



**NOAA** NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION  
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## **NOAA and University Scientists Launch Research Cruise to Determine Effects of Oil Spill on Endangered Whales**

NOAA ship *Gordon Gunter* will depart today to continue its mission to evaluate the effects of the Deepwater Horizon BP oil spill on whales and dolphins in the Gulf of Mexico, including the endangered sperm whale.

This project includes leading researchers from Cornell University, Oregon State University, and Scripps Institution of Oceanography, who will work with NOAA scientists to monitor the distributions and movements of whales over the next several months.

Twenty-one species of marine mammals call the deep waters of the northern Gulf of Mexico home, including the endangered sperm whale and a small, isolated population of baleen whales called Bryde's (pronounced BRU-des) whales. Scientists will use a variety of tools during the mission to document how these species respond as oil comes into their habitats.

*Gordon Gunter* will be working in the Gulf until early August. NOAA scientists on the ship will be collecting tissues samples from sperm whales and other marine mammals, and will also be tracking their abundance and spatial distribution both with visual surveys and by recording sounds using a towed array of underwater microphones. The ship will also be measuring water characteristics and using acoustics to measure the amount of plankton, fish, and squid, the primary food for whales.

These studies will help describe the habitats of marine mammals and measure the possible effects of the oil on them. "We have assembled an exceptional partnership with world-class academic scientists who will work with us to evaluate the potential for effects from the spill on marine mammals throughout the Gulf," said Lance Garrison, Ph.D., of NOAA's Southeast Fisheries Science Center and the principal investigator for NOAA.

Bruce Mate, Ph.D., and his colleagues from Oregon State University's Marine Mammal Institute will attempt to attach satellite tracking tags to as many as two dozen sperm whales near the spill site and track their locations by satellite to see if the spill will affect the size of their "home range" and their movements within feeding areas. "Our previous research provided a wonderful blueprint of sperm whale movements in the Gulf of Mexico," Mate said. "Now we will try to locate a number of different whale groups and tag selected healthy individuals – mostly females – and see if their movements are different than in past years."

Data from the new study will be compared to similar data Mate collected between 2002 and 2005 as part of an interdisciplinary study of sperm whales funded by the U.S. Department of Interior. "We'll also try to locate and tag whales that are in the projected path of the spill to get a better sense of what these individuals will do when the oil enters their habitats," he added.

While the satellite tags are used to track the movements of individual whales, two types of seafloor listening buoys will be used to document changes in the distribution of whales and dolphins in deep water from the Louisiana/Texas border to southwestern Florida. These units

will remain in place for up to four months and will record the moans, clicks and whistles that whales and dolphins produce for communicating, navigating, and finding food. These records will allow scientists to track changes in the occurrence of marine mammals as the amount of oil exposure changes throughout the summer and fall.

Nearly two dozen Marine Autonomous Recording Units from the Cornell University Bioacoustics Research Program will be deployed to listen for sperm whale clicks and Bryde's whale calls. "The objective is to record the sounds that different species of whales use for communicating, navigating and finding food in order to document where they are and what they are doing over the 3-4 month period," said Christopher Clark, Ph.D., who will oversee their deployment, recovery and the analysis of the data. "Based on our experiences in other offshore habitats I expect we'll hear more than just sperm and Bryde's whales. We should be prepared for fish and some acoustic surprises."

In addition, a new technology, the High Frequency Acoustic Recording Package (HARP) developed by the Scripps Institution of Oceanography of the University of California San Diego, will be used to record sounds. One of the units was placed close to the Deepwater Horizon BP site last month, and additional units will be placed in areas with different degrees of exposure to oil. The HARP is capable of recording the full range of marine mammals that inhabit the Gulf of Mexico, including sperm whales, beaked whales, and a variety of dolphin species. By the end of the mission, four of these packages will have been deployed in the Gulf.

"By recording the sounds from all the marine mammals that live in the Gulf of Mexico, we can get a more complete picture of the health of this ecosystem," said Dr. John Hildebrand of Scripps, who heads this effort. "By beginning our study soon after the spill began, we may see trends in the presence of animals in the affected area."

NOAA's mission is to understand and predict changes in the Earth's environment, from the depths of the ocean to the surface of the sun, and to conserve and manage our coastal and marine resources. Visit us at <http://www.noaa.gov> or on Facebook at <http://www.facebook.com/usnoaagov>.