausina	President, Louisiana Oyster Dealers & Growers Association
Harlon Pearce	Board of Directors, Gulf Seafood Institute
Suzanne Van Cooten	Chief Forecaster, National Weather Service
Wendell Verrett	Director, Twin Parish Port Commission
Jerome Zeringue	Past Chair, Coastal Protection & Restoration Authority

Louisiana Sea Grant's NGO Advisory Panel is a relatively new body. The panel's charge is to provide guidance in defining Sea Grant strategies and partnerships. This panel was convened to provide the Executive Director guidance on the many activities, and functions, of NGOs as part of the crisis management needs of coastal Louisiana since 2005.

NGO Advisory Panel

Member	Affiliation
Mary Gueniot Biegler	Executive Director, Bayou Grace Community Services
Dean Blanchard	Deputy Director, Barataria-Terrebonne National Estuary Program
Steve Cochran	Associate Director, Environmental Defense Fund
Mike Carloss	Manager of Conservation Programs, Ducks Unlimited
Sidney Coffee	Senior Advisor for Climate, Energy and the Coast, America's WETLAND Foundation
Karen Gautreaux	Director of Government Relations, The Nature Conservancy of Louisiana
Scott Kirkpatrick	President, Coast Builders Coalition
John Lopez	Executive Director, Lake Pontchartrain Basin Foundation
Chris Macaluso	Director, Theodore Roosevelt Conservation Partnership
Simone Theriot Maloz	Executive Director, Restore or Retreat Inc.
Corey Miller	Stakeholder Engagement Coordinator, Coalition to Restore Coastal Louisiana
David Muth	Mississippi River Delta Restoration Program
Rebecca Triche	Executive Director, Louisiana Wildlife Federation

The 10-member Louisiana Sea Grant Marine Education Advisory Panel provides advice and guidance on marine and coastal education needs for Louisiana's K-12 teachers and students. The panel meets annually, however, LSG's Education Coordinator has close working relationships with all members and communicates with them frequently throughout the year to discuss and seek advice on current issues, ongoing projects and activities, methods of delivery, and evaluation.

Marine Education Advisory Panel

Member	Affiliation
Susan Bergeron	Director, Barataria-Terrebonne National Estuary Program
Pam Blanchard	Associate Professor, LSU School of Education, Theory, & Practice
Angela Capello	Educator, Louisiana Department of Wildlife and Fisheries
Murt Conover	Senior Marine Educator, Louisiana Universities Marine Consortium
Carol Franze	Associate Marine Agent, Louisiana Sea Grant/LSU AgCenter
Tricia LeBlanc	Director of Education & Volunteers, Audubon Institute
Dinah Maygarden	Coastal Education Program Director, University of N.O./Pontchartrain Institute for Environmental Studies
Brenda Nixon	Assistant Director, LSU Caine Center for Scientific, Engineering, Tech., & Math Literacy
Alma Robichaux	Education Coordinator, Barataria-Terrebonne National Estuary Program
Ann Wilson	Science Program Coordinator, Louisiana Department of Education

The Law & Policy Advisory Panel meets twice each year to provide advice and awareness into research topics that would benefit the constituents of the Louisiana Sea Grant Law & Policy Program (LASGLPP). The panel provides the LASGLPP with insight into legal issues that are either currently impacting the coastal area or will be impacting it in the near future. The panel also assists by providing feedback on the Omnibus proposal that guides LASGLPP's work over the course of the grant period, helping the program focus on the issues that are most pressing.

Law & Policy Advisory Panel

Member	Affiliation
Jennifer Anderson	Lawyer, Jones Walker LLP
Mark Davis	Institute on Water Resources Law & Policy Director, Tulane University Law School
Cole Garrett	Louisiana Department of Wildlife & Fisheries
Steven Jones	Senior Program Manager, Office of the Louisiana Attorney General
Kai Miboe	General Counsel, Water Institute of the Gulf
Jessica Orgeron	Law Clerk, Louisiana Supreme Court
Ryan Seidemann	Assistant Attorney General, Office of the Louisiana Attorney General
Mike Wascom	Professor, Louisiana State University

Setting of Program within LSU System

(Figure 1)

Louisiana Sea Grant was established in 1968, and Louisiana State University was named a Sea Grant College in 1978. Since its establishment, LSG has reported to the Office of Research at the LSU A&M campus in Baton Rouge.

RECRUITING TALENT

Project Solicitation and Selection

The goals and objectives identified in the Louisiana Sea Grant Strategic Plan comprise the principal guidance provided to researchers and outreach personnel concerning research topics that the program would like to address during the Omnibus sponsored research funding cycle.

Research objectives are stated in fairly general terms to provide reasonable latitude for researchers to exercise creativity in their applications, while remaining sufficiently focused to provide guidance on what topics are relevant to those areas that the local and regional planning processes have identified as holding the greatest potential need for information and thus potential impacts to solving problems. Louisiana Sea Grant employs a two-step, competitive process for project selection: (a) A Request for Statements of Interest, listing the program's priorities and administrative guidance, is widely circulated to researchers at academic institutions in Louisiana. Researchers are encouraged to submit statements of interest that address issues relevant to the goals and objectives in the Strategic Plan (see pages 7-11 of the Strategic Plan for more detail). Applications received by a published deadline are screened by a panel of experts on the basis of applicability and relevance to Strategic Plan objectives. (b) Principal Investigators of the highest-ranked statements of research interest are invited to submit expanded proposals, which are evaluated more on scientific merit and development of an outreach plan, compared to focus on relevance at the stage of the statement of interest. Full proposals received are circulated for external scientific peer review. Efforts are made to secure at least three external reviews for each proposal, which are made available for evaluation by a technical review panel (TRP) of outside experts. The TRP takes into consideration scores and comments by the external reviews, and convenes a panel discussion to provide LSG with list of proposals in three categories: highly recommended, recommended if funds available, not recommended for funding. Generally, seven or more projects are selected for funding based on the collective review of external reviewers, comments from TRP, and program needs of LSG.

Each proposal includes its own nominal schedule of milestones and is required to have a strong outreach plan. All peer reviewers and panelists certify that they either have no conflicts of interest involving the proposals' principal investigators or institutions that they review, or they make disclosures of any potential conflict of interest that could reasonably be perceived.

Proposal Participation Among Higher Education Institutions

Important elements of Louisiana Sea Grant's planning environment are the state's four public management systems of higher education, which, in turn, are governed by the Board of Regents (www.regents.state.la.us). Each of the four systems has its own management board. The Louisiana State University A&M System (www.lsusystem.edu) has 10 institutions on seven campuses; the University of Louisiana System (www.ulsystem.edu) has nine institutions; the Southern University and A&M System (www.sus.edu) has five units on three campuses; and the Louisiana Community and Technical College System (www.lctcs.edu) has 13 community and technical colleges. Also governed by the Board of Regents is the Louisiana Universities Marine Consortium (LUMCON), a coastal facility and cooperative multi-institutional program that conducts research and educational activities in marine sciences. In addition, the Louisiana Association of Independent Colleges and Universities (www.laicu.org) has 10 private institutions, of which Tulane University is the largest. Sea Grant-funded research has been conducted through many of these academic institutions, with Sea Grant fellowship opportunities offered to undergraduate and graduate students enrolled in them.

Over the past two Omnibus cycles since Louisiana Sea Grant's last site visit (2011), 92 statements of interest were received; 36 full proposals were reviewed; and 15 were funded. Additionally, 29 project development proposals have been funded during this time.

