

LOUISIANA UNIVERSITIES MARINE CONSORTIUM (LUMCON) Annual Report Fy 2015



Message from the Executive Director

Dr. Nancy N. Rabalais

Since 1979 the State has dedicated funds to LUMCON for staffing of resident faculty, basic operations and deferred maintenance. Additional funds come from the research programs of the resident faculty, federal and state grants, vessel operations, and cafeteria/dormitory operations. Capital outlay funds support major projects such as the rebuilding of the bulkhead at the Fourchon Camp at Port Four-



chon. The LUMCON's Woody J. DeFelice Marine Center is the prime real estate for LUMCON's activities strategically located in Cocodrie, LA, in the upper end of one of Louisiana's larger estuaries, Terrebonne-Timbalier Bay about two hours from New Orleans and 3 hours from Baton Rouge.

At the Marine Center dock in Cocodrie are the R/V *Pelican* and the R/V *Acadiana* and occasionally the University of Southern Mississippi's R/V *Point Sur*. LUMCON operates the R/V *Point Sur* for the benefit of multiple users in the northern Gulf of Mexico. The Marine Center boat basin is full at times with many larger research vessels and smaller vessels that support research and education activities.

Marine science and education activities continue to be a major focus at the Marine Center. Please read about all these activities in this report.

LUMCON continues to evolve. A "5-Year Master Plan for 2016-2020" was completed in early 2015 [http://www.lumcon.edu/ADMINISTRATION/5-year_Master_Plan_2016-2020.pdf] followed by a Business Plan in October 2015 for the operational mechanisms for developing a greater sustainability of LUMCON. [http://www.lumcon.edu/ADMINISTRATION/LUMCONStrategicBusinessPlan2015.pdf]

- Enhance Louisiana universities' marine science curricula with engagement in skill-based, field-based courses at the Marine Center and collaborative teaching opportunities across the state's universities.
- Enhance the opportunities for research led by Louisiana's university faculty that utilize LUMCON's outstanding facilities and resources to their best advantage.
- Support and maintain an outstanding research facility for coastal and marine studies.



The fortunes of LUMCON funding have met the same financial limitations of all Louisiana institutions of higher education. However, the faculty and staff of the LUMCON Marine Center have worked vigorously and successfully to bring in external dollars that ensure that the State's investment is continuing to provide support for the marine and coastal science that is crucial to Louisiana's ecosystems and economy.

Nany Rabalais

The LUMCON Marine Center faculty members' research programs address multiple needs of the state of Louisiana with regard to its living and non-living resources, including the social systems that envelope them all. Habitats for sustainable fisheries and wildlife support ecosystems and economies. Researchers address how ecosystems may be affected by changing salinity, climate change, sea-level rise, delivery of sediments, water residence time and nutrient over-enrichment. Details of biogeochemical processes, such as nitrogen and carbon cycling, greenhouse gas flux, and sedimentary processes, such as modified hydrology, subsidence, accumulation of delta lobes, interactions of groundwater with surface hydrology, are critical to understanding the natural and human-causes of coastal change. The dynamics of hypoxia (oxygen depletion) and harmful algal blooms that result primarily from excess nitrogen and phosphorus delivery to coastal waters have long been a focus of research.

Fisheries research ranges from the response of fish and early life stages of commercially important species to environmental change, including toxicity from oil spills, to better understanding of the life histories of important coastal fishes and shellfish. Many basics of saltwater aquaculture are discovered in the wet laboratory facilities of the Marine Center.

Louisiana's living and non-living resources had long intermingled in the activities of the petroleum industry. Researchers at the Marine Center are following the effects of the *Deepwater Horizon* oil spill in coastal ecosystems and in laboratory experiments. The structures of the industry in the form of oil and gas platforms attract fish and attached organisms, and LUMCON addresses the impact of these structures on their associated communities.

Edward Chesney, Associate Professor

Fisheries and fish ecology, Gulf of Mexico fish communities

Early life history of larval stages of fish, growth, behavior, feeding ecology, health

