

STUDY TITLE: Southwest Florida Shelf Coastal Ecological Characterization

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

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

SPONSORING OCS REGION: Gulf of Mexico

APPLICABLE PLANNING AREAS: Straits of Florida; Eastern Gulf of Mexico

FISCAL YEARS OF PROJECT FUNDING: 1980; 1981; 1982; 1983

COMPLETION DATE OF REPORT: November 1981

COSTS: FY 1980: \$390,973; FY 1981: \$350,000; FY 1982: \$200,000; FY 1983: \$150,000

CUMULATIVE PROJECT COST: \$1,090,973

PROJECT MANAGERS: T. Sipe

AFFILIATION: U.S. Fish and Wildlife Service

ADDRESS: 1010 Gause Boulevard, Slidell, Louisiana 70458

PRINCIPAL INVESTIGATORS*: E. McCoy

KEY WORDS: Straits of Florida; Eastern Gulf; Southwest Florida Shelf; Florida; baseline; biology; characterization; endangered species; plants; terrestrial; habitat; distribution; impacts; literature review; synthesis

BACKGROUND: Certain plant populations of southwestern Florida are designated as rare, threatened, or endangered. Various natural and man-induced factors are responsible for the designations. An increase in man-induced factors may occur as a result of leasing areas of the Outer Continental Shelf (OCS) for oil and gas activities. Exploratory drilling may occur, and consequently oil and gas production and transport and onshore facilities may become a possibility. The most serious impact of oil and gas activities to southwestern Florida's plants would be due to oil spills. Baseline information concerning plants of southwestern Florida coastal counties must be considered so that plant distribution and current status can be related to natural variability and man-induced effects.

OBJECTIVES: (1) To summarize all published information concerning southwestern Florida's rare, threatened, and endangered plant species; (2) to describe natural and man-induced causes of plant rareness; (3) to evaluate impacts of oil and gas activities on rare, threatened, and endangered plants along the southwestern Florida coast.

DESCRIPTION: A list of 274 plants considered rare, threatened, or endangered in southwestern Florida was compiled from six listings. The criterion for plant status designation differed between lists. The Florida Committee on Rare and Endangered Plants and Animals (FCREPA) list was considered the most complete and up-to-date. The 274 plants were categorized by habitat, of which there were 17, and geographical distribution among eight southwestern Florida coastal counties. Plants on the FCREPA list were also categorized and expressed as a ratio to the total listing. The biogeographical distribution of the 274 plants and the FCREPA listed plants were determined by data gathered from various published accounts. The future extent of man-induced impact was projected by estimating population growth and area development. Oil and gas activity scenarios were projected and, by using recorded data (e.g., frequency of oil spills), potential impacts to plant populations were considered.

SIGNIFICANT CONCLUSIONS: Present Florida habitat is the range extremity for many plant species, making these particular species very susceptible to extinction. Habitat requirements for many species are very specific; therefore, habitat alteration by man's activity may be the most severe impingement on these species. The onset of oil and gas activities compounds man-induced impacts on plant habitats by increasing onshore development, water demands, and potential oil spills.

STUDY RESULTS: By expressing the FCREPA listed plants and the total compiled plant listing as a ratio during habitat and county distribution categorization, similarities and dissimilarities between lists could be delineated. The lists were quite similar in species composition within habitats and distribution of species among the eight counties, although the compiled listing may be over inflated.

Reasons for plant rareness within the eight counties were discussed. Life histories and population dynamics are virtually unknown for most plants listed; therefore, most natural causes of rareness could not be elaborated. The geologically recent exposure of coastal Florida allowed for colonization of various tropical plant species. Some of these species are rare due to geographic restrictions and have colonization only in tropical or semi-tropical localities. Man-induced impact is widespread, ranging from plant collection to habitat alteration. Land is under constant uptake for agriculture, urbanization, and mining. With the potential of oil and gas activities, the problem of land uptake and habitat alteration becomes compounded.

STUDY PRODUCTS: McCoy, E. D. 1981. Rare, Threatened, and Endangered Plant Species of Southwest Florida and Potential OCS Activity Impacts. A final report by the U.S. Fish and Wildlife Service for the U.S. Department of the Interior, Bureau of Land Management Gulf of Mexico OCS Office, New Orleans, LA. NTIS No. PB82-182452. FWS/OBS-81/50. Contract No. 14-12-0001-30036. 84 pp.

*P.I.'s affiliation may be different than that listed for Project Managers.