

## **BOEM ENVIRONMENTAL STUDIES PROGRAM: ONGOING STUDIES**

**Region:** Gulf of Mexico, OCS

**Title:** Review of the long-term monitoring program and the associated data of the long-term monitoring program at the Flower Garden Banks (GM-14-x11)

**Planning Area(s):** Western

**Total Cost:** \$ 115,514.27

**Period of Performance:** FY 2014-2016

**Conducting Organization:** Hawaii International Environmental Services, Inc.

**BOEM Contact:** Matthew W. Johnson, Ph.D.

### **Description:**

Background: The Flower Garden Banks are two seafloor mounds located approximately 110 miles southeast of Galveston, Texas. They are the largest topographic features on the continental shelf of the northern Gulf of Mexico, with thriving coral reefs and abundant marine life covering over 350 acres. The coral populations at the Flower Garden Banks are considered to be one of the healthiest in the Gulf of Mexico. BOEM has monitored these banks since 1970s to develop a long-term database related to the environmental health of the East and West Flower Garden Banks. Originally the long-term monitoring program was established to determine if development of OCS resources were negatively impacting these sensitive habitats. Additionally, through cooperation with NOAA's National Marine Sanctuary Program the program has expanded to monitor the overall ecosystem health rather than just coral health. In 1988, a 10,000 m<sup>2</sup> area was set up on each mound within the coral cap to serve as a data collection area for the long-term monitoring program. Since that time, monitoring of this sites have remained as the central collection location for the program. Although the locations have remained the same, multiple contractors have been responsible for the data collection and analyses. While BOEM has provided the technical guidance to maintain continuity among contractors, there has been a certain degree of variation among techniques and analyses throughout the years as technology for collecting and analyzing underwater data has advanced. Since 2009, the Flower Garden Banks National Marine Sanctuary has been the party responsible for planning and conducting these cruises, bringing less variation among years, although tools and techniques have changed. As with any long-term monitoring program, there needs to be a certain degree of flexibility to modify, remove, or add sampling effort or sampling techniques; however, to do this a program must continually be reviewed and evaluated to determine if the program is meeting its stated goals or reaching its objectives. If it is not collecting the proper data to reach the objectives, then it must be modified. To date, there has not been an independent, external review of the long-term monitoring program at the Flower Garden Banks National Marine Sanctuary.

Objectives: The primary objective of this project is to conduct an independent evaluation of the long-term monitoring program at the Flower Garden Banks National Marine Sanctuary. This project will need to determine the overall quality of the long-term monitoring program to effectively assess coral ecosystem health. This includes, but is not limited to, objectives, techniques, frequency, and analyses. The secondary objective of this project is to provide

recommendations for moving the program forward to ensure cost-effectiveness while maintaining the scientific integrity required for achieving the stated objectives.

Methods: This project will be using the following tasks to evaluate the Flower Garden Banks Monitoring Program: General Program Evaluation, Technique Evaluation, Sampling Evaluation, and Evaluation of Analytical Techniques

Products: The deliverables from this project will be a report documenting the results of each of the tasks and a report detailing recommendations that could be made to the program to improve the efficacy, accuracy, timeliness, cost, and quality.

Importance to BOEM: This project is an important tool to allow for BOEM to adapt its long-term monitoring to changes in techniques and technologies and re-evaluate methodologies that may not be performing as originally desired. The result will be used to make the program more effective and of a higher quality when possible.

**Current Status:** Active

**Final Report Due:** March 2016

**Publications:** None to date

**Affiliated WWW Sites:** N/A

**Revised Date:** December 2015

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