Toxicology of Macondo oil on early life stages of fish and crabs

Brian J. Roberts, Associate Professor

Aquatic ecosystem ecology and biogeochemistry

Wetland carbon nutrient cycling, greenhouse gas exchange

Adaptations of wetlands to changes in salinity, water level, oil spills

Nancy N. Rabalais, Executive Director and Professor

Continental shelf ecosystems influenced by large rivers, eutrophication, hypoxia

Animal sediment dynamics, benthic pelagic coupling, community analyses

Effects of pollution on coastal ecosystems

Alexander Kolker, Associate Professor

Geological oceanography with an emphasis on sediment dynamics

Groundwater and subterranean flow in the Mississippi River delta

Deltaic processes, subsidence, stratigraphy of accumulating delta lobes

Paul W. Sammarco, Professor

Larval dispersal and recruitment processes in corals

Zoogeography of corals on a continuum from highly localized to distant dispersal

Artificial structures as attractants for coral species

FY 2014–2015 PUBLICATIONS, LUMCON

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- Fry B, Justić D, Riekenberg P, Swenson E, Turner E, Wang L, Pride L, Rabalais N, Kurtz J, Lehrter J, Murrell M, Shadwick E, Boyd B. 2015. Carbon dynamics on the Louisiana continental shelf and cross-shelf feeding of hypoxia. *Estuaries and Coasts* 38:703-721. DOI: 10.1007/s12237-014-9863-9
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- Joye SB, Montoya JP, Murawski SA, Özgökmen TM, Wade TL, Montuoro R, Roberts BJ, Hollander DJ, Jeffrey WH, Chanton JP. 2014. A rapid response study of the Hercules gas well blowout. *Eos, Transactions of the American Geophysical* Union 95(38):341-342. DOI: 10.1002/2014EO380002
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- Middleton BA, Johnson D, **Roberts BJ**. 2015. Hydrologic remediation for the *Deepwater Horizon* incident drove ancillary primary production increase in coastal swamps. *Ecohydrology* (special issue) DOI: 10.1002/eco.1625.
- **Rabalais NN**. 2014. Viewpoint: Assessing early looks at biological responses to the Macondo event, *BioScience* 69: 757-759. DOI 10.1093/biosci/
- **Rabalais NN.** 2015. Commentary: Human impacts on fisheries across the land-sea interface. *Proceedings of the National Academy of Sciences, USA <u>www.pnas.org/cgi/doi/10.1073/pnas.1505815112</u>.*
- Rabotyagov SS, Campbell TD, White M, Arnold J, Atwood J, Norfleet J, Kling CL, Gassman PW, Valcu A, Richardson J, Turner RE, Rabalais NN. 2015. Cost-effective targeting of conservation investments to reduce the northern Gulf of Mexico hypoxic zone. *Proceedings of the National Academy of Sciences, USA*. online early edition <u>www.pnas.org/cgi/ doi/10.1073/pnas.1405837111</u>
- **Roberts BJ**, Doty SM. 2015. Spatial and temporal patterns of benthic respiration and net nutrient fluxes in the Atchafalaya River delta estuary. *Estuaries and Coasts* DOI: 10.1007/s12237-015-9965-z.
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The Marine Center Library

The library provides access to the historic and latest literature on marine science and digitally-based projects that serve local and regional users.

DWH Spill Research Collection

Bibliographies of published research related to the DWH spill with PDF copies of all published research between 2010 and 2014. The Library is accessing commercial and freely available citation databases, as well as GOMRI press releases, to identify currently published research.

Institutional Repository

Current and archival (pre-digital era) content published by Marine Center researchers since the founding of the institution. To date, all published research from senior faculty members Dagg, Sammarco, and Chesney have been uploaded into the IR, with access via embedded links in corresponding MARC records in the library's electronic catalog. Current work focuses on digitizing Dr. Rabalais' research from the 1970s to 1990s and cataloging and uploading current research by junior faculty

New Interlibrary Loan Interface Speeds Transactions

In 2014, the library transitioned its OCLC Interlibrary Loan operations to a new interface (OCLC WorldShare). Almost all material being requested is sent out to libraries in PDF format with a turnaround time of less than 24 hours (a 50% reduction since 2011).

Library Catalog as a Cloud-Based Service

The marine center library staff aided LOUIS in the migration of the library's integrated library system (ILS) from servers housed at LSU to SirsiDynix's Software-as-a-Service (SaaS) cloud-based servers. This eliminates any downtime of the e -catalog due to catastrophic weather-related events in Louisiana.

Ongoing Projects

A web-based, searchable annotated bibliography of oil spill dispersant literature from 1960 through 2008. When the Dispersants web portal went live, a steady, increasing demand over the next years was anticipated. Due to the DWH spill on ongoing public concerns over the use of dispersants, use has increased dramatically in recent years. There was more than a five-fold increase in visits to the Dispersants site between 2012 and 2013, with sustained high use in 2014 and 2015. Efforts to identify funding and/or partnerships (government and industry) to bring the bibliography up to date are underway.

Annual Visits to Dispersants Bibliography Web Portal 25000 20000 number of visits 15000 10000 5000 0 2008 2009 2011 2012 2013 2014 2010 2015 2007 year

K-12 & Teacher Programs

LUMCON continues to offer amazing K-12 and teacher education programs at the Marine Center and elsewhere. The table below shows the group types, the total number of attendees, and the number of contact hours of LUMCON programs for FY15. The field trips, camps, and workshops were held at the marine center. The outreach events include activities or programs offered by the educational staff away from the marine center. Outreach events include classroom visits, community festivals, and conferences.

