



National Centers for Coastal Ocean Science
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A BIOGEOGRAPHIC CHARACTERIZATION OF FISH COMMUNITIES AND ASSOCIATED BENTHIC HABITATS WITHIN THE FLOWER GARDEN BANKS NATIONAL MARINE SANCTUARY

BACKGROUND

A *Biogeographic Characterization of the Flower Garden Banks National Marine Sanctuary* (FGBNMS) provides the first spatially comprehensive and quantitative look at the fish communities and benthic habitats within the sanctuary.

The FGBNMS is located 70-115 miles off the coast of Texas and Louisiana and contains the northernmost coral reefs in the U.S. The area was designated a marine sanctuary in 1992.

The goal of this work was to provide sanctuary staff with information critical to the management decision making process.

Specifically, the project satisfies two management objectives outlined by the sanctuary:

1. To develop a sampling design for monitoring benthic fish communities across the coral caps; and
2. To obtain a spatial and quantitative characterization of those communities and their associated habitats.

KEY FINDINGS

- In spite of increasing pressures, the FGBNMS is among the healthiest coral reef ecosystems in the tropical western Atlantic, with live coral cover approaching 50%.
- The coral reef ecosystems of the FGBNMS are dominated by apex predators (e.g., large groupers, jacks and snappers) that are virtually absent throughout the U.S. Caribbean.
- The FGBNMS exhibits significantly higher overall number of fish when compared to the coral reef ecosystems of the U.S. Caribbean.
- Bleaching data suggests the sanctuary may be more susceptible to environmental impacts and stressors than previously thought.

OTHER PRODUCTS

Sampling Design

A Sampling design was selected based on how well it addressed: long-term changes in fish community structure; long-term changes in density and mean-size of selected taxa; the relationship between physical measures and associated fish communities; and ways to collect information such that the probability of detecting change over time or space is increased.

Tool

To further assist managers, a cost-effective GIS sampling tool that allows users to design precise sampling strategies was developed and made available for free download at: <http://ccma.nos.noaa.gov/products/biogeography/sampling/welcome.html>.

ONLINE RESOURCES

📄 **Download Report:** http://ccma.nos.noaa.gov/ecosystems/sanctuaries/fgb_nms.html

📄 **Biogeography Branch:** <http://ccma.nos.noaa.gov/about/biogeography/welcome.html>

📄 **Office of National Marine Sanctuaries & FGBNMS:** <http://sanctuaries.noaa.gov/>; <http://flowergarden.noaa.gov/>

CONTACTS

For more information or to request a hard copy of the report contact:

Mark Monaco

Biogeography Branch Chief
E-mail: Mark.Monaco@noaa.gov
Tel: 301-713-3028 x160

G.P. Schmahl

FGBNMS Superintendent
E-mail: George.Schmahl@noaa.gov
Tel: 409-621-5151 x102