Proposal Participation

Preliminary Proposals and Full Proposals for 2010-12 Omnibus by Institution (Table 1a)

	LSU	LUMCON	Nicholls	Tulane	UNO	LDWF	Total
Pre-proposals	31	3	1	0	1	1	37
Full Proposals	19	2	1	0	1	1	24
Funded	10	1	0	0	0	0	11
Funded PD	11	0	1	1	1	0	14

*2010-12 Omnibus data was reported during 2011 site review.

Preliminary Proposals and Full Proposals for 2012-14 Omnibus by Institution (Table 1b)

	LSU	LUMCON	ULL	SLU	NSU	Tulane	AgCenter	LA Tech	Total
Pre-proposals	19	2	2	1	0	3	17	1	44
Full Proposals	5	1	1	0	0	0	10	0	17
Funded	2	1	0	0	0	0	4	0	7
Funded PD	8	1	1	0	1	1	2	0	14

Preliminary Proposals and Full Proposals for 2014-16 Omnibus by Institution (Table 1c)

	LSU	LUMCON	ULL	Tulane	AgCenter	LA Tech	TWIG	G-Green	Total
Pre-proposals	22	1	3	2	17	1	0	1	47
Full Proposals	6	1	2	0	10	0	0	0	19
Funded	3	0	1	0	3	0	0	0	7
Funded PD	3	0		1	0	0	1	0	5

New vs. Continuing Projects and Principal Investigators by Omnibus Cycle

New and Continuing Research Projects and New Research Investigators (Table 2)

	2010-2012	2012-2014	2014-2016
New Projects	11	4	3
Continuing Projects	0	3	4
New Principal Investigators	4	3	3
New Co-Principal Investigators	11	4	7

Success in National Competitions

Success in National Sea Grant Competitions (Table 3)

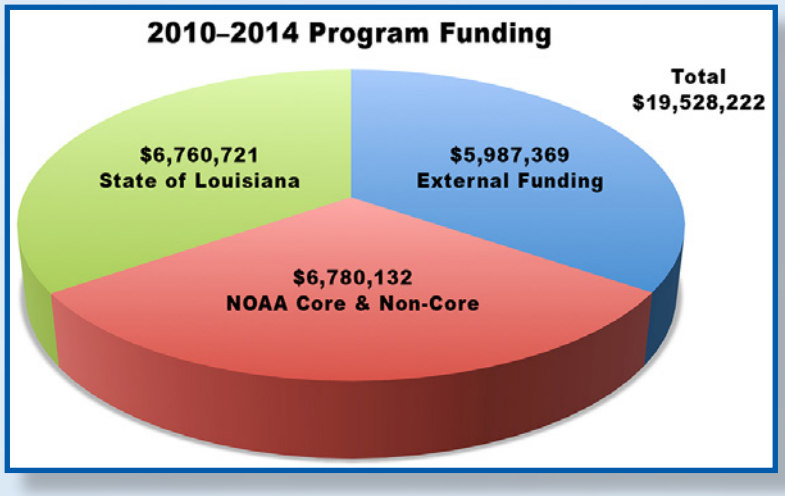
Competition	2011	2012	2013	2014	Total
National Strategic Investment Preproposals Submitted	0	4	0	0	4
National Strategic Investment Full Proposals Submitted	0	4	2	1	7
National Strategic Investment Funded Projects	0	2	0	1	3
Knauss Fellowship Applications	2	3	5	4	14
Knauss Fellowships Awarded	2	1	1	1*	5

*Two Knauss Fellowships were awarded; one declined after selection

FISCAL REPORT

Distribution of Funds

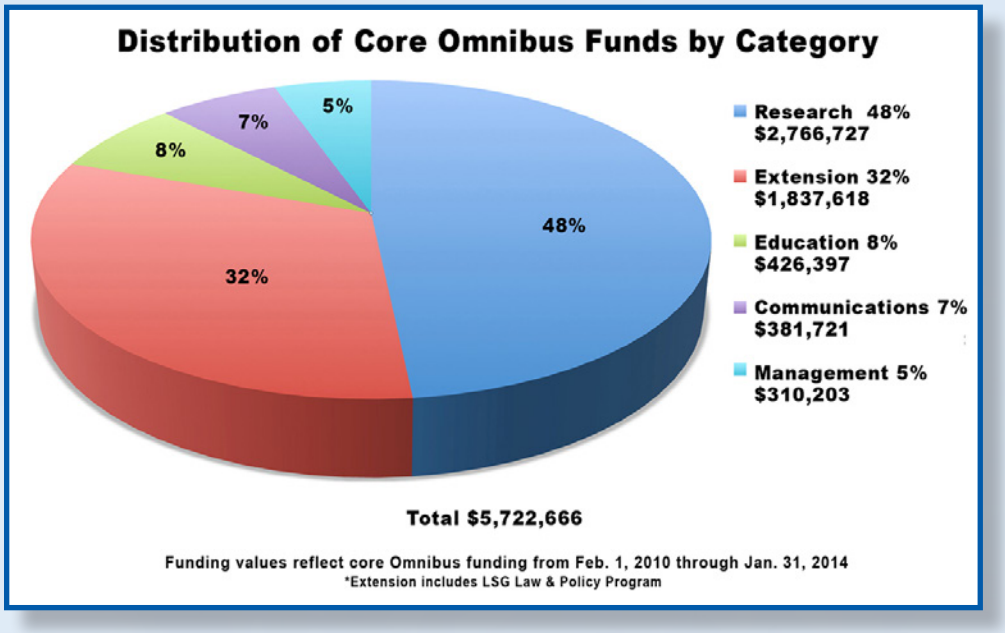
NOAA Federal funding for Louisiana Sea Grant from Feb. 1, 2010, through Jan. 31, 2014, including both core and supplemental sources, was $6,780,132 (Figure 2). The annual funding of core plus supplemental funds ranged from $1.44 million to $1.93 million. Funding by the State of Louisiana during the last four years, as part of funds administered by ORED at LSU, was $6,760,721. LSG State funding includes the program's operating budget for FY 2011-12 to 2014-15 (July-June). These funds are the primary match for LSG. Of that amount, about $3.65 million were committed as match through LSG, which exceeds the required 1:2 match to Federal core funding. External funding to Louisiana Sea Grant over the last four years was $5,987,369 for a total program funding of $19,528,222.



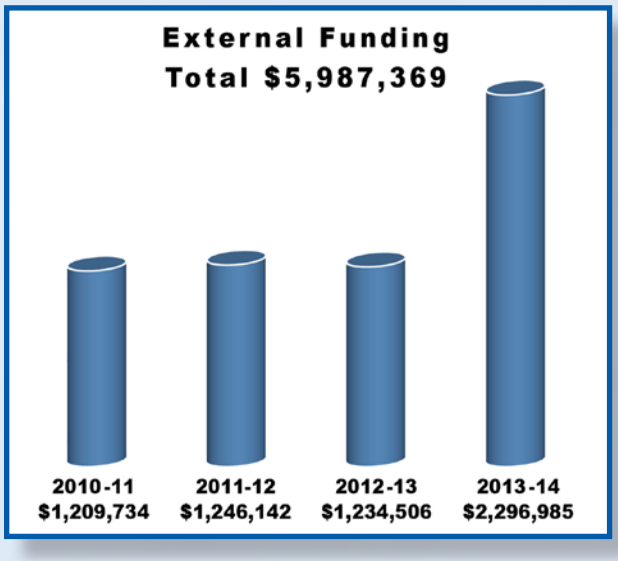
(Figure 2)

Louisiana Sea Grant's distribution of core Federal funding across Research, Extension, Education, Communications, and Management is shown below in Figure 3. As required by the NSGO, the program consistently invests nearly 50 percent of its core NOAA funding in research and at least 40 percent in outreach (Sea Grant Extension, Communications, and Marine Education). Administrative costs have been about 5 percent of core Omnibus funding.