Group Type	Total Number of	Total Number of Stu-	Total Number of Con-
Group Type	Trips	dents	tact Hours
Field Trips	77	2,199	20,094
Camps	4	44	8,058
Teacher Workshops	13	190	3,276
Outreach Events	31	9,292	7,677
Total	125	11,725	39,105

LUMCON's K-12 & Teacher Education programs continue to evolve and grow to meet the changes in the needs of today's students and teachers.

The education staff ensure that the field trip program offerings remain current and relevant, add many new activities and laboratory offerings, or modify existing programs to expose students to the changing understand-

ing of our coastal systems. New emphasis is also being placed on introducing students to current technologies used in environmental research like ROVs (remotely operated vehicles) and drifters (equipment floating with the currents that are equipped with sensors). Participants are now being shown how geographic information systems (GIS) and remote sensing are instrumental in scientific investigation. Data management is now an advanced theme for higher level experiences.

The teacher education program continued to expand the opportunities provided to teachers. During FY15 four teacher workshops were hosted and completed with great successes. The teacher workshops hosted the Marine Center are in great demand and topics are generally those that provide educators with the knowledge, skill sets, and resources they need to more effectively teach their students about Louisiana's coastal environments. The teachers participate through hands-on investigations in the field and the classroom. STEM-based activities and resources continue to be provided that incorporate environmental and ocean literacy practices.

Engagement of the science staff from the Marine Center and elsewhere into the K-12 and teacher education programs continues to expand. What better way is there to transfer new science results to those who need them in the classroom. The marine education programs are uniquely place-based, hands-on experiences that offer high impact, skill-based education that are grade or knowledge appropriate for all visitors.



Students from FMS set up an experiment to determine if the feeding rate of oysters affected by exposure to oil.



Teachers identify vegetation on a transect during the 2015 Ship Time & Shoreline workshop.

Program Highlights:

K-12

- **Bayouside Classroom** is a student-based water monitoring program is in its 15th year and has expanded to the upper part of the Mississippi River watershed. Teachers and students from different areas within the watershed are working to help monitor the state of our aquatic systems. The data are accessible at www.lumcon.edu/bayousideclassroom.
- **LUMCON's Estuarine Awareness and Discovery (LEAD) Camp** is offered to provide an introduction to marine sciences. Offered every year this camp strives to increase the knowledge among high school students about marine science and environmental science.
- **Field Marine Science (FMS) Research Camp** is designed to increase students' interested in pursuing science as a career—how field work is conducted, how to organize larger field-base projects, and how to effectively communicate scientific results to different audiences. This program is modeled after the REU program.
- **Coastal Waters Art & Science Camp** was once again offered as an art and science collaboration. This camp integrates art into science as a way to communicate and visualize observations and scientific information.

Teacher

- **Ship Time & Shoreline** is a week-long teacher workshop that gives teachers the experience of conducting field research and understanding methods that scientists use to collect environmental data. Praise for this workshop continues as reported by participates to be the "best teacher workshop ever attended."
- **Biodiversity and Susceptibilities of Louisiana Saltmarshes**, a Louisiana Environmental Education Commission (LEEC)-funded workshop that provides teachers with the knowledge and resources to build and use collections of preserved samples and a dataset to teach students about the living resources of coastal Louisiana saltmarshes.
- **From H-2-O** is a BTNEP-funded program that trains and provides teachers with the knowledge, skills, and resources needed to use Bayouside Classroom (K-12) with their students. The program expanded in FY15 to include teachers from the middle of the Mississippi River Watershed.

Public

- **Gulf Lagniappe** is a series of adult education workshops, offered through the Coastal Waters Consortium, that provide adults with the opportunity to meet scientists and learn their fields of expertise, research results, and the application of their results to issues of relevance to coastal Louisiana.
- **Family Day Events** (example, Dads & Daughters Discovering Coastal Waters Science) are unique programs that bridge generations and engage multiple levels of society in better understanding environmental issues and their importance to them and others.

University Education

LUMCON Courses [Note: courses in FY15 include the second term of the summer semester, the fall semester, the spring semester, and the first term of the summer semester.]

LUMCON offers courses that provide graduate and undergraduate education to member university students with the unique experience of being able to investigate and explore Louisiana's coastal and marine environments. Students who take these place-based, hands-on courses gain the advantage of learning from some of the world's foremost experts on Louisiana ecosystems and local and national environmental issues. The combination of the high quality education and the ability to access field sites supports educational opportunities for students that are difficult to offer on campuses. The focus of all LUMCON courses is meaningful field experiences while providing students with a skill set that makes them competitive on a national level. Students register through their home university and are in-residence at the LUMCON Marine Center for 2-4 weeks. The table below shows the course titles and number students enrolled in LUMCON courses for FY15.

