Extracts

Roger Reep

Researchers Team Up On Manatee Protection System

Manatees and boaters, two groups perpetually at odds, might soon find themselves on the same wavelength, thanks to the equivalent of the manatee pick-up line.

Because the placid sea cows flock to shallow water and swim slowly, averaging 3 to 5 miles per hour, they are particularly susceptible to collisions with boats. Such hits are the main cause of manatee deaths in the United States. Many others suffer severe cuts and other injuries.

Now UF researchers from the colleges of Veterinary Medicine and Engineering have developed a sophisticated acoustical system to assess how manatees react when vocalizations from their brethren are taped and played back on underwater speakers. Preliminary results show the technology has the potential to accurately pinpoint manatees' locations. That could lead to devices that would signal boaters that manatees are present, allowing them to adjust their speed as needed. Currently, slow-speed zones — a source of frustration for many boaters — are fixed in Florida waterways where manatees reside.

Deke Beusse, director of UF's Marine Mammal Medicine Program, and Chris Niezrecki, an assistant professor in the College of Engineering who directs one of the college's acoustics laboratories, are fine-tuning their methodology at Florida locations such as Blue Springs and Homosassa Springs State Park where many of the animals live in quasi-captive conditions. The researchers are documenting how the mammals react when vocalizations from other manatees are played to them via underwater speakers. The manatees' calls are somewhat of a cross between a squeaky swing and a shrill chirp.

"We have found that animals vocalize more than originally thought in a quasi-captive environment," Beusse said. "We've also found that they increase vocalizations when the sounds of other manatees are played back to them."

Eventually, the UF team hope its technology will be able to pick up the sounds manatees make through the use of hydrophones located in the channels of heavily used waterways. As soon as sounds are detected, broadcast vocalizations would immediately cease so that manatees wouldn't suddenly head toward boat traffic.

"Then by alerting boaters, either through a blinking light or a radio signal, we could let them know where the manatees are, so that they can slow down or continue at normal speeds if manatees aren't in the area," Beusse said.

The project began with a $15,000 grant from the Florida Legislature and has continued with $215,000 from UF's Marine Mammal Medicine program.

Although research has been conducted on manatee vocalizations in the past, never before have scientists attempted to evaluate the effects of broadcasting sound to manatees, Beusse said.

"Scientifically, the UF project is significant because it raises questions about how manatees hear and at what frequencies they are able to detect sound," Beusse said.

The next phase of the UF team's work will involve testing in a large area within the Indian River on Florida's east coast. Researchers will then attempt to determine from what distance the manatee sounds can be detected and from what distance manatees can distinguish other manatee sounds.

"Then we will work out the technical aspects of warning boaters with lights, radio and through depth finders," Beusse said, adding that, theoretically, various state agencies would determine the best locations for using the devices.

Sarah Carey