

# NOAA EXPLORES THE UNDERWATER HABITATS AROUND VIEQUES, PUERTO RICO

A Partnership Between the National Oceanic & Atmospheric Administration, the Caribbean Fisheries Management Council, the University of Puerto Rico (Mayaguez) and the Caribbean Coral Reef Institute

## General Information

The NOAA Center for Coastal Monitoring and Assessment's (CCMA) Biogeography Branch is conducting a scientific expedition to explore and characterize nearshore habitats (10 to 300 m) off the coasts of Vieques (Figure 1). The two week mission, MARCH 23 to April 3, 2009 aboard the NOAA ship NANCY FOSTER marks the group's sixth year studying the coral reefs and fish habitats in Puerto Rico's near-shore waters.

## Project Details

Scientists will collect high-resolution bathymetry; habitat hardness and habitat roughness; and complementary video data that will provide information about the characteristics of seafloor coral reef ecosystems. Kongsberg EM1002 & Reson 7125 multibeam echo-sounders will be used to collect bathymetric depth information and backscatter imagery (Figure 2). A remotely operated vehicle will capture underwater video imagery of seafloor habitats.

Because both the acoustic (physical) and video (biological) data have high positional accuracy, scientists can match them up on a map, integrate them with coral ecosystem and fish census data, and investigate spatial and temporal relationships between species and their habitats (Figures 3a and 3b). Developing these "habitat utilization models," which link physical habitat with biological information, is one of the primary objectives of the Biogeography Branch.

## Results

Data generated during this mission will support natural resource management in federal and territorial waters of Puerto Rico, as well as help NOAA continue to meet its commitment to the U.S. Coral Reef Task Force to map moderate depth coral reef ecosystems.

To date, NOAA has completed mapping projects for eight jurisdictions (Main Hawaiian Islands, Northwest Hawaiian Islands, Guam, Commonwealth of the Northern Mariana Islands, American Samoa, Republic of Palau, US Virgin Islands, and Puerto Rico).

NOAA's National Centers for Coastal Ocean Science is pleased to be able to collaborate with four other NOAA programs, including the National Marine Fisheries Service, the Office of Coast Survey, NOAA's Marine Aircraft and Operations and the Center for Operational Oceanographic Products and Services, as well as with the Caribbean Fisheries Management Council, the University of Puerto Rico (Mayaguez) and the Caribbean Coral Reef Institute. This study is funded by NOAA's Coral Reef Conservation Program.

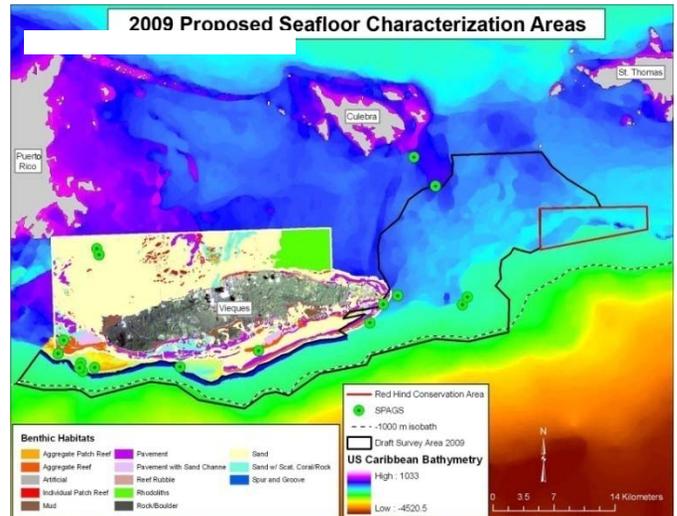


Figure 1. Project areas for the 2009 mapping effort off Vieques.

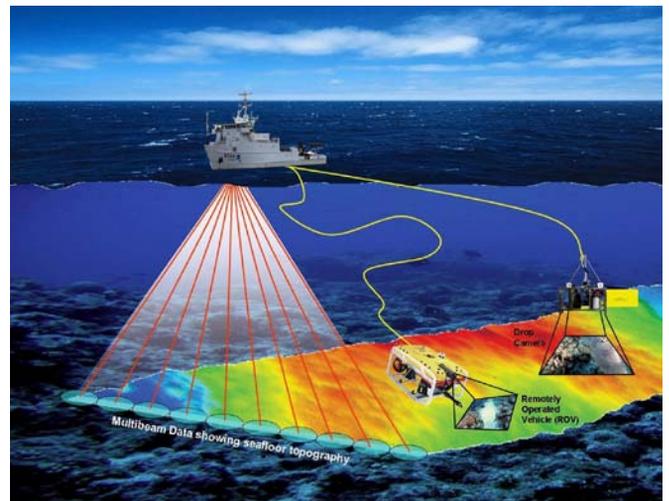


Figure 2. Multibeam data collection and ground truthing diagram. Kongsberg EM1002 & Reson 7125 echosounders will be used to collect bathymetric & backscatter information. A remotely operated vehicle will capture underwater imagery of seafloor habitats.

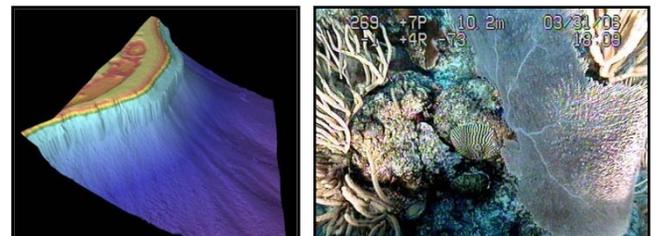


Figure 3a & b. a) 3-D bathymetric model of El Hoyo in southwest Puerto Rico (NF-06-04). b) ROV underwater imagery collected in southwest Puerto Rico (NF-06-04).

## For more information, please contact:

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