Course Name	No. of Students	No. of Credits	<u>Undergraduate</u>	<u>Graduate</u>
Changing Coastal Oceans	9	27	6	3
Coastal Landscape Photography	8	3	1	0
Intro to Marine Zoology	6	24	6	0
Coastal Field Geology	4	12	3	1
Marine Field Ecology	8	24	8	0
Total	35	90	24	4



Students examine a mud sample with Dr. Paul Sammarco during the CCO field trip.

• Changing Coastal Oceans (CCO)

The Changing Coastal Ocean (CCO, spring semester, video) changed in the way it was offered. The course was offered over many years to students on campus through a compressed video platform. In recent years this has limited the number of students to whom the course could be offered because of the migration away from this particular technology on campuses. FY15 was the first year LUMCON offered the course using GoToMeetings format (a popular video conferencing platform). The result is a broader impact, because students can enroll at any member

university that lists the course. The use of video conferencing resulted in fewer disruptions due to technological problems and offered more flexibility to students and instructors. The field trip for CCO was held in

March of FY15. Excursions into Terrebonne Bay and marshes surrounding the marine center brought the context of subjects covered in class lectures to an integration with hands-on experiences in the field and laboratory.

• Summer Courses

There was a higher than average enrollment of students in LUMCON summer field courses in FY15. At total of 31 students took courses at the marine center. Summer courses are field intensive and allow students the chance to immerse themselves in the ecosystems that surround the marine center. Students in the Introduction to Marine Zoology course were able to participate in a research cruise on the R/V *Point Sur*, a vessel operated by LUMCON for the University of Southern Mississippi. Other courses took students both near and far to study areas. The Wetland Vegetation class visited many areas to study diverse vegetation types



Students of IMZ document their research cruise on the R/V *Point Sur*. Photo Credit: Sarah Barrios.

along a gradient sality regiemes. They also got first-hand looks at restoration projects and monitoring sites.

• University Field Trips

Students participating in LUMCON field trips are given the opportunity to experience coastal ecosystems and put into practice sampling techniques learned in courses. Field trips also provide students with a real-world application of content taught in courses on campus, exposure to new career options, and engagement with LUMCON's science staff.



Students get photo bombed by a bottlenose

dolphin while collecting samples on the field

trip. Photo credit: Liz Olson.

Groups that visit the marine center learn from the knowledgeable education staff and utilize the world-class science resources. FY15 field trips were highly successful; the number of students participating in field trips for FY15 totaled 445. The number of field trips during the spring semester was higher than average (see figure below). Numbers for FY16 are anticipated to be well above the number historically

recorded due to increased utilization of these services by member universities and in-

creases in the number of educational staff.





Participants work on creating a map during the annual barn raising at the marine center.

Other Activities

Public Groups

Public Labs Barn Raising: The Public Lab is an organization dedicated to the development of low-cost tools for community based environmental monitoring and research. The group was originally founded by citizens concerned by the limited amount of information being supplied during the 2010 BP oil spill. Now funded by state, regional, and national partners, the group strives to build a grassroots community of people interested in citizen science. Each year the group meets at the marine center to offer a training, informational, and networking workshop to its members. The marine center and LUMCON have become valuable partners for the

success of this experience. Continued partnership is being sought along with new ways for LUMCON to become more involved.



An estimated 1,500 visitors came to the **DeFelice Marine Center for the Open** House celebration on April 25, 2015. The parking lot was full and overflowing to the highway, the visitors coming up the stairs continued to come and the line for a hot dog lunch seemed to never end. We consider this a success. It might just be the best attended Open House in the history of the LUMCON Marine Center in Cocodrie LA!