Every Federal dollar invested in Louisiana Sea Grant's core program yielded about $2.41 in other funds for the period of Feb. 1, 2010, through Jan. 31, 2014. External funds (Figure 4) are additional to the Federal funds received through the Omnibus, including funds from other Federal and State grants/contracts, which provide support to LSG programs. External funding increased dramatically during this period. These external funds do not include subsequent funding principal investigators received as a result of Sea Grant's investment in their research programs, or State support provided for partial salary to Marine Extension agents and specialists. LSG's distribution of funds – Federal, match, pass-through and leveraged for the fiscal years following the last site review – by Focus Area are depicted in Figure 5.

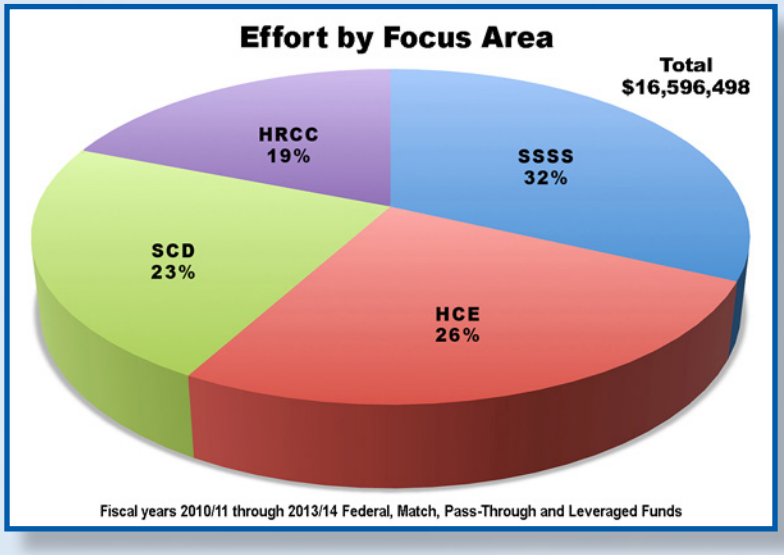


(Figure 3)



(Figure 4)

Funding that includes Federal, match, pass through, and leveraged totals $16,596,498. LSG's distribution of these funds for the fiscal years following the last site review – by Focus Area – are depicted in Figure 5. Annually, Omnibus and associated match plus leveraged funds have partially supported 6 to 20 research faculty, 8 to 10 graduate students, and 8 to 15 undergraduates.



(Figure 5)

Louisiana State University has a federally negotiated overhead rate of 49 percent for research. However, LSG qualifies for overhead at the off-campus rate of 26 percent for Federal funds and 13 percent for State research funds. The program also receives funding equal to 15 percent of recovered overhead as an annual rebate for utilization in its research program. These funds are used to augment LSG's program development investments and to purchase equipment for LSG researchers.

National Strategic Investments (Table 4)

Initiative	Project Title	Duration	Funding (match)
Aquaculture Research Program	Evaluation of Oyster Stocks and Grow-Out Methodologies for Commercial Production of Eastern Oysters in Gulf of Mexico Estuaries	2010-12	$296,720 ($149,362)
Aquaculture Extension & Technology Transfer	Farming the Fertile Crescent: Intensification of Oyster Culture in the Northern Gulf of Mexico	2010-13	$200,001 ($100,203)
Aquaculture Research Program	Assessment and Projection of the Impacts of Freshwater Diversions under Relative Sea-Level Rise on Easter Oyster (*Crassostrea virginica*) Production in Eastern Coast of Louisiana Using a Coupled Hydrodynamic-Oyster Population Model	2012-14	$150,000 ($75,000)
Aquaculture Research Program	Quantifying the Economic Ecosystem Services of Oyster Farming as Offsets to Regulatory Fees	2012-14	$90,040 ($53,952)
Aquaculture Research Program	On-board Rapid Cooling of Cultured Oysters to Address Regulatory Needs	2014-16	$193,834 ($104,940)
Total			$930,595 ($483,457)

Student Support

Since being established in 1968, Louisiana Sea Grant has supported more than 1,050 graduate students, as well as numerous undergraduate students. (Table 5) That support includes the following:

- The Undergraduate Research Opportunities Program (UROP), which provides talented undergraduate students interested in pursuing studies in coastal-related disciplines with hands-on research experience under the guidance of a faculty mentor.
- The Coastal Science Assistantship Program (CSAP), which provides assistantships for up to three years to support Master of Science students involved in science or engineering research relevant to Louisiana coastal protection and restoration efforts, as well as exposes the students to Coastal Protection and Restoration Authority (CPRA) activities.
- Among other objectives, Louisiana Discovery-Integration-Application (LaDIA) provides graduate students with training – and a competition – that aids them in their science communications skills. Competition winners receive travel funding to present their research at conferences and workshops.
- LSG provided $10,000 in sponsorships for graduate students to attend the State of the Coast Conference, a biennial event organized by the Coalition to Restore Coastal Louisiana (CRCL) and The Water Institute of the Gulf, to present research results on coastal protection and restoration projects. This sponsorship paid registration for 30 students to attend the conference.
- LSG provides vehicle and some financial support for graduate students to attend regional and national conferences such as Gulf Estuarine Research Society, Coastal and Estuarine Research Federation biennial conference, and other regional graduate student meetings.

Student Support (Table 5)

	2010	2011	2012	2013	2014
UROP	16*	13	18**	10	10
CSAP	11	12	12	12	12
Grad Students	22	23	24	18	19
Legal Interns	1	5	6	4	6
LaDIA	N/A	N/A	N/A	N/A	7

* One project involved seven undergraduate students
** One project involved nine undergraduate students

Since 1968, Louisiana Sea Grant has supported more than 1,050 graduate students. Thirty-four Coastal Science Assistantship Program (CSAP) students have been trained since 2008. And 161 Undergraduate Research Opportunities Program (UROP) students have been funded since 1992.

STAKEHOLDER ENGAGEMENT

Leadership by Staff on Boards and Committees

Louisiana Sea Grant employees have held more than 60 leadership and committee positions since the last site review. LSG personnel's placement on these various boards and panels reflect the local, regional, and national respect for the program. LSG continues to be called upon to serve on panels that, in effect, are to mediate discussions among stakeholders and State and Federal organizations in the aftermath of both natural and human disasters. That will certainly continue. Examples can be found in Appendix A.

Partnerships

Louisiana Sea Grant has more than 350 partners that reflect the mix of the national, regional, State, and local collaborations in which the program engages. It is from these organizations that LSG draws its various board members to seek guidance in strategic planning. Many of LSG's national partners operate on the regional level; LSG is particularly active and pleased with the Regional NOAA Team engagement in Gulf of Mexico. The program's large number of local partnerships reflects the involvement of LSG's MEP personnel in parish, State, and other local efforts. A salient result of the program's partnership efforts is that it results in leveraged funds. A list of key partnerships can be found in Appendix B.

