



U. S. Department of the Interior
Bureau of Ocean Energy Management
Gulf of Mexico OCS Region

Technical Announcement

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Long-Term Monitoring at the East and West Flower Garden Banks National Marine Sanctuary, 2011–2012. Vol. I, Technical Report; Vol. II, Appendixes

[OCS Study BOEM 2015-027 and 2015-028](#)

The Bureau of Ocean Energy Management (BOEM), Gulf of Mexico OCS, announces the availability of a new study report, *Long-Term Monitoring at the East and West Flower Garden Banks National Marine Sanctuary, 2011-2012, Vol. I, Technical Report; Vol. II, Appendixes*.

In more than 20 years of continuous monitoring, the coral reefs of the Flower Garden Banks (FGB) National Marine Sanctuary have maintained high levels of coral cover; suffered minimally from hurricanes, coral bleaching, and disease outbreaks; and supported relatively diverse and abundant fish populations as well as other vertebrate and invertebrate species. No significant long-term changes have been detected in coral cover or diversity at the FGB during monitoring since 1988, and likely not since the first measurements were made in the early 1970s.

Based on the 2009 and 2010 data, the average coral cover on the FGB coral caps is between 52 and 60%. The incidence and prevalence of disease and bleaching in comparison to other western Atlantic coral sites were low. At repetitive photostations in 32- to 40-m depths, mean coral cover ranged between 72 and 76% in 2011 and 2012. *Orbicella franksi* and *Montastraea cavernosa* were the dominant species in this depth range. Macroalgae averaged 19% and CTB averaged 7%. Pomacentridae, Labridae, and Serranidae were the dominant fish families at both banks. Diversity varied between banks and years, with the greatest diversity occurring at the WFGB in 2012. The most frequently sighted species during this study period were brown chromis (*Chromis multilineata*), closely followed by Spanish hogfish (*Bodianus rufus*), and bluehead (*Thalassoma bifasciatum*). Mean fish density (abundance per 100 m²) was highest at the West Flower Garden Bank in 2012 and lowest at the East Flower Garden Bank in 2012.

Invertivores were the dominant fish guild; Pomacentridae and Labridae represented the largest density. The size-frequency distributions of invertivores were non-normally distributed, with the

majority of individuals being small damselfish. The greatest mean biomass was seen at the WFGB in 2011, where the piscivores possessed the highest mean biomass for all surveys, over 50% of total biomass. Following the pattern of coral species present at the FGB (low diversity compared to Caribbean reefs, but high coral cover), the fish assemblages reflect a similar trend of low diversity and high abundance (Pattengill-Semmens and Gittings 2003). Although no lionfish (*Pterois* spp.) were observed within the fish surveys conducted, lionfish were sighted within the study site in 2012 after first being observed to invade sanctuary waters in 2011.

This report is available on CD from the Bureau of Ocean Energy Management, Gulf of Mexico OCS Region, for \$15.00, and free of charge as a pdf file downloaded from the BOEM Website. Copies can also be viewed at selected Federal Depository Libraries. The addresses are listed below.

To order a CD, use the Gulf of Mexico OCS Region contact information below and reference OCS Study BOEM 2015-027 & 028. To download a pdf copy, use the [Environmental Studies Program Information System](#) (ESPIS) and search on the study report number. In the near future, you will also be able to get this report also from the National Technical Information Service.

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