SHIP OPERATING SCHEDULE FISCAL YEAR 2014-2015

2014 R/V PELICAN

Cruise Dates	Map Index/Area/Purpose	P.I./Institution/Proposal No.	Port(s)	Days/Agency/Status/ Clearance
2014				
1-Jul	NA9/GOM/	DiMarco- S/TAMU/	Cocodrie	2/Other/F
2-Jul	GISR	N/A	Cocodrie	No
7-Jul	NA9/GOM/	Rosenheim- B./Tulane/	Cocodrie	4/Other/F
10-Jul	GoMRI/CARTHE	N/A	Cocodrie	No
13-Jul	NA9/GOM/	Hamdan- L./NRL-DC/	Cocodrie	14/Navy/F
26-Jul	Oiled Shipwrecks	N/A	Cocodrie	No
27-Jul	NA9/GOM/	Rabalais- N./LUMCON/	Cocodrie	7/NOAA/F
2-Aug	Нурохіа	N/A	Cocodrie	No
3-Aug	NA9/GOM/	Somerton- D./AFSC/	Cocodrie	19/NOAA/F
21-Aug	UHSI Efficiency	N/A	Cocodrie	No
25-Aug	NA9/GOM/	Sammarco- P./LUMCON	Cocodrie	3/BOEM/F
27-Aug	Multiple Invasive	N/A	Cocodrie	No
30-Aug	NA9/GOM/	Lutken- C./Ole Miss/	Cocodrie	8/BOEM/F
6-Sep	Gas Hydrates SFO	N/A	Cocodrie	No
7-Sep	NA9/GOM/	Felder- D./EHI	Cocodrie	8/GOMRI/F
14-Sep	Benthic Dredging	N/A	Cocodrie	No
18-Sep	NA9/GOM/	Highsmith- R./Ole Miss/	Cocodrie	8/GOMRI/F
25-Sep	ECOGIG	N/A	Cocodrie	No
28-Sep	NA9/GOM/	Williams- P./Fugro-GEOS	Cocodrie	7/Other/F
4-Oct	Moorings	N/A	Cocodrie	No
6-Oct	NA9/GOM/	Delaune- S./LaDWF/	Cocodrie	5/State/F
10-Oct :	SEAMAP	N/A	Cocodrie	No
11-Oct	NA9/GOM/	Franks- J./EPA-R6/	Cocodrie	6/EPA/F
16-Oct	Galveston Tissue	N/A	Cocodrie	No
26-Oct	NA9/GOM/	Gima- A./LaDWF/	Cocodrie	4/State/F
29-Oct :	SEAMAP	N/A	Cocodrie	No
3-Nov	NA9/GOM/	Gupte- K./BMT	Cocodrie	3/Other/F
5-Nov	Moorings	N/A	Cocodrie	No
10-Nov	NA9/GOM/	Kurrus- K./EHI	Cocodrie	3/Other/F
12-Nov	Moorings		Cocodrie	No
4-Dec	NA9/GOM/	Gima- A./LaDWF/	Cocodrie	4/State/F
7-Dec: 2015	SEAMAP	N/A	Cocodrie	NO
18-Jan J	NA9/GOM/	Williams- P./Fugro/	Cocodrie	14/Other/F
31-Jan I	Mooring rotation	N/A	Cocodrie	No
1-Feb l	NA9/GOM/	Gima- A./LaDWF/	Cocodrie	5/State/F
5-Feb l	NSGF	N/A	Cocodrie	No
11-Feb I	NA9/GOM/	Malbrough- J./LUMCON/	Cocodrie	2/Other/
12-Feb I	NSF Inspection	N/A	Cocodrie	NON-OP
3-Mar I	NA9/GOM/	Rynolds- C./USGS/	Cocodrie	2/USGS/F
4-Mar S	Sediment Trap Cal	N/A	Cocodrie	No
16-Mar I	NA9/GOM/	Gima- A./LaDWF/	Cocodrie	3/State/F
18-Marl	NSGF	N/A	Cocodrie	NO
25-Marl	NA9/GUM	JOYE- S./ECUGIG02/	Cocodrie	
30-iviar i	viooring turn-around	N/A	cocourie	INU

2015 R/V Pelican Continued

Cruise	P.I./Institution/		Days/Agency/	Agency	Funded	TOTAL
Dates Map Index/Area/Purpos	e Proposal No.	Port(s)	Status/Clearance	BOEM	18	18
14-Apr NA9/GOM/	DiMarco- S/TAMU/	Cocodrie	6/GOMRI/F	EPA	6	6
19-Apr GISR	N/A	Cocodrie	No	GOMRI	36	36
21-Apr NA9/GOM/	Szabo- D./WHG	Cocodrie	3/Other/F	NAVY	37	37
23-Apr Mooring Deployment	N/A	Cocodrie	No	NOAA	37	37
26-Apr NA9/GOM/	Hamdan- L./Navy	Cocodrie	7/Navy-NRL/F	State	21	21
2-May Deep Carbon Pathways	N/A	Cocodrie	No	Other	47	47
3-May NA9/GOM/	Szabo- D./WHG	Cocodrie	3/Other/F	TOTAL	204	204
5-May Mooring Deployment	N/A	Cocodrie	No			
6-May NA9/GOM/	Singer- J./SAIC/	Cocodrie	7/BOEM/F			
12-May Lagrangian	N/A	Cocodrie	No			
14-May NA9/GOM/	Williams- P./Fugro/	Cocodrie	8/Other/F			
21-May Moorings	N/A	Cocodrie	No			
25-May NA9/GOM/	Diercks- A./USM/	Cocodrie	11/NOAA/F			
4-Jun NIUST MBES Survey	N/A	Cocodrie	No			
6-Jun NA9/GOM/	Jolliff- J./NRL/	Cocodrie	16/Navy-NRL/F			
21-Jun Plume CASE	N/A	Cocodrie	No			
23-Jun NA9/GOM/	Sidorovskaia- N./ULL/	Cocodrie	8/GOMRI/F			
30-Jun GISR-II	N/A	Cocodrie	No			