Stakeholder Engagement Process

Since 1968, Louisiana Sea Grant has helped address many of the complex and often interrelated ecological, economic, and social challenges that affect coastal Louisiana – one of the United States' most complex, dynamic, and vulnerable coastal regions. The magnitude of these persistent – and more recently disruptive – challenges and the program's limited resources require a practical, well defined, and adaptable approach, as well as reliance on partners in an extensive network of State and regional universities, Federal and State resource management agencies, the private sector, and citizen groups.

The program thrives on excellent information exchange, facilitated via several communication mechanisms. Researchers sponsored by LSG regularly attend and present at national meetings and publish in peer-reviewed journals. The program management team meets on a regular basis; and the three outreach components, plus selected research faculty, hold organized meetings on a quarterly basis (as well as on a project-specific basis) to discuss projects, activities, and research updates, and to interact directly with the management team. All have come to rely on Louisiana Sea Grant's websites, which in addition to containing valuable information, have become an excellent integration tool. More routine communications and information exchanges rely on e-mails, listservs, land and cellular phone conferences, and occasional use of distance-learning technologies. Other examples of LSG stakeholder engagement include:

- LSG Advisory Council – appointed by the LSG Executive Director. Consisting of leaders from academia, State and local government, industry, and the public, the Council brings a wide variety of viewpoints to the program and helps ensure LSG's accountability to Sea Grant constituencies. Council members also are invited to attend pre-proposal and proposal review panel meetings, and many members participate in research and outreach activities.

- Research/Outreach Coordination – Sea Grant is a program with its base in the academic sector and its roots in Extension and outreach. Researchers are encouraged to engage MEP personnel in the full proposal development and implementation process in order to develop a planned outreach component for their projects. LSG's MEP agents and specialists possess technical expertise on a wide range of subjects and knowledge of local geographic, social, and governmental circumstances.

- Grassroots Connections – MEP personnel have their own advisory committees to aid in developing individual scopes of work, as noted early in the briefing book. Through educational programs and practical assistance, LSG Extension serves Louisiana's coastal population, which comprises about 85 percent of the state's residents. Sea Grant Extension agents, who live in the coastal areas they serve, and Extension specialists, who are based in the LSU AgCenter, connect residents to university research.

- Print and Presentations – LSG uses workshops, town hall meetings, newsletters, other meetings, newspaper columns, presentations to civic groups, journal articles, pamphlets, circulars, and program and regional websites to convey coastal and marine-related information to stakeholders. Through social media and listservs, LSG constituents also can share concerns and questions on marine and costal issues.

- Evaluation – Louisiana Sea Grant's Education project employs pre- and post-test evaluations to gauge student and teacher knowledge levels to measure comprehension, develop appropriate learning materials, and to gauge program effectiveness.

- Additional stakeholder engagement is accomplished through regional planning efforts, town hall-style meetings, distance education activities, conferences, campus visits, social networking, participation in public events, and face-to-face meetings. LSG personnel are adept at employing traditional as well as new methods of connecting with the program's constituents.

- Quarterly Meetings – The primary mechanism for interaction amongst Marine Extension project members is a two-day meeting that has been held quarterly for more than 40 years. Members rely on this forum for information exchange and coordination between campus and field offices. The extension director works with project members to plan these meetings and to recruit technical speakers on a wide range of program-relevant topics.

Sea Grant Extension professionals serve the state's coastal residents – about 85 percent of Louisiana's population. Extension agents and specialists, many of whom live in coastal communities, connect residents to university-based research in such areas as natural fisheries, seafood production and processing, and coastal and wetland management.

Activities and Projects with Sea Grant and NOAA Partners

Sea Grant Regional Research Initiatives

The four Gulf of Mexico Sea Grant Programs have an excellent working relationship. The programs have funded six regional research projects over three funding cycles totaling $3.8 million in partnership with the NOAA National Ocean Service (NOS) and the EPA Gulf of Mexico Program. The outreach programs work together on regional in-reach network meetings and a regional economics project. Most recently, the programs initiated a partnership with the Gulf of Mexico Research Initiative (GoMRI) to conduct oil spill research extension.

Louisiana Homeowners Handbook to Prepare for Natural Hazards

The Louisiana Homeowners Handbook to Prepare for Natural Hazards was created to help coastal residents prepare for natural hazards so that risks to family and property may be reduced. The handbook explains the forces of nature that act on structures during storms, including the dangers associated with high winds, heavy rain, and storm surge. It further lays out ways to gird a home against these forces to minimize or negate their effects, as well as information on how to reduce the human toll exacted by dangerous storms. Louisiana Sea Grant produced the handbook with the help of other state, regional and national organizations. The book was funded through a program of the Gulf of Mexico Alliance (GOMA) that aims to see each Gulf state prepare its own guidelines for coastal residents in their state. To date, more than 15,000 copies have been distributed.

Assisting Communities through the 2013 Community Rating System

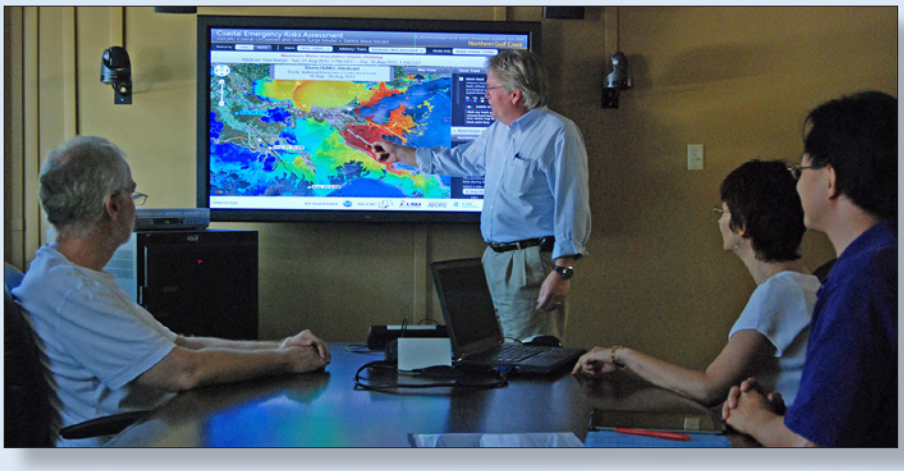
The project team is working with local coastal communities participating in the National Flood Insurance Program (NFIP) to facilitate the transition to the 2013 CRS Coordinators' Manual and provide technical assistance in maintaining and improving the class rating under the new manual with emphasis on outreach, such as the creation of a Program for Public Information (PPI). The team is working with the Mississippi Gulf Coast Coastal Hazard Outreach Strategy Team (C-HOST) and the Louisiana Southwest Informational Floodplain Team (SWIFT) to strategically develop materials that best address the needs of communities participating in the Community Rating System (CRS). In Mississippi, C-HOST is a regional outreach team comprised of building officials, certified floodplain managers, NFIP CRS coordinators, and planning officials that serve the CRS communities along the Mississippi Gulf Coast. In Louisiana, SWIFT consists of floodplain managers and planners from three parishes (Vermilion, Cameron, and Calcasieu) and three municipalities (the cities of Sulphur, Lake Charles, and Iowa). Materials developed through this project will serve as a model for other coastal communities throughout the Gulf. Collaborators include Louisiana Sea Grant Law & Policy Program, Mississippi-Alabama Sea Grant, Mississippi-Alabama Sea Grant Legal Program, Blue Urchin, Grand Bay National Estuarine Research Reserve.

