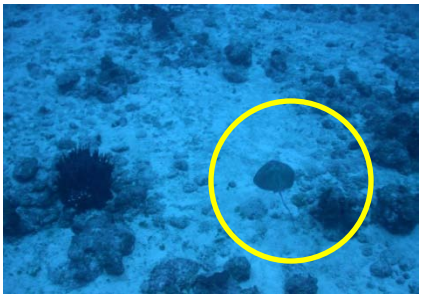
Seafloor Characterization of the U.S. Caribbean
2010 Field Season
March 18-April 6, 2010

Day 7: March 24, 2010
Today scientists continue to focus on an area south west of St. Thomas, U.S. Virgin Islands. Remotely operated vehicle (ROV) dives were in the south eastern corner of the study area.

The Day's Events
The very first dive of the morning revealed some exciting marine life. Just minutes in to the dive a large shark was spotted in the distance. The scientists were unable to identify it at the time. Later a sting ray was seen gliding over the sandy seafloor surface. Three remoras hinted at the presence of another shark nearby. Several arrow crabs and shrimp were also seen. The area was dominated by high coral cover, with some spots having 50-90 percent coral.

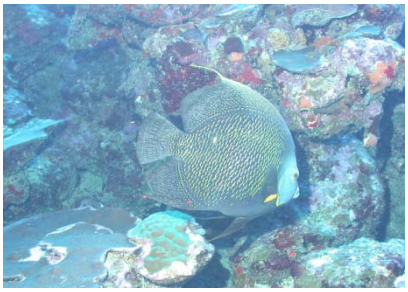


A sting ray swimming just above the seafloor is highlighted by the yellow circle (left). Soft corals like this sea whip were seen frequently (center). An close up shot of a star coral (right).

Dive two saw more soft corals than any other area to date. There were expanses of aggregate reef with high coral cover. In some areas coral mounds rose up above the reefs some 10 to 15 feet.

"The coral is more extensive than we thought, Bryan Coast, a scientists with the Biogeography Branch, said. "Most of the study area is reef punctuated occasionally by sand."

Fish
Unlike previous days, today the group encountered a number of fish. Angel fish, grunts, snappers, porkfish, ocean triggers and black durgeons were seen among the corals. The team also saw a few large tiger and yellow mouth grouper. Chris Taylor, a NOAA ecologist, points out that he hopes to see more grouper species after the full moon in early April when these fish will start to form spawning aggregation in certain areas.



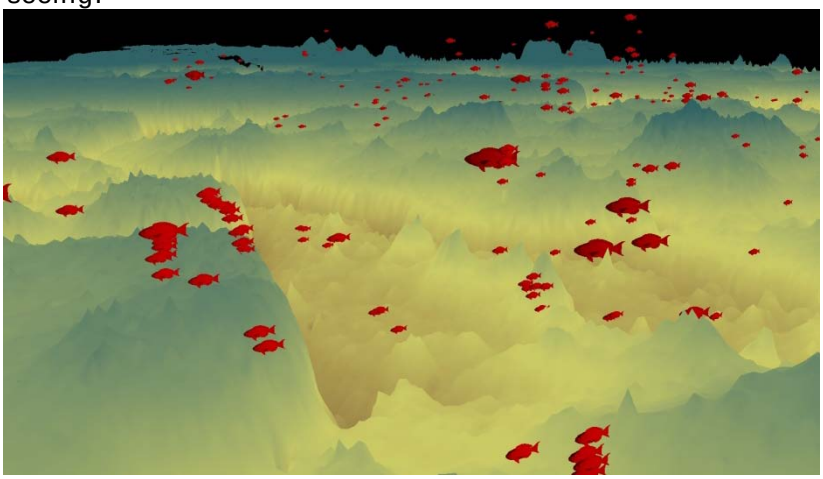
A queen trigger fish nestled in the coral (left). A whitespotted file fish swims by the ROV (center). A colorful angel fish (right).

"Up until now we just haven't seen that many fish in the transects we've been running. But that doesn't mean this whole area is lacking fish", Taylor points out.

Presently, the ROV is being used for ground truthing– to verify unique acoustical signatures on the seafloor pinpointed by the multibeam data. Thus the ROV is positioned to look down at the seafloor, often missing animals– like fish– that may be navigating the waters above or at the machine's side.

He points out that the fish observed so far have occurred where reefs meet sand channels and other flat, low relief areas.

"Some fish like to forage in adjacent flat bottom areas. Prey items could be in higher abundance there," Taylor explains. "This isn't always the case, but this is the pattern we are seeing."



A 3-D image illustrating the location & number of fish over the multibeam seascape. Notice how many fish occur near low relief areas. This image was created from fish acoustic data. Fish sizes are proportional, but not to scale.

DID YOU KNOW …

•Most reef-building corals have a mutually beneficial relationship with a microscopic unicellular algae called zooxanthellae that lives within the coral.

•The coral provides the algae with a protected environment and the compounds necessary for photosynthesis. In return, the algae produce oxygen and help the coral to remove wastes. Most importantly, they supply the coral with organic products of photosynthesis which are predominantly carbohydrates.

•Zooxanthellae often are critical elements in the continuing health of reef-building corals. About 90 percent of the organic material they manufacture Photosynthetically is transferred to the host coral tissue.

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

MEET THE CREW …

Angelito Llena

Angelito is the chief steward aboard the NOAA Ship Nancy Foster. Angelito is the lead chef aboard the ship responsible for three meals a day for the science team and ship crew. And they 're delicious!

Raul E. Quiros

Raul is a steward on the ship. He assists with the preparation of all meals for the science group and crew. He is also responsible for keeping the kitchen and dining area in working order.

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