R/V POINT SUR

		Man Index/Area/	P. I. /Institution/Proposal		Dave/Agonov/Statue/
Cru	uise Dates	Purpose	No.	Port(s)	Clearance
	5-Mar	Transit	Graham- M./USM	Moss Landing	25/INST/T
	29-Mar	Transit	N/A	Gulfport	NO
	11-Apr I	NA9/GOM/	Asper- V./USM/	Gulfport	1/GOMRI/E
	11-Apr I	Educational trip	N/A	Gulfport	No
	19-Apr I	NA9/GOM/	Asper- V./USM/	Gulfport	6/GOMRI/F
	24-Apr (CPMCORDE	N/A	Gulfport	No
	2-May I	NA9/GOM/	Sutton- T./NOVA	Gulfport	8/GOMRI/F
	8-May I	MOC10 Deployment	N/A	Gulfport	No
	13-May I	NA9/GOM Mooring Deploy-	Gupte- N/BMT	Cocodrie	3/OTHER/F
	15-Mayı	ment	N/A	Cocodrie	No
	18-Oct I	NA9/GOM/	Gima- A./LADWF/	Cocodrie	6/STATE/F
	23-Oct I	NSGF survey	N/A	Cocodrie	No
	7-Jun l	NA9/GOM	Asper- V./Sail Drone/	Cocodrie	1/STATE/F
	7-Jun l	Drone Deployment	N/A	Gulfport	No
	18-Jun I	NA9/GOM/	Gima- A./LADWF/	Cocodrie	5/STATE/F
	22-Jun S	SEAMAP	N/A	Cocodrie	No
	22-Jun l	NA9/GOM/	Malbrough- J./LUMCON/	Cocodrie	2/INST/E
	23-Jun I	Education Trip	N/A	Gulfport	No
	24-Jun l	NA9/GOM	Edwards- C./UGA/	Cocodrie	1/INST/F
	24-Jun (Glider Deployment	N/A	Cocodrie	No
	30-Jun I 1-Jul I	NA9/GOM/ Education Trip	Graham- M./USM/ N/A	Cocodrie Gulfport	2/INST/E No

Totals:	
Research days	30
Education days	5
Transit Days	25

Vessels overview



The R/V *Pelican* maintained her usual active schedule of 204 days at sea in support of State, Federal, Educational and Other oceanographic research. The R/V *Pelican* has averaged 193 days at sea over the last 5 years and continues to be the workhorse of the UNOLS fleet with the most active schedule among the general oceanographic research vessels stationed in the Gulf of Mexico.

The R/V *Pelican* conducted a shipyard maintenance period at

Allied Shipyard in Golden Meadow, Louisiana during the months of December and January. Improvements, general and preventative maintenance and regulatory inspections were conducted.

At the request of the National Science Foundation, JMS Naval Architects, conducted a gen-

eral condition survey of the R/V *Pelican* which included both a pier side and underway inspections on the 11th and 12th of February 2015 in Cocodrie, LA. The R/V *Pelican* received all **GOOD** ratings in Lifesaving and Firefighting, Habitability, Main Propulsion, Electric Power Plant, Auxiliary Systems, Communications and Navigation Equipment, Deck Machinery, Scientific Weight Handling, Scientific Outfitting, Science Facilities and a **VERY GOOD** rating in Hull condition. The vessel also received an **UNLIMITED RATING** which states the vessel has UNOLS and NSF's approval to continue to operate an unlimited number of sea days per year in support of Federal oceanographic research.





In early 2015, LUMCON reached an agreement with the University of Southern Mississippi to deliver their newly acquired 135 ft. oceanographic research vessel, R/V *Point Sur*, from Moss Landing, California to her new home in Gulfport, Mississippi. An agreement was reached for LUMCON to manage, schedule and operate the R/V *Point Sur* which allows LUMCON to have control and oversite over vessel (of opportunity) availability in the northern Gulf of Mexico. The R/V *Point Sur* arrived in Gulfport in

late March and began conducting research cruises by mid-April. We look forward to the opportunity of operating this vessel over 100 days at sea a year while conducting numerous educational cruises which will benefit students attending USM and LUMCON.



