Retired oil and gas platforms may acquire new roles in Gulf of Mexico

Passage of bill would encourage the transformation of decommissioned platforms into artificial reefs, mariculture facilities or research stations

LUMCON researcher Dr. Paul Sammarco and Louisiana State University graduate student Amy Atchison slowly descend through the water, admiring schools of sergeant majors and several nearby silky sharks and barracuda. At 60 feet, they pause to photograph a vibrant brain coral and take some notes. Where are they? Aruba? Cozumel? Far from it! These scientists, armed with cameras, collection equipment and analytical tools, are diving among the oil and gas platforms that border the NOAA Flower Gardens National Marine Sanctuary in the northern Gulf of Mexico.

Sammarco and Atchison are documenting the expansion of coral species among these platforms that both extract oil and gas and serve as artificial reefs. Their work has gained the interest of U.S. Representative David Vitter (R-La.), who in June, proposed to Congress the Rigs to Reefs Act of 2003 (House Resolution 2654). This past September, Sammarco and his colleagues traveled to Washington, D.C., to address the Subcommittee on Energy and Natural Resources and meet with Congressman Vitter, other congressional staff members and the Heritage Commission. He provided them with evidence in support of the bill, which stands to expand the uses for decommissioned platforms in the Gulf.

Under Congressman Vitter’s proposed amendment to the Outer Continental Shelf Lands Act, the Secretary of the Interior would have the power to authorize the use of decommissioned platforms for artificial reefs, the development of on-site mariculture facilities and scientific research. Current Minerals Management Service (MMS) regulations require oil and gas companies to remove platforms within one year of lease expiration; however, they do have the option to convert them into artificial reefs if they meet the criteria outlined under the National Artificial Reef Plan and state-run artificial reef programs (Rigs-to-Reefs). Most oil and gas companies instead opt to tow them to shore for processing as scrap metal.

Vitter’s legislation would encourage oil and gas companies to leave platforms in the Gulf for use as artificial reefs or for mariculture or research purposes by offering them tax incentives and a transfer of liability for the platform to the party taking over the operation.

According to Les Dauterive, retired MMS Rigs-to-Reefs Coordinator and Dive Safety Officer, at the end of 2003, approximately 200 platforms had been converted into artificial reefs in the Gulf of Mexico. Those platforms that
A Message from LUMCON’s Interim Administrator

Visitors to LUMCON’s DeFelice Marine Center may notice the newly planted wax myrtle, live oak, sweet acacia, mulberry and hackberry trees in our front yard. This planting is part of an evaluation of woody plants for their usefulness in restoration of our natural coastal ridge (chenier) and barrier island habitats—habitats that are vital components of our coastal landscape. This planting is one of several test plots implemented under a partnership effort coordinated by the Migratory Bird Habitat Action Plan Team of the Barataria-Terrebonne National Estuary Program. The USDA Golden Meadow Plant Materials Center in Galliano, La. and the Louisiana State University Agricultural Center are principal partners in this effort. For several years, personnel at the Plant Materials Center have been preparing for these trials by growing plants in their greenhouses.

Coastal ridge habitats are especially important to the enormous number of neotropical migrant birds that fly across the Gulf of Mexico to our coast each spring and fall. After the exhausting spring flight from South America, these birds are vulnerable to predators and need thick cover to hide in while they replenish their food and water reserves for the rest of their trip. On their fall return flight from North America, these same habitats allow the birds to replenish fat reserves before flying to their wintering grounds.

We plan to use this addition to LUMCON’s landscape as an educational tool, while we collect data on which plants do best under the sometimes adverse conditions experienced in coastal regions. Shortly after the planting at LUMCON, southerly winds pushed highly saline water onto the newly planted area. Several plants are showing signs of stress as a result. In the end, we will have a better idea of which plants are best suited for large-scale use in future restoration plantings and what parameters affect their growth and survival. In the process, we will hopefully have made LUMCON more appealing to our avian visitors.

