

# Marine scientists use Gulf as laboratory to solve problems

STEVEN WARD; THE HOUMA COURIER, November 2, 1998

Some people refer to Cocodrie as "the end of the world."

The tiny fishing community sits near the edge of the Gulf of Mexico, the last stop on La. 56. It consists of mostly fishing camps and marinas and not much else.

A 75,000-square-foot white and beige complex sits spread out and quiet, highlighted by dark black glass windows.

Eight marine scientists work at the Louisiana Universities Marine Consortium. At the same time, they are also trying to get papers published and secure grants.

LUMCON Executive Director Michael Dagg said the scientists rely primarily on grants to finance their research.

"We could not do most of this work without the grants the scientists generate," Dagg says. "It's a scramble, to be honest.

That's how most of the research gets paid for."

The research Dagg speaks of is related to Louisiana's coastal regions. LUMCON's five major research programs include: coastal oceanography, which deals with the studies of biological production and toxic algae; river and ocean interaction and the effects of river plumes; wetland loss that stems from coastal changes; fisheries oceanography; and the effects of oil and gas production and other natural resources on coastal regions.

"It seems like the main focus, especially in the beginning, was the effects of the Mississippi River on the coast," Dagg said. "But that's not all we do."

One of the other projects is Nancy Rabalais' work on the Gulf of Mexico's dead zone.

The dead zone is an area of low oxygen, or hypoxia, off the Louisiana coast responsible for killing off the food supply for fish.

"Right now, we don't have any answers on the dead zone but that's why we need years of more research," Dagg said.

Dagg, Rabalais and many other dead-zone researchers across the country are anxiously awaiting the outcome of the federal Harmful Algal Bloom Research and Control Act. The bill would allocate \$31 million for research into harmful algae blooms like the ones that create the dead zone.

Rabalais is doing some of the most important work in the area and is a front-runner for getting a chunk of that research money if the bill is passed. She is not the only scientist in the country who will try to get those dollars.

"In the world of science, that sort of thing can get competitive," Dagg said.

According to scientists, the 6,800-square-mile dead zone, about the size of New Jersey, is the country's largest. The problem is often blamed on fertilizer runoff into the Mississippi River from

cropland and sewage treatment plants.

Nutrients from fertilizer, which is plant food, nourish algae, which are microscopic plants. Small marine animals eat the algae, and that sends fecal matter from those animals and dead algae straight to the bottom of the Gulf. The process of decomposition uses up most of the oxygen in the Gulf water, and without oxygen, fish die.

! Farmers have objected to scientists' claims that they are the cause of the problem. They say there has been no proof Mississippi River water causes the problem.

"That's why more research is needed," Dagg said. "There are lots of questions to answer."

In connection with dead-zone research, Quay Dortch, another LUMCON scientist, is studying harmful algal blooms.

"Some of the plants grown from these nutrients are very toxic," Dortch said. "In the last few years, that's what caused the oyster scare in Louisiana."

In November 1996, an algal bloom closed oyster beds to harvesting for up to five months in some areas east of the Mississippi River delta. Another kind of bloom restricted recreational use of Lake Pontchartrain in the spring and summer of 1997 until the bloom dispersed.

Dortch's research concentrates on the environmental factors that cause algal blooms and what exactly contributes to the toxicity of the blooms which, ! in some cases, endanger human life.

Ed Chesney, another researcher, is trying to expand the boundaries of mariculture. Because of increasing natural pressures and environmental restrictions on fish populations, increased demands for seafood will soon be an important issue. Aquaculture could fill the gap between supply and demand if research like Chesney's is allowed to continue.

"For example, the recent problems with red snapper fishing limitations - culturing red snapper might be the answer," Dagg said.

To assist guest researchers, LUMCON also owns and operates two research vessels - the Pelican and the smaller Acadiana.

The Pelican is a 244-ton, steel-hulled vessel used for oceanographic research throughout the Gulf, the Caribbean and the U.S. East coast. It's equipped with hydrographic and trawl winches, a wet-lab, a dry-lab and an electronics lab.

Dagg said scientists from all over the world rent the Pelican for private research, one of the many ways money is pumped into LUMCON and local research is funded.

"You ought to see the reservation list for the Pelican. Our scientists hardly use it. If you need to use it, you have to reserve it a long time before," Dagg said.

But renting the Pelican is not the only way LUMCON gets by.

LUMCON gets \$1.7 million a year from the state to operate its facilities and programs.

Still, federal research money generated by LUMCON scientists is what propels things. Dagg said the scientists, himself included, generate between \$1 million and \$2 million in research grants each year.