BTNEP is a partnership of government, business, scientists, conservation organizations, agricultural interests, and individuals for the *preservation*, *protection*, and *restoration* of the Barataria-Terrebonne National Estuary in southeast Louisiana.

If you live, work, or play in the Barataria-Terrebonne National Estuary or are one of the millions that use its resources across the nation, you have a vested interest in its restoration.

BTNEP is funded by the Environmental Protection Agency and is sponsored by the State of Louisiana through LUMCON. Some current projects:

Native Plant Materials Program & Volunteer Program – BTNEP has a huge campaign underway to restore native habitats along Louisiana's coast. The BTNEP Native Plant Materials Program supplies native woody species for the "Maritime Forest Ridge and Marsh Restoration Project at Port Fourchon." The program has expanded to meet similar needs in throughout the estuary. Each year, thousands of woody species and tens of thousands of herbaceous species are planted within the estuary by hundreds of BTNEP volunteers who come from all over the estuary.





South Louisiana Wetlands Discovery Center Youth Summit – The summit brings young leaders together to discuss the challenges and potential solutions for Gulf Coast communities. High school students from the region attend a two-day event to develop action plans addressing local concerns that can be implemented in their communities. Over the subsequent year, they work on the action plans with the guidance of the scientific community.

From H-2-O Teacher Training Workshop – "From H-2-O" is a contentdriven, teacher training and workshop held each year at the Marine Center in Cocodrie, as a partnership with LUMCON to further the understanding of the estuary's complex and vital water resources. The workshop provides everything needed to implement the Bayouside Classroom Program in their schools. Bayouside Classroom is a studentbased water monitoring network throughout Louisiana.





Survey & Tracking of Rio Grande Cichlids – The Rio

Grande cichlid is an invasive fish from northern Mexico that was introduced to the New Orleans area in the 1990s, most like from aquarium dumps. It has been spreading rapidly and displacing native fish. The project identifies the occurrence of this fish in the Barataria and Terrebonne basins to inform and refine response and management activities.

Celebrating 25 years of work to preserve our past and protect our future!

LUMCON RESEA	JMCON RESEARCH GRANTS, July 1, 2014 TO June 30, 2015				
PROJECT NUM BER	GRANTING ENTITY	FACULTY MEMBER(S)	AWARD AMOUNT		
674VAIS	VAISALA	DR NANCY RABALAIS	\$ 1,200.00		
674EP15	EPA	DEAN BLANCHARD	\$ 538,000.00		
674HPOX	EPA	DR NANCY RABALAIS	\$ 88,474.00		
674CSP2	LSU - A&M/COASTAL PROTECTION AND RESTORATION AU- THORITY (CPRA)	DR. ALEX KOLKER	\$ 50,000.00		
674EP16	EPA	SUSAN TESTROET- BERGERON	\$ 600,000.00		
674SBRD	COASTAL PROTECTION & RESTORATION AUTHORITY (CPRA)	SUSAN TESTROET- BERGERON	\$ 362,760.00		
674DELT	NOAA	DR. ALEX KOLKER	\$ 268,756.00		
		SUB-TOTAL (NEW GRANTS)	1,909,190		

RENEWED, EXTENDED PROJECTS, WITH ADDITIONAL FUNDS:			
PROJECT NUM- BER	GRANTING ENTITY	FACULTY MEMBER(S)	ADDITIONAL AWARD
674121C	NSF	JOE MALBROUGH	\$ 24,300.00
674121C	NSF	JOE MALBROUGH	\$ 40,500.00
674LDWF	LA DEPT. WILDLIFE & FISHERIES	DR. ED CHESNEY	\$ 63,199.00
6741154	NOAA/NCCOS	DR. MICHAEL DAGG	\$ 13,938.00
674169D	NOAA/NCCOS	DR. NANCY RABALAIS	\$ 118,002.00
674LEEC	LA ENVIRONMENTAL EDUCATION COMMISSION/LDWF	JENNIFER "MURT" CONOVER	\$ 2,492.00
674CPRA	COASTAL PROTECTION RESTORATION AUTHORITY	KERRY ST. PE	\$ 33,228.00
6741802	TEXAS A&M RESEARCH FNDTN/NOAA	DR. NANCY RABALAIS	\$ 30,000.00
674MINV	BUREAU OF OCEAN ENERGY MANAGEMENT (BOEM)	DR. PAUL SAMMARCO	\$ 20,830.50
674BSAP	LSU - OFFICE OF COASTAL PROTECTION AND RESTORA- TION (OCPR)	DR. BRIAN ROBERTS	\$ 50,000.00
674ONR2	DEPT OF DEFENSE/NAVY	JOE MALBROUGH	\$ 166,500.00
674115E	NSF	JOE MALBROUGH	\$ 11,958.00
674121C	NSF	JOE MALBROUGH	\$ 216,777.00
674LSCO	STRATUS CONSULTING/ LOSCO/CPRA/NRDA	DR. ED CHESNEY	\$ 236,311.06
6741802	TEXAS A&M RESEARCH FOUNDATION/NOAA	DR. NANCY RABALAIS	\$ 30,000.00
674121C	NSF	JOE MALBROUGH	\$ 101,300.00
674115E	NSF	JOE MALBROUGH	\$ 11,958.00
674115E	NSF	JOE MALBROUGH	\$ 12,771.00
		SUB-TOTAL	1,184.065
		GRAND TOTAL	3,093,255

