

# Flower Garden Banks National Marine Sanctuary

## Habitat Characterization

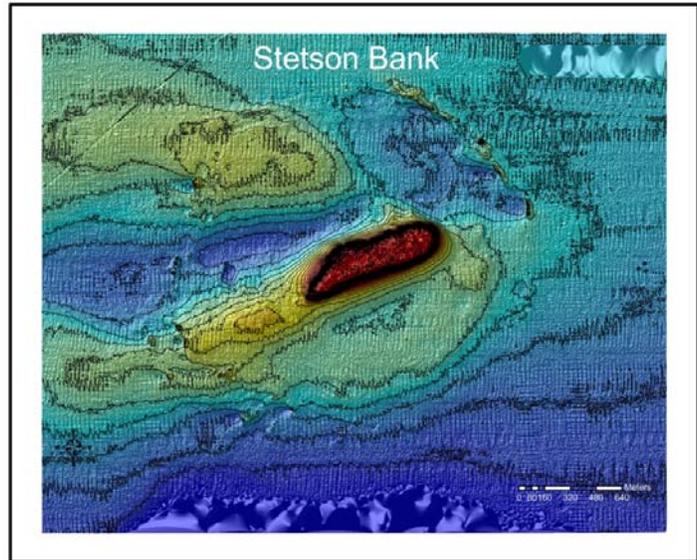
### Management Issue

Critical to the management of the Flower Garden Banks National Marine Sanctuary (FGBNMS or Sanctuary) is targeted mapping and ground-truthing efforts. These data directly support predicting impacts and user conflicts in the Sanctuary and proposed sanctuary expansion sites.

### Description

The quality and amount of bathymetric charts available for the Sanctuary and surrounding banks has greatly increased since the late 1990's, at which time the first multibeam data was collected for the East and West Bank, and Stetson Bank, by Dr. Jim Gardner, formerly of USGS, now with UNH. Since then, several mapping efforts have taken place, expanding the seafloor mapping effort in the Flower Garden Banks region and the NW Gulf of Mexico, as well as collecting higher resolution bathymetry of the coral caps.

The multibeam collected has been integral in the planning for and conducting of submersible operations – manned and remotely operated vehicle surveys. These maps have been the building block upon which current characterization maps have been developed. However, there is a need to continue ground-truthing the current multibeam data using ROV's, submersible, drop cameras, or diver surveys, to elevate the accuracy of the habitat maps. Identification of habitats, down to species level, is underway, but more questions have been raised as this process has been undertaken. Additional sampling is needed to resolve identification issues.



*Bathymetry map of Stetson Bank. Map Credit; FGBNMS*

The areas that have been mapped have primarily been mapping blocks targeting known banks, however, a large portion of the areas that are suspected to contain connecting habitat highways between these known targets remain unmapped. Also, areas that have been mapped, e.g. McGrail Bank needs to be remapped with higher resolution technology to resolve the extent of the *Stephanocoenia* reefs. There is also a need to characterize and integrate the oceanographic processes associated in the region.

The resulting charts have thus far been critical in the process of management discussions, and the additional information will be necessary for management actions in the future.

### Questions and Information Needs

- 1) What is the distribution and delineation of habitats in the FGBNMS and proposed Sanctuary expansion sites?
- 2) What are the biological and geological components of each habitat?
- 3) Is there critical habitat between the specific reefs and banks?
- 4) What are the oceanographic processes affecting and influencing the reefs and banks at the FGBNMS and proposed Sanctuary expansion sites?

*Updated: 5/1/2010*

*For More Information -- <http://www.sanctuaries.noaa.gov/science/assessment>*

## Scientific Approach and Actions

- High Resolution multibeam and backscattermapping, processing and analysis
- Sidescan mapping, processing and analysis
- CHIRP mapping, processing and analysis
- Remotely Operated Vehicles
- Technical and non-technical SCUBA Diving
- Drop camera surveys
- Development of habitat maps

## Potential Key Partners and Information Sources

National Undersea Research Center; Minerals Management Service; NOAA Diving; ONMS Technical Diving; University of New Hampshire; USGS; Harte Research Institute; Texas A&M University; Smithsonian Institute

## Management Support Products

- High resolution multibeam charts
- Habitat maps
- Recommendations for management zones
- Spill response recommendations

## Planned Use of Products and Actions

- Establishment of zones and Sanctuary boundaries.
- Establishment of Oil Spill response procedures.
- Re-evaluation of MMS regulatory zones



*floor beneath the brine lake. Photo credit: FGBNMS*

## Program References

### FGBNMS Management Plan Review Process

- Public Scoping Reports

### FGBNMS Condition Report

- 5, 6, 9, 11, 12, 13

### ONMS Performance Measures

- Number of sites in which habitat, based on long-term monitoring data, is being maintained or improved

### Other Documents

- 2004 ONMS Science Needs Assessment

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