

STUDY TITLE: Northeastern Gulf of Mexico Coastal and Marine Ecosystem Program: Ecosystem Monitoring, Mississippi/Alabama Shelf

REPORT TITLE: Northeastern Gulf of Mexico Coastal and Marine Ecosystem Program: Ecosystem Monitoring, Mississippi/Alabama Shelf; Second Annual Interim Report

CONTRACT NUMBER: BRD-1445-CT09-96-0006

SPONSORING OCS REGION: Gulf of Mexico

APPLICABLE PLANNING AREAS: Central and Eastern

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KEY WORDS: pinnacles, geophysical reconnaissance, geology, sediment dynamics, geochemistry, physical oceanography, hydrography, benthic ecology, hard bottom communities, fish, micro-habitat studies, recruitment

BACKGROUND: This study was planned to build on to two previous MMS-sponsored studies of the Mississippi-Alabama pinnacle trend area. These initial studies emphasized location and mapping of these features. In addition, communities were described with some ancillary correlations between physical and chemical parameters.

OBJECTIVES: The overall goal of this program is to characterize and monitor biological communities and environmental conditions at carbonate mounds along the Mississippi-Alabama OCS. Specific objectives are: 1) To describe and monitor seasonal and interannual changes in community structure and zonation and relate these to changes in environmental conditions; and 2) To characterize the geological, chemical, and physical environment of the mounds as an aid in understanding their origin, evolution, present-day dynamics, and long-term fate.

DESCRIPTION: This report is a summary of the second year of the program. Two monitoring cruises were carried out revisiting stations established during phase 1. In addition, three mooring service cruises were conducted. Hard bottom and fish community monitoring was conducted at each site using the Remotely Operated Vehicle (ROV). Monitoring included random video/photographic transects and stations and establishment of fixed video/photoquadrats. Voucher specimens were also collected at some sites to aid in species identification.

SIGNIFICANT CONCLUSIONS: Although a number of interesting observations have been made regarding pinnacle characterization and community dynamics, all findings at this phase should be regarded as preliminary and components of an ongoing studies program.

STUDY RESULTS: This multi-year oceanographic study is designed to monitor environmental conditions at three distinct types of topographic features present along the Mississippi-Alabama OCS. These features include: 1) high profile pinnacles of 10-15 m relief; 2) medium relief, flattop features of approximately 5 m; and 3) low relief hard bottoms of less than 5 m. Seasonal information is gathered regarding populations and diversity of biological organisms related to turbidity, zonations, and other physical environmental parameters

STUDY PRODUCTS: Continental Shelf Associates, Inc. and Texas A&M University, Geochemical and Environmental Research Group, 1998. Northeastern Gulf of Mexico Coastal and Marine Ecosystem Program: Ecosystem Monitoring, Mississippi/Alabama Shelf; First Annual Interim Report. U.S. Dept. of the Interior, U.S. Geological Survey, Biological Resources Division, USGS/BRD/CR-1997-0008 and Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, LA, OCS Study MMS 97-0037. 133 pp. +app.

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