

# Long-Term Coral Reef Monitoring at East and West Flower Garden

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## Abstract

Since 1989, a federally supported long-term coral reef monitoring program has focused on two one-hectare study sites at East Flower Garden Bank (EFGB) and West Flower Garden Bank (WFGB) in the northwestern Gulf of Mexico. In 30 years of nearly continuous monitoring, mean live coral cover has, on average, oscillated around 52% within the study sites at both banks. Despite global coral reef declines, EFGB and WFGB have suffered minimally from hurricanes, recovered from coral bleaching events, have not been significantly impacted by oil and gas operations, and shown no signs of disease. Overall, some of the most important trends documented since monitoring began in 1989 have been stable coral cover at EFGB and significantly increasing coral cover at WFGB, significantly increasing macroalgae cover at both banks, significantly increasing sea urchin populations at WFGB, and significantly increasing seawater temperatures at reef depth. The high coral cover documented at EFGB and WFGB since the beginning of the monitoring program makes these banks unique among the region's coral reefs and justifies the need for continued protection. This level of monitoring enables resource managers from NOAA and BOEM to make informed decisions regarding management and research amid threats such as climate change, invasive species, water quality degradation, and natural or anthropogenic disturbances.