NOAA03-R510

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FOR IMMEDIATE RELEASE
Oct. 3, 2003

NOAA-SPONSORED TEAM EXPLORES GULF OF MEXICO CORALS
Expedition Discovers Uncharted Reefs, Finds New Crab Species

NOAA, the Commerce Department's National Oceanic and Atmospheric Administration, lead a team of scientists from four universities and the U.S. Geological Survey on a voyage of discovery to Gulf of Mexico deep-sea coral habitats and the Flower Garden Banks National Marine Sanctuary.

The team documented coral habitat through images and specimens, measured bottom currents, and designated the biology and geology of the northern Gulf of Mexico outer shelf and upper continental slope region.

John McDonough, mission coordinator for NOAA's Office of Ocean Exploration, said, "We mapped the ocean floor by collecting multibeam data in many areas where before we had limited low resolution data, including a large area of complex habitat we suspect may be a large reef community similar to the Flower Garden Banks."

The team is mapping interesting features during long ship transits and by setting up survey grids in site-specific areas.

"There has been very little focus on deep-sea corals in the Gulf of Mexico," said Sandra Brooke, research associate at the University of Oregon. "We are still trying to determine the extent of their distribution. We need to understand much more about these fragile reefs and ultimately determine appropriate management strategies for their protection."

The expedition conducted a number of dives using a Remotely Operated Vehicle (ROV) that produced excellent video and still imagery, and brought up a number of specimens, including Lophelia deep-sea corals, anemones, fishes, and some interesting deep-sea crabs.

One surprising discovery is a crab that's called a painted squat lobster, or Eumunida picta. "The animal actually is a distant relative of hermit crabs," explained team member Mary Wicksten, an invertebrate biologist from Texas A&M.

Dr. Wicksten identified the specimen after ROV *Innovator's* suction sampler gently collected the animal from the ocean bottom and delivered it alive to scientists in one of the ship's onboard labs. The species had been collected previously along the U.S. east coast and in the Straits of Florida, but it was not previously documented in the Gulf of Mexico. The specimen will be housed in an aquarium at Texas A&M as part of a teaching display.

Scientists used the ROV to investigate deep reef fish and coral communities between 200 and 600 feet deep in an area 100 miles off the coast of Texas and Louisiana where underwater gardens emerge from the depths.

The Flower Garden Banks National Marine Sanctuary represent the northernmost coral reefs found off the continental U.S. These colorful and fertile coral reefs attract scientists and divers from around the world.

Ocean explorers from the University of Alabama, University of Oregon, Texas A&M University, the Marine Conservation Biology Institute, and University of Louisiana at Lafayette, were part of the multi-disciplinary team that operated from NOAA ship *Ronald H. Brown* from Sept. 19 through Oct. 1. The 274-foot *Brown* is one of the nation's most technologically advanced research vessels and is equipped to conduct worldwide oceanographic and atmospheric research.

The mission was also a cooperative effort between science and industry. Team members used an ROV owned and operated by Sonsub of Houston. The heavy-duty ROV Innovator was designed to operate for use by the offshore oil industry and deep-sea cable installers.

The *Innovator* is capable of diving to nearly 10,000 feet though it operated to depths of 1,500 feet during this expedition. ROV *Innovator* was set up to maximize its ability to collect scientific data and marine specimens, and to obtain high quality still and video images during a series of NOAA-sponsored scientific expeditions.

C&C Technologies, based in Lafayette, La., used two integrated software systems to track the ROV during operations, providing scientists with critical information on depth, location and time where observations are made and samples collected.

The explorers posted daily mission logs and images from the deep during the expedition to give students, scientists and, explorers-at-heart a front row seat at the mission. A number of striking images, including a virtual fly-through of the northwestern Gulf of Mexico's ocean floor, and views of a squat lobster never before documented in the Gulf of Mexico, may be found at http://oceanexplorer.noaa.gov (click on Gulf of Mexico).

In addition to chronicling the mission, the ocean explorer Web site also offers teachers of Grades 5-12, a variety of lesson plans with hands-on, inquiry-based activities jointly developed by NOAA, educators and scientists. The lessons are specifically tied to NOAA-sponsored voyages of exploration and to National Science Education Standards.

NOAA also sponsors workshops for teachers and those who attended a recent workshop in Biloxi, Miss., and up to 200 of their students, will tour NOAA ship *Ronald H. Brown* in Gulfport, Miss. The tour will include a visit to shipboard labs where they will be briefed by expedition scientists and see specimens and images they collected from the depths of the Gulf.

The mission of NOAA's Office of Ocean Exploration is to map the physical, biological, chemical and archaeological aspects of the ocean; to understand ocean dynamics at new levels; to develop new sensors and systems in marine technology and to reach out and communicate to the public the value of unlocking the secrets of the ocean. This expedition team contributed to those goals, and will build on their findings during future expeditions.

NOAA is dedicated to enhancing economic security and national safety through the prediction and research of weather and climate-related events and providing environmental stewardship of our nation's coastal and marine resources.

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