

STUDY TITLE: Marine Birds, Mammals, Turtles, and Endangered Manatee - South Atlantic and Gulf of Mexico Pilot Study

REPORT TITLE: Turtles, Birds, and Mammals in the Northern Gulf of Mexico and Nearby Atlantic Waters

CONTRACT NUMBERS: BLM: MU9-18; MMS: 14-12-0001-29089

SPONSORING OCS REGION: Gulf of Mexico

APPLICABLE PLANNING AREAS: South Atlantic; Straits of Florida; Eastern Gulf of Mexico; Central Gulf of Mexico; Western Gulf of Mexico

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CUMULATIVE PROJECT COST: \$245,673

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KEY WORDS: South Atlantic; Straits of Florida; Eastern Gulf; Central Gulf; Western Gulf; Florida; Texas; Louisiana; endangered species; marine mammals; birds; turtles; manatee; seasonality; abundance; aerial observations; range; brown pelican; loggerhead turtle; sperm whale

BACKGROUND: Information regarding marine vertebrates is limited and considered inadequate with the exception of previously considered commercial species. The Bureau of Land Management (BLM) sponsored a pilot study of Gulf of Mexico marine vertebrates which developed census techniques and baseline data. The present study is an extension of the program to assess seasonal distribution and abundance of marine turtles, birds, and mammals of the Outer Continental Shelf (OCS). Because many marine vertebrates are limited to specific habitats and food resources, they are potentially vulnerable to catastrophic events within these habitats. Many marine vertebrate species are protected under the Marine Mammal Protection Act (1972) and the Endangered Species Act (1973). Implementation of these laws requires information

regarding population density and distribution of marine vertebrates potentially vulnerable to oil and gas exploratory activities.

OBJECTIVES: (1) To investigate spatial distributions of marine turtles, birds, and mammals in relation to oceanographic parameters; (2) to determine seasonal distribution and basis for density estimation of individual species; (3) to identify special biologically significant areas within survey units.

DESCRIPTION: Four study subunits were selected from OCS and adjacent waters of the western Atlantic Ocean from Cape Hatteras, North Carolina (35°17'N Lat; 75°30'W Long) to the Florida Keys through the Gulf of Mexico to Brownsville, Texas (25°57'N Lat; 97°09'W Long). The total area of individual subunits was 24,642 km². Subunit placement within the survey area minimized sighting of terrestrial and shore-based species. Trained observers in low-flying aircraft collected data bimonthly along six transects within each survey subunit. Inshore sampling was more intense as oil and gas activities are more prevalent in these areas. Observations began in June 1980 and ended April 1981. Data collection types were biological, environmental, and survey oriented. Data were summarized for each survey subunit and survey month to allow comparison between geographic and seasonal sampling.

SIGNIFICANT CONCLUSIONS: A total of 88 species including 4 species of marine turtles, 69 species of birds (34 marine species and 35 migratory or land-based species), and 15 species of marine mammals were observed during the study. Present low populations of marine turtles make them especially important in consideration of environmental effects of oil and gas activities. Particular marine bird species may be considered ideal as oil and gas impact indicators because of their abundance, use of various feeding strategies, and varying degrees of marine habitat dependency. The endangered brown pelican was of special concern because western Gulf populations were already low due to contaminants. The bottlenose dolphin was the most abundant marine mammal and could be considered a good impact indicator.

STUDY RESULTS: A total of 88 marine vertebrate species were observed during the study. Of marine turtles, the loggerhead turtle was the most abundant. The southeastern United States' population of loggerhead turtles was considered major on a world-wide basis. New data concerning distribution, abundance, seasonality, and ecology were collected for many species. Marine turtles were more numerous along Florida's coast than either Texas or Louisiana; this was due to the presence of major feeding and nesting areas along Florida's coast. Marine birds accounted for nearly 85% of all vertebrate species observed. Marine bird diversity was similar at all survey subunits, however, bird abundance was significantly greater at the Louisiana survey subunit which is located in migratory routes. The east Florida survey subunit had the greatest number of marine mammal individuals and species. Of the endangered cetaceans, the sperm whale was the only one regularly present in the Gulf of Mexico.

The data from the survey were collected over a short-term interval. The relative brevity of the study does not allow formation of definite conclusions regarding seasonal trends

and environmental impacts of the populations observed. This study does identify species occurrence, range, and relative population abundance within the study area.

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