

Preliminary Investigation of the Florida Panther in Big Cypress Swamp

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INTRODUCTION

The Florida Panther, Felis concolor coryi, has been the subject of much speculation and concern regarding its status and distribution (Pritchard 1976). Population estimates vary from 20-200, yet no substantial data exists to support these numbers.

The need to find a viable population of panthers to study and begin answering questions regarding their status and general biology, has prompted the Florida Game and Fresh Water Fish Commission (GFC) to conduct preliminary field investigations throughout Florida. One population of panthers has been found in the Fakahatchee (Belden et al. 1977), and enough evidence (i.e., tracks and reliable sightings) supports the existence of a panther population in Everglades National Park (Dr. James Kushlan, Everglades National Park, Personal Communication).

The objectives of this investigation were to (1) check areas of the Big Cypress Swamp not previously checked before, for panther sign and (2) determine if an area, where a panther had been killed and panther sign had been found by ENP biologists, contained a reproducing population of these rare animals.

STUDY AREA

The study was conducted in the Big Cypress Swamp, an area of 3,120 square kilometers (Figure 1). Most of the tracking was done within the Big Cypress Preserve, which is 2,306 square kilometers and is administered by the National Park Service (Figure 2). Additional tracking occurred on the Seminole Indian Reservation.

Vegetation communities within Big Cypress range from pine forest to saltwater prairies or marshes (McPherson 1974).

Vegetation description used here follows McPherson (1973). Much of Big Cypress is pine forest, cypress forest, and mixed swamp forest.

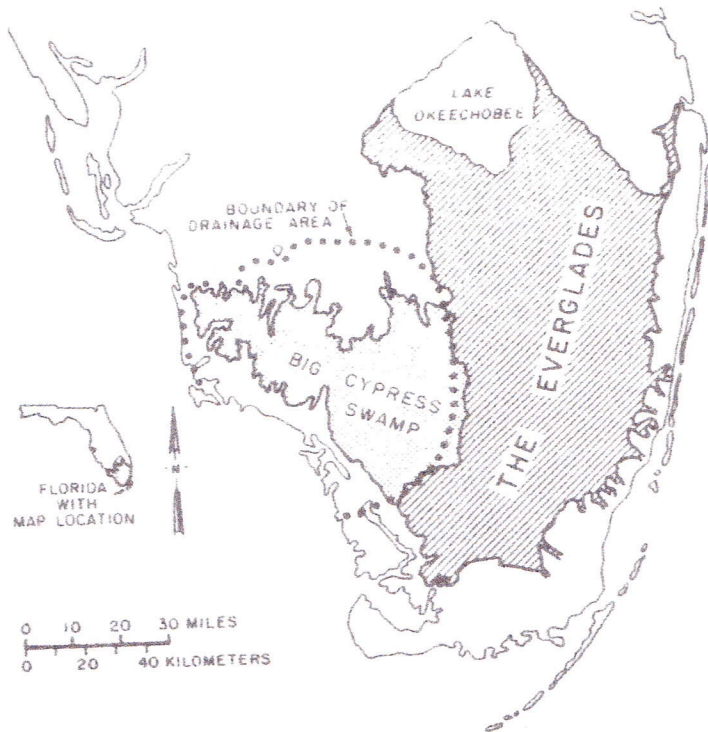
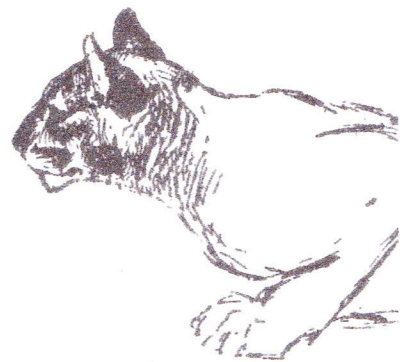


FIGURE ONE
BIG CYPRESS SWAMP
(From McPherson 1974)