Safe Harbor Options Studied

Louisiana Sea Grant is spearheading a study looking into safe harbor options (page 2 at the hyperlink) for commercial fishermen in the Vermilion Bay area. The idea is to identify which points along waterways are passable and which are impassable due to depth, in light of the vessel dimensions of the commercial fishing fleet in the area. Once the information has been collected and researchers have an idea of what the water bottoms look like, engineers can create designs and develop size and cost estimates of what the infrastructure for a safe harbor might entail. The project is the result of a $35,000 FEMA Community Resilience Innovation Challenges grant, sponsored by the Rockefeller Foundation.

Coastal Emergency Risks Assessment

Drawing on the resources of Louisiana State University's Center for Computation & Technology, scientists at the LSU School of the Coast & Environment have developed the Coastal Emergency Risks Assessment interactive website system (CERA) to visualize several parameters from the ADCIRC Coastal Circulation and Storm Surge Model during an active hurricane. These parameters include storm surge, wind speed, and water inundation above ground. The CERA interactive website system, established with support from Louisiana Sea Grant and the Coastal Hazards Center of Excellence at the University of North Carolina at Chapel Hill, focuses on two areas – the Gulf of Mexico and the Atlantic Coast. The system presents five-day forecasts of storm surge inundation and delivers the model results in near real-time every six hours. The CERA interactive website system is used by the National Hurricane Center, Weather Forecast Centers at the National Oceanic and Atmospheric Administration (NOAA), the United States Coast Guard and the Governor's Office of Homeland Security and Emergency Preparedness in Louisiana. Additionally, the CERA research group at LSU, in conjunction with Louisiana Sea Grant, has held ADCIRC/CERA training events at Louisiana State University.



Louisiana Sea Grant is helping develop more accurate hurricane storm surge forecasts. Those forecasts are made available to emergency management officials through the Coastal Emergency Risks Assessment (CERA) interactive website.

Louisiana Direct

Louisiana Sea Grant Extension personnel secured a $549,000 grant from the Gulf States Marine Fisheries Commission for expansion of the Delcambre Direct seafood-marketing program, an online direct marketing effort connecting local fishermen to seafood consumers. In the past three years, the program, now called Louisiana Direct, has been expanded to four coastal locations. Louisiana Direct allows fishermen to receive a premium price for their product, often pre-selling much of their catch through their online presence before they reach dock.

Louisiana Fisheries Forward

Louisiana Sea Grant Extension personnel secured a $1.2 million grant to develop a professionalism-training program for commercial fishermen. The program, Louisiana Fisheries Forward (LFF), is a voluntary curriculum of web-based videos, printed materials, and workshops focusing on issues ranging from quality assurance to business planning. In 2014, more than 600 commercial fishermen participated in LFF workshops held at coastal locations throughout the state.

Quantifying the Economic Value of Ecosystem Services of Oyster Farming

This project examined the ecosystem services provided and the environmental impacts of off-bottom oyster farming. The LSGLPP component involved determining state-specific submerged land leasing and permitting processes and associated fees for off-bottom oyster farming throughout the Gulf of Mexico. Collaborators include Auburn University, Louisiana Sea Grant, Louisiana Sea Grant Law & Policy Program, Mississippi-Alabama Sea Grant, Mississippi-Alabama Sea Grant Legal Program, Shellfish Environmental Services, Northern Economics.

Trade Adjustment Act

Louisiana Sea Grant Extension agents partnered with the Farm Service Agency to provide the intensive technical training mandated under the Trade Adjustment Act (TAA). Recent trade petitions from the Gulf shrimp sector secured more than $100 million in TAA (page 5 at the hyperlink) funding, but to be eligible for financial payments, shrimpers had to first complete 12 hours of technical assistance training. A total of 2,351 shrimp harvesters in Louisiana qualified. Topics ranging from product quality to business plan development were featured in more than 60 coastal meetings conducted by Marine Extension agents from November 2010 to April 2011.

Bayou St. John Restoration

In 1699, the French explorer Pierre Le Moyne Sieur d'Iberville encountered American Indians as he was stumbling around the southern shores of Lake Pontchartrain in southern Louisiana. He was looking for a short overland route to the river, and the Indians brought him to a sleepy bayou that successfully put he and his men near the east bank of the Mississippi. That discovery of what would become known as Bayou St. John (BSJ) fated the placement of the colony of Nouvelle Orleans, providing a calm-water access route for the wind-driven trade to and from the center of the Louisiana Territory. With the invention of the steam engine and then internal combustion, the trade route on Bayou St. John fell from favor, giving way to the Mississippi River. The once critical bayou degraded to a relic distributary whose main significance was a flood liability during hurricanes. In 2011, the fate and character of BSJ changed. As part of the NOAA's Hydrological Restoration Program, a proposal submitted by Louisiana Sea Grant was awarded initial funding to restore vital water flow to BSJ by eliminating redundant and dysfunctional water control structures built in the 1960s. With support and supplemental funding from the Orleans Levee District, the publically championed project was finished in late 2013. Involvement of Burk-Kleinpeter Inc. Engineering and additional participation by no less than 12 uncompensated agencies/organizations, supplemental channel dredging completed the connection between the Lake's brackish waters and the interior of BSJ. Suitable aquatic species once again are recolonizing the tidally influenced bayou.

Challenges of Natural Resource Economics & Policy

Louisiana Sea Grant worked in conjunction with LSU's Center for Natural Resource Economics & Policy to coordinate socioeconomic research symposia in 2004, 2007, 2010, and 2013. These triennial forums have become the primary venue for coastal economics research in the Gulf of Mexico region, and participation has tripled since the inaugural meeting. The 2013 CNREP conference focused on ecosystem services valuation and featured 120 technical presentations from 205 attendees representing 17 U.S. states and seven countries. The fifth national CNREP forum is scheduled for spring 2016.

GoMRI Oil Spill Research Outreach Program

The four Gulf of Mexico Sea Grant college programs (GoMEXSGP) are funded by the Gulf of Mexico Research Initiative (GoMRI) to implement a two-year extension and outreach (EO) program. The purpose of this project is to enhance the overall GoMRI outreach program in the Gulf of Mexico and beyond by translating findings from GoMRI research into useable products and information for targeted high-value audiences, using the locally-based and stakeholder-driven Sea Grant EO network. Ultimately, the program will demonstrate how high quality science, such as that coming from GoMRI sponsored work, is critical for a healthy Gulf of Mexico. The GoMRI/Sea Grant outreach program functions regionally and shares results regionally and nationally through the Sea Grant network and enhances the economic, environmental, and/or societal benefits of GoMRI's work. The end-result of implementing this project will be a high return on the investment from GoMRI's research program by transferring oil spill research results effectively and efficiently to target audiences.

Ocean Commotion

Ocean Commotion offers nearly 2,000 students in grades K-8 an opportunity to learn about a host of issues that range far beyond ocean-exclusive themes in a lively, hands-on learning environment. Exhibit topics include coastal marshes and wetlands, invasive species, local ecosystems, boating safety, and Louisiana geology and wildlife. More than 60 presenters from private business, universities around the state, government agencies, and public, non-profit, and private educational organizations participate as exhibitors in the annual event that has been held for 17 years.

Annually, more than 2,000 young people in grades K-8 participate in Ocean Commotion – a hands-on coastal stewardship fair hosted by Louisiana Sea Grant. The children learn about everything from water safety to coastal ecosystems.

