Seafloor Characterization of the U.S. Caribbean
2010 Field Season
March 18-April 6, 2010

Members of the ship crew during a fire drill.

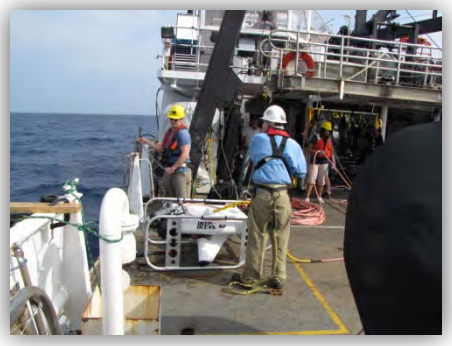
Day 1: March 18, 2010

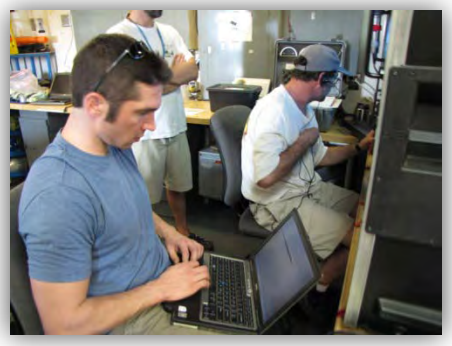
After a morning of double checking equipment and the standard NOAA ship safety drills, the ship crew and science team headed to a previously unmapped area northeast of El Seco. El Seco is an important reef area southeast of Vieques and a known tiger grouper spawning aggregation site. The team selected the study region using bathymetric and backscatter data that hinted at some unique seafloor features. And the findings did not disappoint.

"We saw extensive aggregate reefs and high live coral cover– some areas were as high as 50 to 90 percent," Bryan Costa, a geospatial scientist aboard the ship, said. "This is rare around the Caribbean where coral cover in shallow regions is low; in moderate-depth areas we've already studied, we usually see less than 50 percent cover," Costa said.

Finding corals and other biologically significant habitat types in the vast expanse of the ocean isn't quite like looking for a needle in a haystack. With the use of multibeam echosounders, the team can detect areas that may have unique features worth further exploration. The echosounders emit sound waves that bounce off the seafloor. Once processed they are used to create various images of the underwater landscape. To trained eyes, these images reveal distinct differences in habitat types– like if an area is covered in coral (a hardbottom habitat type) or sand (a softbottom habitat type).

To get an even clearer understanding of potentially important features around El Seco, the team deployed a remotely operated vehicle (ROV) equipped with special cameras to capture both underwater video and still images.





The ROV team prepares to deploy the machine off the side of the ship (left photo). Bryan Costa notes the seafloor characteristics as Lance Horn steers the ROV (right photo).

"The ROV is important because we aren't 100 percent sure what the structure is, nor are we certain what is growing on top of the structure until we collect the imagery with the ROV," Costa points out.

Today the ROV was deployed twice collecting about eight hours of underwater video. Real-time footage was displayed on two monitors and a large flat screen television in the labs. Along the way Costa and ROV operator Lance Horn snapped pictures and collected sediment samples to better understand the seafloor's characteristics.

As the machine traveled deeper and deeper jacks, tile fish and groupers quickly darted in and out of view. Several large barrel sponges and hard corals, like brain coral, also occupied the screen along the line of study.

DID YOU KNOW …

• If all of the world's shallow water coral reefs were placed side-by-side, they would occupy an area a bit larger than the state of Texas.

• Coral reefs harbor more than one quarter of the ocean's biodiversity.

• Reef-building corals prefer clear and shallow water, where lots of sunlight filters through to their symbiotic algae. It is possible to find coral reefs at depths exceeding (300 ft).

For more information about coral reefs, visit:
http://coralreef.noaa.gov/

NOAA CORAL REEF CONSERVATION PROGRAM

MEET THE SCIENTISTS …

Tim Battista

Battista is an oceanographer with the Biogeography Branch and is the chief scientist for the mission. He is responsible for overseeing all scientific operations.

Bryan Costa

Costa is a geospatial scientist with the Biogeography Branch . His job aboard the ship is to conduct groundtruthing and habitat mapping.

For more information about NOAA's Center for Coastal Monitoring and Assessment Biogeography Branch visit,
http://ccma.nos.noaa.gov/about/biogeography/welcome.html