With warm regards,
Kerry M. St. Pé
Interim Administrator

LUMCON Expands its Environmental Data Sharing Efforts

LUMCON has joined the National Data Buoy Center (NDBC), a division of the National Weather Service, in an effort to expand its sharing of oceanographic data. Since October 2003, data gathered from LUMCON’s environmental monitoring stations at Terrebonne Bay, Tambour Bay, Lake Pontchartrain and the DeFelice Marine Center have been posted on the NDBC website at www.ndbc.noaa.gov/Maps/WestGulf.shtml. NDBC now shares this information with national weather forecasting and modeling centers, expanding their range of environmental monitoring in south Louisiana and providing LUMCON with greater national visibility.

Brenda Babin, LUMCON’s Information Technology Manager, spearheaded the effort to have NDBC include data from the Consortium’s stations. She envisions LUMCON’s participation in this national data-sharing network as its first step in joining an international oceanographic data-sharing community.

“LUMCON benefits in many ways by having our data included by the NDBC—from greater recognition for the Consortium, to increased quality assurance,” says Babin. “On a broader scale, all people who live along the Gulf coast can benefit from this data sharing. By supplying accurate data to forecasting and modeling centers, we can only help to strengthen their weather prediction capabilities.”

Visit the NDBC web site (hourly updates) or LUMCON’s web site (real-time updates) at weather.lumcon.edu to get station information on air and water temperature, wind direction and speed, precipitation, salinity and other environmental parameters. LUMCON plans to add its Audubon station to the NDBC program in the future. This station is located in the Mississippi River behind the Audubon Zoo in New Orleans.

Thanks to NDBC, data gathered from LUMCON’s stations (seen here) is now supplied to many forecasting and modeling centers, such as the National Weather Service, the Tropical Prediction Center, the Weather Channel and the Federal Emergency Management Agency.
LUMCON Gears up for Exciting Programs in 2004

LUMCON is offering several educational opportunities for students and instructors in 2004. More information can be attained through the listed contacts or by visiting LUMCON’s web site at www.lumcon.edu.

**University Summer Courses**

**Coastal Landscape Photography** (1 credit, NSU)
- **Dates:** May 17–21
- **Prerequisites:** Registration open to anyone with a basic photography background; must provide own 35mm camera
- **Instructors:** Dr. Gary LeFleur (Nicholls State University), Mr. Dennis Sipiorski (Southeastern University)
- **Special Fee:** $100.00

**Coral Reef Ecology** (3 credits)
- **Dates:** May 31–June 18
- **Prerequisites:** 8 hours biology or permission of instructor
- **Instructor:** Dr. Paul Sammarco (LUMCON)
- **Special Fee:** $1200.00

**Marine Field Ecology** (4 credits)
- **Dates:** July 5–July 30
  - 1 week at the University of Florida
  - 1 week at Seahorse Key Marine Laboratory
- **Prerequisites:** 8 hours biology or permission of instructor
- **Instructors:** Dr. Frank Jordan (Loyola University), Dr. Ken Brown (Louisiana State University)
- **Special Fee:** $150.00

**Marine Geology** (3 credits)
- **Dates:** May 31–June 18
- **Prerequisites:** 2 semesters of geology courses or permission of instructor
- **Instructor:** Dr. Sam Bentley (Louisiana State University)

**Center for Ocean Sciences Education Excellence Teacher/Science Institute**

**Deadlines for Application:**
- **University Summer Courses:** May 1, 2004
- **Coastal Landscape Photography:** May 1, 2004
- **Coral Reef Ecology:** May 1, 2004
- **Marine Field Ecology:** April 15, 2004
- **Marine Geology:** April 15, 2004
- **Center for Ocean Sciences Education Excellence Teacher/Science Institute:** May 15, 2004

**Leads Camp**

**Impacts of Climate Change on Coastal Louisiana—Travel Grants and Internships**

**Deadline for Application:** March 19, 2004

LUMCON will award travel grants and internships for projects aimed at enhancing Louisiana’s capability for understanding and predicting the effects of climate change on the state’s coastal ecosystems.