Marsh Manuevers

Marsh Maneuvers is a four-day camp held for high school 4-H Club and Junior Leadership members each summer at Rockefeller Wildlife Refuge in Grand Chenier. Since the program's inception more than 20 years ago, it has become well known for its hands-on educational activities related to coastal ecology, wetland loss, and key social issues affecting the health and economic well-being of Louisiana's coastal communities. More than 600 high school students have participated in the program since its inception. Marsh Maneuvers is hosted by the LSU AgCenter in cooperation with the Louisiana Sea Grant College Program and the Louisiana Department of Wildlife and Fisheries.

The entire month of July, LSG personnel operate Marsh Maneuvers. Each week, a different group of high school students experiences hands-on coastal stewardship and restoration activities.

High School Oral History Project

After two and a half years, Louisiana Sea Grant's NOAA-funded Coastal Change Oral History Project has concluded. The objective was to gather oral histories from people living in at-risk parts of southern Louisiana while simultaneously involving high school students of those communities. Nineteen interviews have been archived with the T. Harry Williams Center for Oral History at LSU, where they can be referenced and used by researchers. Approximately 40 high school students from Orleans, LaFourche, St. Mary and Cameron parishes collected the interviews, transcribed the recordings, and even created an art piece and original music composition as a result of the project. A video – The Telling Tide – documenting the project can be viewed on Louisiana Sea Grant's YouTube channel.

Sci-TEK-Related Initiative

Louisiana Sea Grant and the Mississippi-Alabama Sea Grant Consortium, in partnership with the University of New Orleans and Louisiana's Coastal Protection and Restoration Authority, has funded an on-going research program focused on the integration of the traditional ecological knowledge (TEK) of local coastal stakeholders with science-based geospatial datasets to inform restoration decision-making and hazard mitigation planning. Through this multidisciplinary knowledge integration effort, the researchers have worked closely with a diverse set of local stakeholders in coastal Mississippi and Louisiana. The methods developed are designed around meaningful stakeholder engagement strategies that involve a two-way exchange of information to build spatial representations of stakeholder issue-based priorities. Those spatial representations can be used as a basis for developing recommendations for coastal restoration projects and local hazard mitigation plans that include effective stakeholder input and compliment related scientific modeling results.

Exchange Offers Insights into Storm Recovery

More than a year and a half after Hurricane Sandy made landfall in the northeast, the Sea Grant programs in New Jersey, New York, and Connecticut were still dealing with storm recovery issues – ranging from community resilience and flood insurance to impacts on recreational fisheries and marina reconstruction. In the nine years since Hurricanes Katrina and Rita, Louisiana Sea Grant addressed many of the issues Sandy survivors continue to face and may have to manage for years to come. So, in May 2014, Pete Rowe, New Jersey Sea Grant Extension leader; Jon Miller, N.J. coastal process specialist; Ryan Orgera, N.J. coastal community resilience project manager; and Jay Tanski, New York Sea Grant costal processes and facilities specialist, flew into New Orleans for a Louisiana Sea Grant-sponsored week-long storm recovery learning experience. The quartet drove nearly 500 miles and met with about 40 people who shared their Katrina and Rita recovery experiences and perspectives. For additional details, visit http://tinyurl.com/kjnbsfe.

Louisiana Department of Wildlife and Fisheries biologist Mark Schexnayder discusses Bucktown Marina redevelopment following Hurricane Katrina with New Jersey Extension leader Peter Rowe, NJ coastal community specialist Ryan Orgera, and New York coastal processes specialist Jay Tanski.

PROGRAM CHANGES RESULTING FROM PREVIOUS REVIEW

2011 PAT Recommendations

The 2011 site review team made two recommendations, 10 findings, and 15 suggestions.

RECOMMENDATIONS

Recommendation: We recommend that the LASG Advisory Council be more fully engaged on a regular basis and meet annually or semi-annually with LASG staff. A suggestion stemming from this recommendation would be to encourage LSU to vet ideas using this advisory board, such that the Council could become an advisory vehicle for LSU's coastal and marine programs.

Recommendation: The LASG should increase programming to assist local communities (of place and interest) in recognizing and understanding the risks and implications of profound changes to their environment. For example, an increase in social science programming could allow these risks to be understood by chronicling oral histories and cultural data to record ongoing changes, as a complement to physical data and model predictions. With significant research and program development resources in this area, these social science findings could be useful for targeted outreach (e.g., The Gulf of Mexico Climate Community of Practice) to effectively communicate about and address complex and contentious issues, such as climate change and sea level rise. Following a multi-pronged approach likely will enhance the leadership role of LASG for research and outreach on these coastal issues.

Response: We enthusiastically embrace and have actually already implemented both recommendations. We had a very productive Advisory Council meeting in December and at that meeting we included LSU's Vice Chancellor of Research; he had the opportunity to discuss mechanisms for engaging our Advisory Council in coastal activities at Louisiana State University. It is our intent to continue to meet in person on an annual basis in December and conduct a formal group conference call in the late spring so we in fact will meet twice per year. Regarding the second recommendation, Louisiana Sea Grant already increased its programming to assist local communities in understanding the risks and implications of changes to their environment. Our Community of Practice for Coastal Resiliency and Sustainability spans the Gulf regions with the other Sea Grant programs and has not engaged five Louisiana communities. We have plans to engage five new communities over the next year. We have actively engaged the social science departments of LSU to participate in this effort and that is working well.

Only one Finding merited a response, which was addressed by filling the director of Marine Extension position. All Suggestions were found to be meritorious, and several were implemented immediately. That included reaching out to the LSU Honors College to establish a connection between UROP and the Honors College, and the Sea Grant Legal Program actively engage the LSU law school and Tulane on coastal law courses, to name a few.

Appendix A

Leadership by Staff on Boards and Committees

International and National

Coastal and Estuarine Research Federation Board (Twilley, president-elect)

National and Regional

Barataria-Terrebonne National Estuary Management Program
- Scientific Advisory Committee (Caffey)
- Education Action Plan Team (Lindstedt)

Environmental Protection Agency
- Gulf of Mexico Program Citizens Advisory Committee (LeBlanc)

Gulf of Mexico Alliance
- Environmental Education Priority Issue Team (Lindstedt)
- Coastal Community Resilience Priority Issue Team (Daigle)

Gulf of Mexico Coastal Ocean Observing System Education & Outreach Council (Lindstedt)

Gulf of Mexico Fisheries Management Council
- Scientific and Statistical Committee (Wilkins)

National Shellfisheries Association
- Industry Committee (Supan)

Southern Association of Marine Educators (Lindstedt)

USDA/Natural Resource Conservation Service
- State Wetlands Advisory Committee (Caffey)

National Science Foundation, Workshop Chair, Coastal SEES Program (Twilley)

National Oceanic and Atmospheric Administration
- Northern Gulf Institute (Caffey)

Gulf States Marine Fisheries Commission
- Sea Grant Extension Advisory Panel (Lively)

Mississippi River Basin Invasive Panel on Aquatic Nuisance Species (Lively)

Asian Carp Marketing Summit Advisory Board (Lively)

Invasive Lionfish Control Ad-Hoc Committee (Lively)

Gulf Seafood Marketing Coalition (Lively)

Seafood Science and Technology Society (Falgout)

Red Cross Coastal Resilience Network (Daigle)

Gulf of Mexico Community of Practice
- Planning Committee (Daigle, Land)