CONTRACT PERIOD	TITLE OF AWARD
06/01/2014 - 5/31/2015	LIGHTNING DETECTION SENSOR SIGHT AGREEMENT
10/01/2014 - 9/30/2019	BARATARIA TERREBONNE NATIONAL ESTUARY PROGRAM - FY 2015
08/01/2014 - 07/31/2015	VESSEL SUPPLEMENTAL SUPPORT FOR 2014 SHELFWIDE HYPOXIA CRUISE
06/01/2015 - 05/31/2018	COASTAL SCIENCE ASSISTANSHIP PROGRAM (CSAP)
10/01/2015 -09/30/2018	BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM - FY16
06/01/2015 - 05/31/2018	EVALUATION OF SHOREBIRD NESTING HABITAT ENHANCEMENT USING HARD SUBSTRATE
09/01/2015 - 08/31/2017	THE CENTRAL ROLE OF THE MISSIPPI RIVER AND ITS DELTA IN THE OCEANOGRAPHY AND ECOL- OGY OF THE GULF OF MEXICO LARGE MARINE ECOSYSTEM

CONTRACT PERIOD	TITLE OF AWARD
NO CHANGE	SHIP OPERATIONS - 2012 - AMENDMENT 2
NO CHANGE	SHIP OPERATIONS - 2012 AMENDMENT 3
EXT TO 06/30/2015	EVALUATING THE EFFECTS OF OIL & GAS EXPLOITATION REEF HABITAT FOR NEWLY RECRUITED SNAPPER - YR 2 FUNDS AND EXTENSION
EXT TO 08/31/2015	NGOMEX 2009 - MECHANISMS CONTROLLING HYPOXIA: INTEGRATED CAUSAL MODELING - SHIP FUNDS ADDED
EXT TO 08/31/2015	NGOMEX09: INTEGRATED ECOSYSTEM MODELING OF THE CAUSES OF HYPOXIA SHIP FUNDS ADDED - AMENDMENT 6
EXT TO '05/31/2015	BIODIVERSITY AND SUSCEPTABILITY OF LOUISIANA SALT MARSHES
NO CHANGE	PIPING PLOVER AND NESTING BIRD SURVEYS AND PRE-CONSTRUCTION BENTHIC INVERTE- BRATE SAMPLING
EXT TO'05/31/2015	CONTINUED SUPPORT OF GCOOS-RA DATA PORTAL, YEAR 2
EXT TO 12/31/2015	GENETIC AFFINITIES IN POPULATIONS OF THE INVASIVE INDO-PACIFIC CORAL TUBASTRAEA MICANTHUS ON N GOM PLATFORMS
EXT TO 05/31/2016	COASTAL SCIENCE ASSISTANSHIP PROGRAM (CSAP)
EXT TO 12/31/2014	NAVY SHIPTIME - PELICAN 2013
EXT TO 03/31/2017	OCEANOGRAPHIC TECHNICAL SERVICES, 2012-2016 R/V PELICAN
NO CHANGE	SHIP OPERATIONS 2012 - R/V PELICAN (SUPPLEMENT FUNDING)
EXT TO 12/31/2015	POTENTIAL LETHAL AND SUBLETHAL EFFECTS OF DEEPWATER HORIZON (DWH) OIL AND/OR DISPERSANT OF GULF MENHADEN
EXT TO 05/31/2016	CONTINUED SUPPORT OF GCOOS-RA DATA PORTAL, YEAR 5
NO CHANGE	SHIP OPERATIONS - 2015 SHIP DAYS
EXT TO 03/31/2017	OCEANOGRAPHIC TECHNICAL SERVICES, 2012-2016, R/V PELICAN AMENDMENT 02
NO CHANGE	OCEANOGRAPHIC TECHNICAL SERVICES, 2012-2016, R/V PELICAN AMENDMENT 03





