

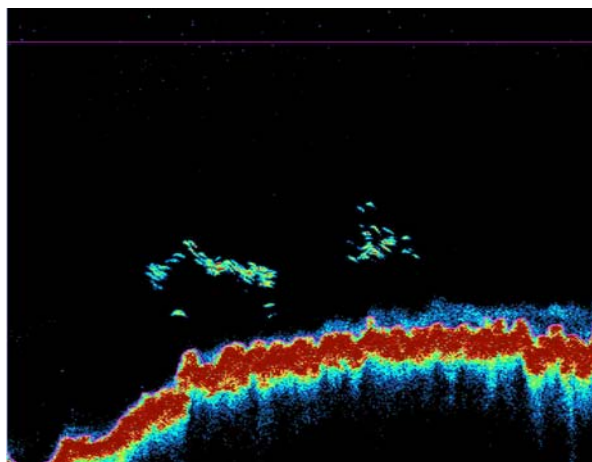
**FLOWER GARDEN BANKS NATIONAL MARINE SANCTUARY  
BASELINE BENTHIC AND FISH SURVEYS  
A COLLABORATIVE CRUISE WITH FGBNMS, NCCOS, AND HARBOR  
BRANCH OCEANOGRAPHIC INSTITUTE.  
QUICK LOOK REPORT - FGBNMS-DFH14  
MAY 16-21, 2010**

**OVERVIEW**

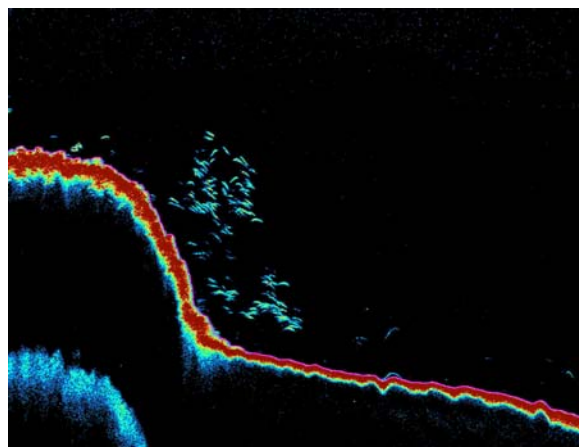
The R/V MANTA departed from the TAMUG dock on the evening of Sunday, May 16<sup>th</sup>. A smooth ride with flat seas put the ship at the East Flower Garden Bank early on the morning of the May 17<sup>th</sup>. The first day of operations saw glassy flat seas, which gradually picked up, reaching 3-4ft by Friday morning. Flat seas encountered on Monday allowed the R/V Manta crew to observe two hammerhead sharks, a manta ray, and two unidentified surface swimming sharks from the back deck. Two full days were spent running transects on the East Flower Garden Bank before the ship moved to the West Flower Garden Bank on Wednesday. Two full days were spent running transects at the West Flower Garden Bank. The morning of Friday, May 21<sup>st</sup>, was spent conducting coral reef cap transects at each the East and West Flower Garden Banks.

**ACOUSTICS** (Erik Ebert/Chris Taylor NCCOS – SCCFHR)

Approximately 100nm of the East and West Bank of the Sanctuary were surveyed from the R/V MANTA using a fixed pole and split-beam fisheries sonar system. The survey covered both coral caps on each bank and a variety of habitats over a range of depths (to 150m). The hydroacoustic data collected will be used to map the abundance and distribution of fish in the Sanctuary and compare these patterns across habitats and over time. Pairing the survey to the ROV observations will allow a direct comparison to the visual observation of fish communities and habitat data. Post-processing of the hydroacoustic data is being conducted at the Center for Coastal Fisheries and Habitat Research in Beaufort, NC. Interesting patterns of fish distribution have already been observed (see below). These hydroacoustic surveys and ongoing monitoring of the Sanctuary will enhance our understanding of changes in fish abundance and distribution over space and time.



Fish over EFGB coral cap



Fish over WFGB coral cap

## **ROV TRANSECTS**

A total of fifteen 100m transects were randomly plotted on bathymetric maps on both the East and West Flower Garden Bank, in each habitat zone: the Soft Bottom Community, the Deep Coral Zone, the Coralline Algae Zone, and the Algal Nodule Zone. In addition, six transects were randomly plotted in the Coral Cap of both the East and West Flower Garden Bank. The surveys along the coral cap will be used to compare ROV transects to SCUBA diver surveys.

The 17<sup>th</sup> and 18<sup>th</sup> of May were spent at the East Flower Garden Bank, where seven dives were conducted, and thirty-six transects completed. Thirteen of the transects conducted at the East Flower Garden bank did not match the habitat zone they were within, and were therefore reclassified to the correct habitat zone. After reclassification, a total of ten transects were completed in the Algal Nodule Zone, six in the Coralline Algae Zone, ten in the Deep Coral Zone, and nine in the Soft Bottom Community.

The 19<sup>th</sup> and 20<sup>th</sup> of May were spent at the West Flower Garden Bank, where twelve dives were conducted, and thirty-seven transects were completed. One transect did not match the habitat zone it was within, and was reclassified to the correct habitat zone. After reclassification, a total of ten transects were completed in the Algal Nodule Zone, fourteen in the Coralline Algae Zone, ten in the Deep Coral Zone, and three in the Soft Bottom Community. A mobulid ray was observed from the ROV at 283ft at the West Bank.

The 21<sup>st</sup> of May was used to complete the six transects located on the coral reef caps of both the East and West Flower Garden Banks. This required one dive at each the East and West Flower Garden Bank, where six transects were conducted at the West Flower Garden Banks, and five at the East Flower Garden Bank. One transect did not match the habitat zone it was within, and was reclassified to the correct habitat zone. After reclassification, a total of five transects were conducted on the Coral Cap of the West Flower Garden Bank, and seven transects on the East Flower Garden Bank. Tunicate growth and a large loggerhead sea turtle were observed from the ROV at the East Flower Garden Bank.

In total, eighty-four transects were conducted. A total of twelve surveys were conducted in the Coral Cap, twenty in the Algal Nodule Zone, twenty in the Coralline Algae Zone, twenty in the Deep Coral Zone, and twelve in the Soft Bottom Community. The number of images taken in each transect varied by the speed at which the ROV traveled. The average number of images per transect was thirteen, with a minimum of eight and a maximum of twenty-one images.

## **BIOLOGICAL SAMPLING**

A total of five samples were collected using the ROV manipulator arm. Two directed samples were collected, and three opportunistic samples. Samples included black corals (Family: Antipathidae), a yellow gorgonian sea fan, a solitary cup coral, and a collection of small rocks. Samples were stored in ethanol for preservation.

## **CRUISE PARTICIPANTS**

### **SCIENCE PARTY**

1. Emma Hickerson (FGBNMS)
2. Marissa Nuttall (FGBNMS)
3. G.P. Schmahl (FGBNMS)

4. Lance Horn (NURC/UNCW) – ROV pilot
5. Glenn Taylor (NURC/UNCW) – ROV technician
6. John Reed (HBOI)
7. Josh Voss (HBOI)
8. Charlie Menza (NCCOS)
9. Erik Ebert (NCCOS)

**R/V MANTA CREW**

10. Darrell Walker - OIC
11. Mike Shetler – Mate/Engineer/Deck
12. Dean Henagan – Mate/Engineer/Deck
13. Dennis Cooley – Cook/Deck