Gulf Coast Resilient Communities Program
- Climate Adaptation and Resilience Resource Team (Daigle)

Southwest Center for Agricultural Health, Injury Prevention and Education
- Advisory Board (Shirley)

US Dept of Defense - Coastal/Estuarine Research Program Technical Advisory Committee (Twilley)

State and Local

Audubon Nature Institute
- Technical Advisory Committee (Twilley)

Calcasieu Parish Storm Water Environmental Action Team (Savoie)
Calcasieu River and Waterways Harbor Safety Committee (Savoie)
Calcasieu Oyster Task Force (Savoie)
Cameron Parish Wetlands Advisory Committee (Savoie)
Cameron-Creole Watershed Advisory Committee (Savoie)
Center for Planning Excellence
- Coastal Best Practices Advisory Board (Wilkins)

Coalition to Restore Coastal Louisiana
- Board of Directors (Davis, Wilkins, Daigle)

Coastal Protection and Restoration Authority (CPRA)
- Framework Development Committee (Twilley)
- Flood Risk & Resilience Viewer Workgroup (Daigle, Wilkins)

Coastal Wetlands Planning, Protection and Restoration Act
- Public Outreach Committee (Caffey)

Delcambre Steering Committee (Hymel)
Institute for Seafood Studies (Falgout)
Gulf States Marine Fisheries Commission
- Oysters Technical Task Force (Supan)

Louisiana Alligator Farmers and Ranchers Association (Shirley)
Louisiana Board of Regents
- Post-Katrina Response Planning Committee (Caffey)

Louisiana Coastal Master Plan Cultural Heritage Technical Advisory Committee (Davis)
Louisiana Department of Natural Resources
- Coastal Impact Assessment Program Committee (Caffey)

Louisiana Department of Wildlife and Fisheries
- Environmental Education Commission (Lindstedt)
- Louisiana Blue Crab Task Force (Daigle, Lively)
- Louisiana Fishing Community Recovery Coalition (Caffey)
- Louisiana Wild Caught Crawfish Task Force (Daigle)
- Artificial Reef Council (Twilley)

Louisiana Farm Bureau Federation
- Oyster Commodity Committee (Supan)

Louisiana University Gulf Research Consortium (Twilley)
Louisiana Outdoor Writers Association
- Board of Directors (Caffey)

Louisiana Oyster Task Force
- Research Committee (Supan)

Louisiana Oyster Dealers and Growers Association (Supan)
Louisiana Science Teachers Association
- Board of Directors (J. Schexnayder)

Louisiana Seafood Professionalism Program (Falgout)

Louisiana Clean and Resilient Marina Program (Land)
Louisiana Hypoxia Working Group Advisory Committee (LeBlanc)
State of the Coast Steering Committee (Twilley)
Tangipahoa and St. Tammany Parish Water Quality Task Force (Franze)
Vermilion Parish Coastal Advisory Council (Shirley)
Vermillion Parish Comprehensive Resiliency Plan
    Stakeholder Leadership Group (Daigle)
Water Institute of the Gulf
    Academic Liaison Group (Twilley, chair)

Sea Grant

Sea Grant Association Board (Twilley)
Sea Grant Association Program Management Committee (Twilley)
Fisheries Gear and Technology Grant and Loan Program (Savoie)
National Sea Grant Educators Network (Lindstedt)
National Sea Grant Legal Network (Wilkins)
National Sea Grant Focus Team
    Healthy Coastal Ecosystems (Lindstedt)
    Sustainable Coastal Development (Daigle, Land)
Sea Grant Association
    Networks Advisory Council (Kron)
    National Legal Network (Wilkins)
Fisheries Extension Network Council (Lively)

Appendix B

Partners

Aeros Cultured Oyster Co. Inc.
Alaska Sea Grant
Al's Shrimp Company
AmeriCorps
American Fisheries Society
America's Wetland Foundation
Anna Marie Seafood
Aquarium of the Americas
Aquaculture Research Station (LSU)
Aquaculture System Technologies
Aquaculture Systems Technologies, LLC
Arcadis Inc.
Assumption Parish
Atchafalaya Basin Program
Auburn University
Audubon Society
Audubon Zoo
Bait House Seafood
Barataria-Terrebonne National Estuary Program
Baton Rouge Earth Day Festival
Baton Rouge Magnet High School
Baton Rouge Sail and Power Squadron
Baton Rouge Zoo
Bayou Land Res. Conservation. and Development Council
Bayou Interfaith Shared Community Organizing
Bayou Rebirth
Beacon of Hope
Big Grapes Inc.
Bluebonnet Swamp Nature Center
Blue Cross Blue Shield
Bluewater Shrimp Company
Boh Bros. Construction
Boston College
BourgFresh Seafood
British Petroleum
Bureau of Ocean Energy Management
Calcasieu Parish
Calcasieu Parish Planning Department
Calcasieu Parish School Board

Cameron Parish
Cameron Parish School Board
Caminada Bay Oyster Company
City of Mandeville
City Park of New Orleans, LA
Coalition to Save Coastal Louisiana
Coastal Community Consulting Inc.
Coastal Conservation Association
Coastal Services Center
Coastal Wetland Planning, Protection and Restoration Act
Columbia University
ConocoPhillips
Crescent City Farmers' Market
David Chauvin's Seafood Company, LLC
Delcambre Direct Marketing
East Jefferson Levee District
Economic Development Administration
Environmental Protection Agency
Exxon Mobil
Farm Pride Processors
Farm Service Agency
Federal Emergency Management Agency
Fishing Community Recovery Coalition
Food and Drug Administration
Ford Foundation
Fish America
Florida Sea Grant
Floating Islands Environmental Solutions
French Research Institute for Exploitation of the Sea
Friends of the Fishermen Foundation
Goldman Sachs
Gotta-Go Charters
Governor's Office Office of Coastal Activities
Grand Isle Port Commission
Greater New Orleans Foundation
Greater New Orleans, Inc.
Greater New Orleans Master Gardeners
Gulf Coast Refrigeration
Gulf Island Shrimp and Seafood Company
Gulf of Mexico Fishery Management Council
Gulf Restoration Network
Gulf States Marine Fisheries Commission
Gulf Coast Marine Laboratory
Gulf of Mexico Alliance

Gulf of Mexico Coastal and Ocean Observing System
Gulf of Mexico Fisheries Management Council
Gulf of Mexico Program
Gulf States Marine Fisheries Commission
Hands On New Orleans
Harlan's Louisiana Fish
HNTB Associates
Holy Cross Neighborhood Association
Honam Sea Grant (Korea Sea Grant)
Horizon Initiative New Orleans
Iberia Industrial Development Foundation
Iberia Parish
Iberia Parish School Board
Interstate Shellfish Sanitation Conference
Institute for Trade and Transportation Studies
Interstate Shellfish Conference
Iowa State University
J&M Industries Inc.
Jean Lafitte National Historical Park and Nature Preserve
Jefferson Fly Fishing Club
Jefferson Parish
Jefferson Parish CZM Committee
Jefferson Parish Economic Development Corp.
Jefferson Parish Port
Jefferson Parish Marine Fisheries Advisory Board
Jefferson Parish School Board
Kellogg Foundation
Lafayette Parish
Lafourche Parish
Lafourche Parish School Board
Lafourche School Board
Lake Borgne Levee District
Lake Charles Pilots Association
Lake Charles Power Squadron
Lake Pontchartrain Basin Foundation
Lake Pontchartrain Basin Restoration Program
Lake Pontchartrain Fishermen's Association
Lake Pontchartrain Levee District
Long Island Sound Watershed Alliance
Louisiana Alligator Farmers and Ranchers Association
Louisiana Artificial Reef Program
Louisiana Arts and Science Museum
Louisiana Board of Regents
Louisiana Catfish Grower's Association