Four to six travel grants of up to $1500 each will be provided for faculty or graduate students at Louisiana universities to participate at national meetings relevant to our climate change theme during 2004.

Four to six summer internships of up to $1500 each will be provided for undergraduate students from any of Louisiana’s universities to work for 10-week summer periods during 2004 with Dr. Paul Klerks, University of Louisiana at Lafayette (ULL), Dr. Paul Leberg, ULL, or Dr. Vibhas Aravamuthan, Louisiana State University, Baton Rouge.
John Conover is LUMCON’s main information man. Have a question that relates to the marine sciences, but don’t know where to find the answer? Conover will direct you through LUMCON’s periodicals, books and online resources to help you become a “person in the know.” He joined the LUMCON faculty as librarian in July 2000, a choice that was effortlessly made after he visited the facility. “I knew within 15 minutes that this was the right place for me,” says Conover. “I liked its feel. I was confident I had found a positive work environment.”

Conover, an Abilene, Tx., native who now lives in Thibodaux, La., did not set out to become a librarian; in fact, he didn’t consider the career until the end of his undergraduate years at the University of Kansas.

“I was finishing up my bachelor’s degree in history, and was left deciding what I wanted to do after graduation. I loved and still love history, especially medieval European history, but honestly, at that time I just didn’t see myself working in the field,” says Conover.

A history teacher who was also employed as a cataloger at the University library suggested he look into a career in library science. Instead of just shelving the idea away to get dusty, Conover gave it serious consideration and decided, a bit to his own surprise, that this was his correct career path.

Conover graduated in 1990 with his master’s degree in library and information science from Louisiana State University (LSU), Baton Rouge. He worked as both a librarian for Middleton Library at LSU and as head of the government documents department at Nicholls State University in Thibodaux, before accepting a position as LUMCON’s librarian.

During the last three and a half years, Conover and assistant librarian Shanna Duhon have upgraded the library’s technology and have moved it from a print-related library to an increasingly web-based, user-friendly resource.

The LUMCON library is open for use by the public, although its holdings must remain within the facility. Conover will guide guests through the library’s resources to find information for a science report, a technical report, or personal interest. He might even offer you some tips on local birding, an interest of his that ignited after he witnessed a spring fall-out at the Holleymen-Shelley Sanctuary in Cameron Parish, La. A fall-out occurs when migrating birds reach a point of exhaustion and literally drop from the sky, usually coinciding with a spring cold front hitting the coast.

Conover recalls the event with remarkable clarity.

“My brother and I got there before the fall-out began and at that time there were few birds around. I was getting bored, as I usually did after a few minutes of birding. Finally, the front began to move through, the rain started, and it rained really hard for about an hour. We put on our rain gear, went into woods and almost magically, there were birds everywhere...there must have been thousands of them, in trees and on the ground. I remember standing below this hackberry tree when a strong gust of wind came through. This tree went from a bright green tree with no birds, to a bright green tree covered with what looked like Christmas tree ornaments. There were now 60 to 70 Blackburnian warblers in the tree. It still sticks in my mind. You can’t put the event into words. That got me hooked.”

Conover has a pair of binoculars and a spotting scope in his office that overlooks the marsh. The excellent birding opportunities on and around LUMCON’s grounds only add to his appreciation for his employer. One thing Conover admits to missing at LUMCON is the chance to help more people with literature searches. He acknowledges that most people who use our library already know how to navigate through its resources. So, if you’ve been having a difficult time finding information about respiration rates in red snapper, or if you’d like to research toxic algae in the Barataria basin, give Conover a visit, and be sure to bring your binoculars!
The coastal location of LUMCON’s DeFelice Marine Center in Cocodrie, La., not only makes it a great site for a marine science facility, but also makes it a prime location for birding. The roseate spoonbill (Ajaia ajaja), a close relative of the ibises, is one of the most startling wading birds that frequents LUMCON’s grounds. While identification of many wading and shore birds can be difficult...even for experienced birders, this species can easily be recognized by its pink feathers and long bill that widens and flattens at the tip, giving it a spatula-like appearance.

