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

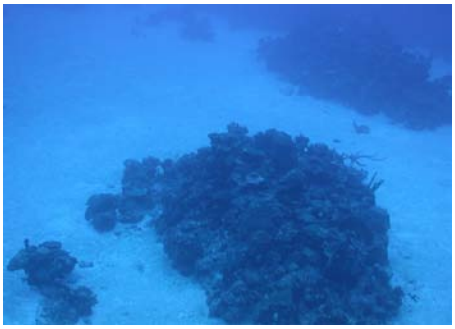
Day 6: March 23, 2010
Today scientists continue to focus on an area south west of St. Thomas, U.S. Virgin Islands. Remotely operated vehicle (ROV) dives were just northwest of yesterday's survey area.

An aggregate reef about 125 feet under the surface. This reef exhibits high coral cover.

The Day's Events
The first ROV dive of the day had to be cut short because a strong current from the south prevented operators from moving down the study path efficiently. The ROV was recovered from the water and deployed twice more at stations that were west of the original dive site.

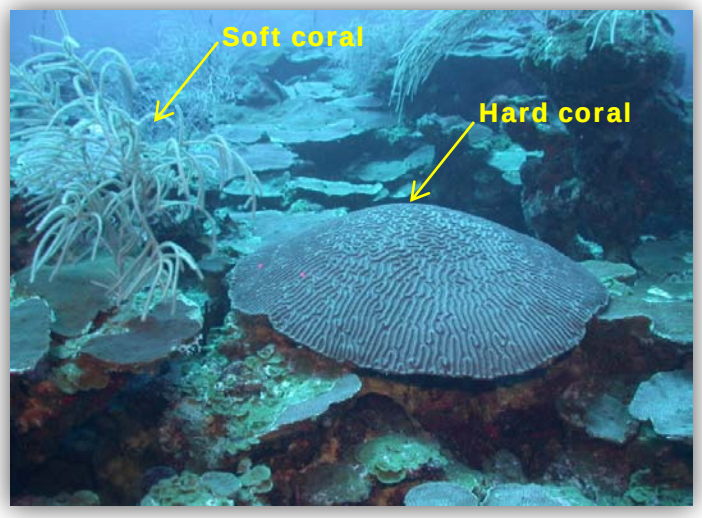
During dive two, the team observed areas with variable coral cover– some areas along the study path only had roughly 10 percent cover while other exhibited 50-90 percent cover. Later, localized areas with upwards of 90 percent were seen.

Once again, the seafloor habitats consisted of mostly of aggregated reefs, spur and groove reefs, bare sandy areas and hard pavement-like regions. The team also saw some patch reef formations. Individual patch reefs are usually circular or oblong in shape and can reach about a meter (3 feet) tall. These singular patch reefs are separated from other coral formation by sand, sea grass beds, rhodoliths or other habitat types that do not have much structure.



Individual patch reefs separated by sand.

Marine Life Finds
As the ROV cruised just above the seafloor, many different types of coral were spotted. There were many soft corals like sea plumes and sea whips drifting in the current. There were also plenty of hard corals like brain, encrusting and plate corals.



Picture of a reef with both hard and soft corals present.

Hard Coral
Hard corals are also know as scleractinian and stony coral. They produce a very hard skeleton from calcium carbonate extracted from the surrounding water. Hard corals are the primary reef-building corals. A good example of a hard coral would be the brain coral pictured to the left.

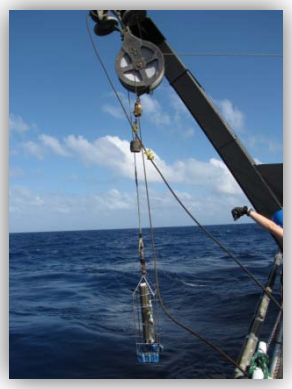
Soft Coral
Soft corals, on the other hand, do not produce a rigid outer skeleton from calcium and they are not reef builders. Soft corals almost look like swaying plants underwater (see soft coral to the left). Sea fans and sea whips are seen frequently on the underwater video.

CTD Cast

Just before every multibeam survey, senior survey technician Melody Ovard begins the process by casting a CTD. A CTD is an instrument that collects data on the water's conductivity, temperature and depth as it descends through the water column. Conductivity (a measure of the salt and other minerals present), temperature and depth are important chemical and physical characteristics to determine because they affect how the fast or slow the sound waves, or pings, emitted from the multibeam unit will travel to the seafloor and back. Sound waves travel 1,541 meters per second in water, six times faster than they travel in air.

As the ship moves along a study path Melody will cast the CTD at least every four hours because the chemical and physical characteristics of the water can change quickly as a result of waves, tides and other factors. The CTD will collect readings every half second as it navigates the 30-35 meters before stopping a just above the seafloor.

"If needed, I will do a cast at the beginning of a survey line and then again at the end," she said. "The chemical and physical characteristics can be very different from one location to another."



DID YOU KNOW …

•Corals can exist as individual polyps, or in colonies and communities that contain hundreds to hundreds of thousands of polyps.

•Coral polyps are multicellular and their cells exhibit specialization to perform various functions.

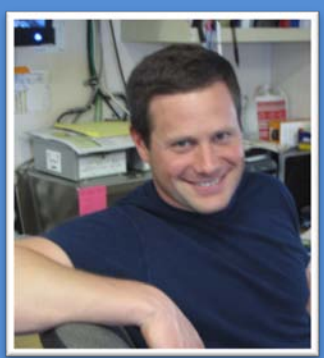
• Corals exhibit very limited organ development. Corals have a gastrovascular cavity (simple stomach) that opens only on one end and a ring of tentacles.

•While most reef-building coral gain their yellow to brown shades of color from the symbiotic algae that live within their tissue, other corals contain protective pigments that give them bright colors.

• To learn more about coral reef ecosystems, visit http://coralreef.noaa.gov/

MEET THE CREW …

Glen Rice



Glen is a NOAA Corps Lieutenant JG and team leader at the NOAA Integrated Ocean and Coastal Mapping Center. He is on the ship to expand habitat mapping data collection technologies to NOAA ships responsible for nautical charts.

Melody Ovard

Melody is a senior survey technician and dive master aboard the NOAA Ship Nancy Foster. She plays a key role in assisting science groups on the ship collect multibeam and other mapping data.