Louisiana Charter Boat Association
Louisiana Crab Task Force
Louisiana Crawfish Promotion and Research Board
Louisiana Department of Agriculture and Forestry
Louisiana Department of Culture, Recreation and Tourism
Louisiana Department of Economic Development
Louisiana Department of Education
Louisiana Department of Environmental Quality
Louisiana Department of Health and Hospitals
Louisiana Department of Natural Resources
Louisiana Department of Natural Resources Clean Marinas Program
Louisiana Department of Natural Resources Coastal Engineering Division
Louisiana Department of Natural Resources Coastal Management Division
Louisiana Department of Natural Resources Office of Coastal Protection and Restoration
Louisiana Department of Natural Resources Office of State Lands
Louisiana Department of Natural Resources Underwater Obstruction Removal Program
Louisiana Department of Public Education
Louisiana Department of Wildlife and Fisheries
Louisiana Department of Wildlife and Fisheries Nutria Control Program
Louisiana Farm Bureau
Louisiana Geological Survey
Louisiana Governor's Office of Coastal Protection and Restoration
Louisiana Governor's Office of Homeland Security and Emergency Planning
Louisiana Marine Fisheries Museum Task Force
Louisiana National Guard
Louisiana Natural Freshwater Catfish Association
Louisiana Office of Emergency Preparedness
Louisiana Office of the Attorney General
Louisiana Office of the Secretary of State
Louisiana Outdoor Writers Association
Louisiana Oyster Industry Council
Louisiana Recovery Authority
Louisiana Restaurant Association
Louisiana Science Teachers Association
Louisiana Seafood Exchange
Louisiana Seafood Industry Advisory Board
Louisiana State Museum
Louisiana Seafood Promotion and Marketing Board
Louisiana Shrimp Association
Louisiana Shrimp Industry Coalition
Louisiana Small Business Development Center
Louisiana State University
Louisiana State University, AgCenter
Louisiana State University, Center for Natural Resource Economics and Policy

Louisiana State University Coastal Sustainability Studio
Louisiana State University, Medical School
Louisiana Travel Promotion Association
Louisiana Universities Marine Consortium
Louisiana Wildlife Federation
Louisiana Workforce Commission
Luke's Seafood Company
LSU AgCenter Coastal Research Station
LSU AgCenter Hammond Research Station
LSU AgCenter Iberia Research Station
LSU AgCenter Rice Research Station
LSU Department of Agronomy
LSU Department of Biological Engineering
LSU Department of Environmental Science
LSU Food Science Department
LSU School for the Coast & Environment
LSU School of Renewable Natural Resources
LSU School of Veterinary Medicine
Marina and Boatyard Association Louisiana
Mark Staton Company
Market Umbrella
Market Umbrella.org
Martin Ecosystems, Inc.
McNeese State University
Meraux Foundation
Mississippi-Alabama Sea Grant Consortium
Mississippi Charter Boat Captains Association
Mississippi Department of Marine Resources
Mississippi Farmers Market
Mississippi State University
Mobile Bay National Estuary Program
Motivatit Seafood Inc
MSU Dept. of Ag. Economics
Natchitoches National Fish Hatchery
National Centers for Ocean & Coastal Science
National Fish and Wildlife Foundation
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
National Science Foundation
National Weather Service
National Wetlands Research Center
Natural Resources Conservation Service
NASA Stennis Space Center
New Orleans BioDiesel Initiative

New Orleans Fish House
Nicholls State University
Nichols State University
NOAA Damage Assessment Office
NOAA Ocean Survey
NOAA Restoration Office
NOAA Socioeconomic Division
NOAA Restoration Center
Norco Community Development Corporation
Northern Gulf Institute
North Carolina Sea Grant
North Carolina State University
Office of Habitat Conservation
Operation Blessing
Options for Independence & Gulf Coast Marketplace
Orleans Levee District
Orleans Parish
Oyster Dealers and Growers Association
Oyster Task Force
P&J Oyster Co.
Paul Rainey Refuge – Audubon Society
Plaquemines Parish CZM Committee
Plaquemines Parish
Pontchartrain Institute for Environmental Sciences, University of New Orleans
Port of Delcambre
Pontchartrain Blue Crab
Ports Association of Louisiana
Recreational Fishing Research Institute
Sea Grant Association
Sea Grant Extension Advisory Committee
Seedco Financial Fisheries Assistance Center
Shaw Environmental and Infrastructure Group
Shell Oil Company
South Central Planning & Development Commission
Southern Association of Marine Educators
Southern Shrimp Alliance
Southern University
Southern University Law School
Southeastern Louisiana University
Sempra Energy
Shaw Coastal
Ship to Shore Co.
Sierra Club New Orleans Chapter
Southeast Louisiana Flood Protection Authority

Southern Divivision American Fisheries Society
St. Bernard Coastal Zone Management Advisory Committee
St. Bernard Parish
St. Bernard Parish CZM Committee
St. Charles Parish CZM Committee
St. James Parish
St. John Parish CZM Committee
St. Joseph's Academy
St. Martin Parish
St. Mary Parish
St. Scholastica High School
St. Tammany Parish
St. Tammany Environmental Services Committee
Tangipahoa Parish
Taylor Seafood Inc.
Tetra Tech Inc.
Terrebonne Parish
Terrebonne Parish School Board
Terrebonne Readiness & Assistance Coalition
Terrebonne School Board
Texas A&M University, Galveston
Texas Sea Grant
The Consortium for Plant Biotechnology Research, Inc.
The McIlhenny Company
The Nature Conservancy
The Rockefeller Foundation
The Water Institute of the Gulf
Tidewater, Inc
TMDL Assessment Team
Tony's Seafood
Town of Grand Isle CZM Committee
Town of Jean Lafitte CZM Committee
Tulane Water Resources Institute
Twin Parish Port Commission
Trace Register, LLC
Trade Adjustment Act
Tulane University
United Houma Nation
University of Arkansas Risk Management Center
University of California, San Diego
University of Delaware
University of Florida
University of Florida IFAS
University of Georgia

Unviversity of Missouri
University of Louisiana at Lafayette
University Of Minnesota
Unviversity of Missouri
University of New Orleans
University of South Alabama
University of Southern Mississippi
University Of Southwestern Louisiana
University of Texas Health Science Center
University of West Florida
US Army Corps of Engineers
US Bureau of Ocean Energy Management
US Coast Guard
U.S Coast Guard Auxiliary
US Department of Agriculture
US Department of Homeland Security
US Department of Interior
US Environmental Protection Agency
US Fish and Wildlife Service
US Food and Drug Administration
US Foreign Agriculture Service
US Geological Survey
Vermilion Parish School Board
Vietnamese American Fishermen's Association
Virginia Institute of Marine Science
Vermilion Parish
W&E Oyster Company
Waldemar Nelson, Inc.
Warnell School
Wetland Watchers – Harry Hurst Middle School
Westdale Heights Academic Magnet School
Whiskey Creek Oyster Hatchery
Whole Foods Market
Wilson's Oysters
Woods Hole Marine Policy Center
World Aquaculture Society
Xavier University Of Louisiana
Yale Center for Coastal Watershed Systems