The roseate spoonbill is one of six spoonbill species that exists worldwide; however, it is the only spoonbill that is adorned with pink plumage. The American greater flamingo (Phoenicopterus ruber ruber) also has pink feathers, but one can easily distinguish it from the spoonbill by its much longer legs and its short, heavy, hooked bill; nonetheless, their shared pink coloration has earned the spoonbill one of its more regionally associated nicknames—the Cajun flamingo. The spoonbill’s range spans the Gulf and south Florida Atlantic coast, the Caribbean islands and coastal Central and South America. It can also be found inland of these regions in close proximity to wetlands, rivers and other bodies of water.

Spoonbills are social birds and conduct many of their activities in groups of multiple bird species. They regularly build their nests among colonies of egrets, herons and ibises on islands or over water in dense vegetation, tactics that reduce their threat of predation from terrestrial animals. Unfortunately, their habit of nesting among egrets put them in danger from the late 1800s to the mid 1900s. During this time, egret plumes became sought-after adornments for ladies hats and spoonbill populations suffered as their nests were disturbed and destroyed by hunters in search of feathers. Spoonbills were not commonly hunted for their own feathers (their color rapidly fades), but they were hunted for their meat. Stricter wildlife enforcement placed these birds on the road to recovery in the mid 1900s. While populations in Florida continue to struggle due to loss of nesting and foraging habitat, the number of spoonbills appears to be increasing in Louisiana.

“When I was a kid, the only place you could see spoonbills was in southwest Louisiana,” recalls Bill Vermillion, Fish and Wildlife Biologist with the U.S. Fish and Wildlife Service. “Now, their breeding colonies have expanded east into Plaquemines Parish and north as far as Ville Platte.” David Muth, Chief of Resource Management for Jean Lafitte National Historical Park and Preserve has observed a similar increase in the spoonbill’s range. “We’re even receiving reports of spoonbills showing up in New Orleans City Park,” says Muth.

According to Jay Huner, Director of the Crawfish Research Center at the University of Lafayette, the expansion and growth of the spoonbill population, and of Louisiana’s wading birds in general, may be partially correlated to an increase in the state’s crawfish farming industry. “Crawfish ponds provide a reliable source of food for spoonbills, and we have the world’s largest concentration of these ponds right here in St. Martin Parish,” says Huner. Spoonbills feed primarily on crustaceans such as crawfish and shrimp, and on small fish and insects, which they detect by sweeping their bill back and forth through shallow water.

Crawfish ponds are not just popular feeding grounds for spoonbills, but for other species of wading birds as well. Huner reports a recent estimate of 15,000 pairs of nesting waders in the Lake Martin Heronry, which is located just outside of St. Martin Parish. “As far as spoonbills, seven or eight years ago I was counting maybe three or four

Continued on page 6
Barataria-Terrebonne National Estuary Program Update

By Leslie McVeigh
BTNEP Community Relations Coordinator

The autumn months were packed with activity for the BTNEP staff. September concluded with a successful broadcast of Estuary Live! on the 27th, followed by the BTNEP’s 7th annual La Fete d’Écologie on the 28th. Highlights of the festival included a performance by Amanda Shaw, the thirteen-year-old Cajun fiddler from Mandeville, La., a commemorative poster by local artist Susan Talbot Hoffman celebrating the 200th anniversary of the Louisiana Purchase, and a book signing event by author Mike Tidwell. Tidwell’s recent book Bayou Farewell, the Rich Life and Tragic Death of Louisiana’s Cajun Coast illustrates the gravity of Louisiana’s coastal land loss and features an entire chapter on the BTNEP, including interviews with Program Director Kerry St. Pé.

