

STUDY TITLE: Southwest Florida Shelf Coastal Ecological Characterization

REPORT TITLE: Rare, Threatened, and Endangered Vertebrates of Southwest Florida and Potential OCS Activity Impacts

CONTRACT NUMBERS: BLM: MU0-48; MMS: 14-12-0001-30036

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BACKGROUND: A consensus of five listings from Federal, State, and private institutions and organizations has considered 68 southwestern Florida vertebrate species to be rare, threatened, or endangered. These vertebrate populations could potentially be reduced to non-sustaining levels by human activities. Leasing of Outer Continental Shelf (OCS) areas for oil and gas activities increases the potential for man-induced impacts upon sensitive vertebrate populations. Information necessary to assess population decline is usually unavailable because of vast amounts of time needed to gather conclusive data. Potential increased human activity due to oil and gas activities makes it imperative to compile information and make recommendations concerning these vertebrate populations.

OBJECTIVES: (1) To identify the rare, threatened, and endangered vertebrate species of southwestern Florida and describe their habitats; (2) to evaluate man-induced and oil and gas activity impacts on these species.

DESCRIPTION: A list of 68 terrestrial and nearshore vertebrate species considered rare, threatened, or endangered was compiled from five listings. The General Map of Natural Vegetation of Florida outlines 13 terrestrial habitats that exist within eight southwestern Florida counties. The habitats were described and the vertebrates that occur within each habitat were listed. Habitat importance to a particular vertebrate species was determined by relative animal density or frequency of occurrence within a habitat. The geographic distribution of vertebrate species by county was determined by calculating the number of species that occur within a county and expressing that number as a percentage of the total listed. The percent of the listed species that occur within a habitat type, and the percent of species for which each habitat is of primary importance, were also calculated. Man-induced impact on existing populations was represented by calculating the percentage of counties and habitats under development. Oil and gas activity scenarios were projected. By using recorded data, potential impacts on vertebrate populations were considered.

SIGNIFICANT CONCLUSIONS: Of the 68 listed vertebrate species, 36 species have broad ranges and have been recorded in all eight counties. The large range of these species makes them less susceptible to isolated impacts. The Florida panther is the only vertebrate of the broad range species to have a declining population. Coastal marine habitats (e.g., mangrove marsh), which harbor the largest number of rare and endangered vertebrates and species restricted to one habitat, are most susceptible to oil and gas activity impact. None of the listed vertebrates have population declines due to natural causes, so efforts should be made to protect the vertebrates from habitat alteration.

STUDY RESULTS: The list of 68 vertebrate species includes all that have been or would be affected by habitat alteration in the eight southwestern Florida counties. Of these vertebrates, 53% are found in all eight counties. The relative small study area (7,200 mi²) and high mobility of many vertebrates (e.g., birds) probably accounts for the cosmopolitan range. Monroe County (Florida Keys) harbors 87% (59 species) of the listed vertebrates and 20% (14 species) are restricted to this county. The Florida Keys, being a string of islands, allows for some genetic isolation and potential speciation which probably accounts for the presence of 9 endemic species or subspecies.

Habitat importance, as determined by presence of the listed vertebrates, requires primary emphasis. Mangrove/salt marsh habitat is occupied by 54% (37 species) of the vertebrates and is ranked first in importance. Estuaries, everglades marsh, and marl/rock marsh are second in habitat importance. Coastal and inland wetlands are critical habitats and must be protected from habitat alteration. Destruction of habitat, direct exploitation, and incidental disturbances have been indicated as the major causes of population decline. Potential oil and gas activity in the eight counties can accelerate the increase in these detrimental factors. Onshore facilities should be located as far from the most critical habitats as possible.

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