During October, the Mekong River Commission paid a visit to New Orleans as part of an exchange program sponsored by the Mississippi River Basin Alliance. BTNEP Program Director Kerry St. Pé gave a presentation to the 12 Commission members and staff from Vietnam, Thailand, Laos and Cambodia. Commission members were also given a tour of Bayou Lafourche and its environs, highlighted by a visit to Port Fourchon. Here they had a first-hand look at the central hub of deep-water oil and gas exploration activity in the Gulf of Mexico. Following a shrimp and crab boil at the LUMCON facility at Fourchon, the group enjoyed a walk along Fourchon Beach.

The first weekend in November, approximately 80 people in canoes and kayaks paddled down Bayou Lafourche as part of a four-day, 52-mile adventure. Paddlers experienced the scenic beauty of historic Bayou Lafourche from a “backyard” point of view. The Coastal Restoration Division of the Louisiana Department of Natural Resources provided funding for this third annual Back to the Bayou paddling trip that featured a variety of evening activities and events including a performance local blues musician Tab Benoit, presentations by area wetlands artists including noted nature photographer C.C. Lockwood, and readings by author Mike Tidwell.

BTNEP’s Back to the Bayou paddling trip wasn’t restricted to humans; dogs got in on the action as well (upper photograph). Photographs are supplied courtesy of BTNEP.

Spoonbill, continued from page 5

These spoonbills could be seen from LUMCON’s observation tower, but a short drive put the observer a stone’s-throw away from these stunning animals.

nests in this area,” says Huner. “Now there are hundreds.”

Spoonbills in Louisiana typically breed between April and August. Breeding pairs are seasonally monogamous and share the responsibilities of egg incubation, feeding of the young (through regurgitation) and nest building, although their roles in the later are separately defined. The male gathers the nesting materials, collecting mainly sticks for the frame of the nest and finer plant materials such as leaves, moss and small twigs for the depressed interior. He presents these materials to the female in a ritualized display that may include “head bobbing, crossing and rubbing of bills, and shaking of stick in bill” (Dumas 2000). If she accepts the materials, she then enacts her role as constructor of the nest. The female commonly lays between three to five eggs, which hatch after 22 days of incubation. Juveniles have white plumage that gradually turns to pink after several molts. The pink coloration develops as a result of the birds feeding on crustaceans containing red carotenoid pigments, which become concentrated in the feathers. Adult spoonbills grow to a height of around 32 inches and a body length of 28-34 inches. Their wing span reaches four feet.

Louisiana is fortunate that the roseate spoonbill is making a successful comeback in the state. If you want to experience seeing a spoonbill for yourself (and you really do), Huner recommends visiting Lake Martin in south-central Louisiana from late March through early July. Pack your lunch, your binoculars and a camera and welcome these birds with wide-opened eyes.

The following reference was used for this article:
Platforms, continued from Page 1

are included under Louisiana’s Artificial Reef Program are concentrated in nine regions that are designated as artificial reef planning areas in the Gulf. Platforms that are already located in these regions can be toppled in place or severed at 85 feet below the water’s surface so as not to impede ship traffic. Platforms that are located outside of these areas must be towed and relocated within them. A recent amendment to the Louisiana Artificial Reef Plan allows platforms standing in 400 or more feet of water to remain outside of the nine planning areas, as long as they are located at least two miles from a shipping lane, have a minimal clearance of 85 feet and rise to within 300 feet of the surface. Studies conducted by Louisiana State University and funded by the MMS have shown that fish populations below 300 feet are greatly reduced compared to at shallower depths. In addition, populations of reef-building corals below this depth are negligible or absent due to a lack of sunlight, a requirement for their growth.

In addition to sunlight, corals need a surface on which to grow. Platforms often provide the only attachment site for coral larvae floating in the open Gulf waters. As these corals mature and reproduce, they support the development of entire marine communities, from nearly microscopic invertebrates, to large schools of fish. As a result, many platforms have become popular destinations for recreational divers and both recreational and commercial fishermen. “These artificial reefs have helped to support the economies of not just coastal Louisiana, but of the entire Gulf coast,” says Dauterive.

Sammarco speaks enthusiastically about an even greater potential for decommissioned platforms. He addressed the Subcommittee on Energy and Natural Resources on his support for continued surveying of platforms for corals and organisms with potential pharmaceutical value, using the presence of these organisms as a factor in determining the fate of platforms after lease expiration, and using platforms for the on-site mariculture of these organisms.

“These platforms still have a lot of life in them...just in a different capacity from oil drilling,” says Sammarco. “Athchison and I have already documented 11 Caribbean coral species on platforms surrounding the Flower Gardens Banks. These species are expanding their range to other platforms, and as a result, may help to stabilize the populations of some coral species that are experiencing a drastic decline elsewhere.”

Sammarco believes these coral populations could be further protected through the development of mariculture facilities, which could be constructed on the platforms if Vitter’s legislation passes through Congress.

“We could culture corals under conditions that practically mimic those of their natural environment,” says Sammarco. These specimens could be used for research, education and display purposes without harming their natural populations. We could likewise develop mariculture facilities for organisms that hold potential pharmaceutical value and have been found growing on some of the platforms’ legs.”

One such organism is a deep-sea sponge that contains the compound discodermolide. Research conducted by Dr. Shirley Pomponi, Vice President and Director of Research at Harbor Branch Oceanographic Institution in Fort Pierce, Fl., shows that discodermolide has promising anti-cancer effects, but the sponge contains a low concentration of this large, complex molecule. Sammarco has been collaborating with Pomponi on a culture program for this sponge, which could boost the supply of discodermolide to a level needed for continued research and use, while also protecting its producer from over-harvesting.

Dissenters to the Rigs to Reefs Act of 2003 question whether the development of mariculture facilities or research stations on platforms may harm the environment rather than enhance it. They have cited nutrient enrichment or other forms of pollution around the platforms, the spread of viruses among cultured animals, and the possibility of farm-raised species escaping into the wild as potential environmental threats. These criticisms are being considered carefully by the researchers.

Sammarco is hopeful that the Rigs to Reefs Act of 2003 passes after these issues are seriously addressed. He continues to see corals expanding their range in the open Gulf, as they slowly colonize neighboring platforms. He has witnessed many platforms already become concentrated areas for marine life, and as a result, a haven for fishermen and divers. If this legislation passes, some may also become important sites for mariculture and research.
Recent Publications


Recent Grants

Building of a Boardwalk on LUMCON Property
Investigator: Richard DeMay
10/1/03–6/30/04
$8,000
Barataria-Terrebonne National Estuary Program
Shipboard Scientific Equipment
Investigator: Steve Rabalais
9/01/03–8/31/2005
$113,520
National Science Foundation
Public Outreach Services for the Mississippi River Water Reintroduction into Bayou Lafourche
Investigator: Leslie McVeigh
4/01/03–3/31/05
$205,000
Louisiana Department of Natural Resources (La. DNR)
2/1/03–12/31/03
Investigator: Richard DeMay
$40,000
The University of New Orleans Research & Technology Foundation, La. DNR
Fabrication and Deployment of an Environmental Station to be Located at the Mississippi River Lighthouse, Southwest Pass, La.
Investigator: Dr. Mike Dagg
9/12/03–6/30/04
$20,029.50
National Aeronautics and Space Administration
Correction

The National Oceanic and Atmospheric Administration (NOAA) was incorrectly abbreviated as NASA (National Aeronautics and Space Administration) in the Recent Grants listing in the Fall 2003 issue of LUMCON News. The title of the grant is “BTNEP Educational Publications–State CIAP Implementation.” In the same issue, the correct funding agency for the grant titled “N-Gomex 2002, Hypoxia Studies in the Northern Gulf of Mexico” should have been listed as NOAA, not NASA.