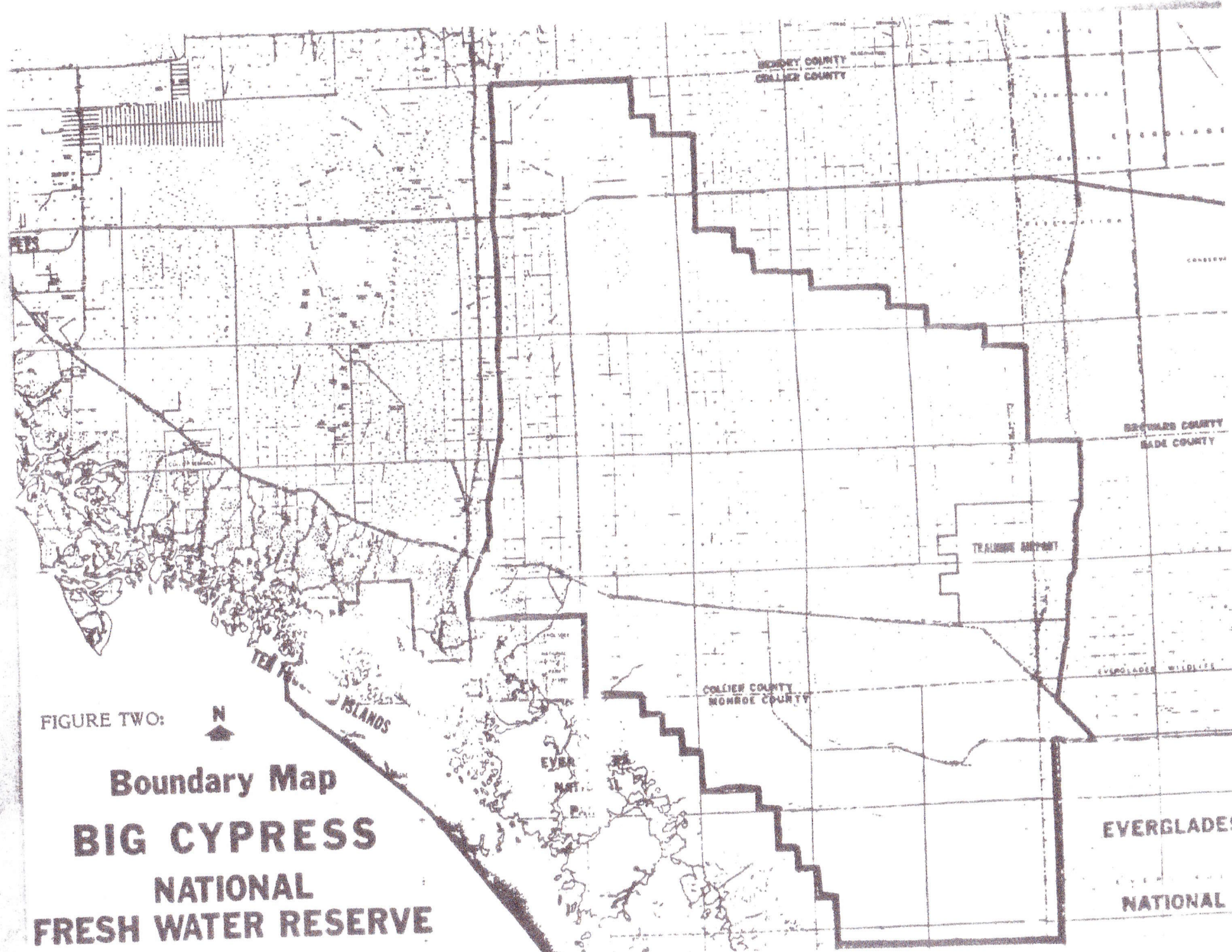


FIGURE TWO:



Boundary Map
BIG CYPRESS
NATIONAL
FRESH WATER RESERVE

Average annual rainfall is 133 centimeters, with 80 percent of the rain falling from May through October. Average temperatures range from 16°C to 32°C.

Prominent plant species in the pine forest include Slash Pines Pinus elliottii, Cabbage Palm Sabal palmetto, and saw palmetto, Serenoa repens. Scattered hardwood shrubs and trees are found in varying degrees. Grasses dominate the ground cover. These areas are several centimeters to a meter or more above surrounding cypress land and are maintained in a sub-climax association by fire. The cypress forest is composed primarily of small cypress trees, Taxodium distichum. A sparse growth of beak rushes, Rhynchospora sp, or sawgrass, Cladium jamaicensis, is scattered throughout. Cypress domes, which are circular or egg shaped, occur over much of the forest. The mixed swamp forest is usually a combination of many shrub and tree species. Land within this vegetation type varies and ranges from deep-water areas that are inundated most of the year to higher areas that are seldom inundated. Cabbage palm, red maple, acer rubrum, wax myrtle, Myrica cerifera, cocoplum, Chrysobalanus icaco, Sweet Bay, Magnolia virginiana, and Red Bay, Persea borbonia, are distributed widely in this forest. Willow, Salix caroliniana, Cypress, Pop Ash, Fraxinus caroliniana, and Pond Apple, Annona glabra, are more common in deep water. Laurel Oak, Quercus laurifolia, Dahoon Holly, Ilex cassine, Wild Coffee, Psychotria undata, Myrsine, Myrsine guianensis, and occasionally Live Oak, Quercus virginiana and pine grow on higher ground.

White-tailed deer, Odocoileus virginiana clava, are the most common big game animal in the area. Wild hogs, Sus scrofa, are distributed throughout the Big Cypress Swamp, but are not as common.

Smaller mammals which might be potential panther prey include marsh rabbits, Sylvilagus palustris, Eastern cottontails, S. floridanus, opossums, Didelphis

marsupialia, and armadillos, Dasyopus novemcinctos. Wild turkey, Meleagris gallopavo occur in the area and may be the only potential bird prey species for panthers.

Deer and turkey hunting are the primary recreational uses of the area. Cattle grazing occurs in the central and northwest section of the preserve. Oil exploration and drilling is currently underway in the northwest and east-central sections of the preserve.

METHODS

Tracking was conducted between 1 and 29 June 1978. Three hundred and seventy five kilometers (233 miles) were tracked from a swamp buggy and on foot. Tracks were measured and assigned to male and female categories according to size. Methodology used is similar to that developed by Koford (1977). However, front tracks were used instead of rear tracks for comparative purposes. Relationship of tracks to habitat was noted and the habitat described. All information was recorded in a field notebook, a copy of which is with Gainesville GFC.

RESULTS

Nine separate sets of panther tracks were found north of the jetport and west of L-28 canal (Figure 3). Based on size, location, the day found, and freshness five individuals are in this area. One is a juvenile or immature, two are believed to be female and two are males. A fresh panther scrape was found east of panther camp. Male tracks were found in the same vicinity. A scrape site exists at panther camp. Six old scrapes were visible at this site.

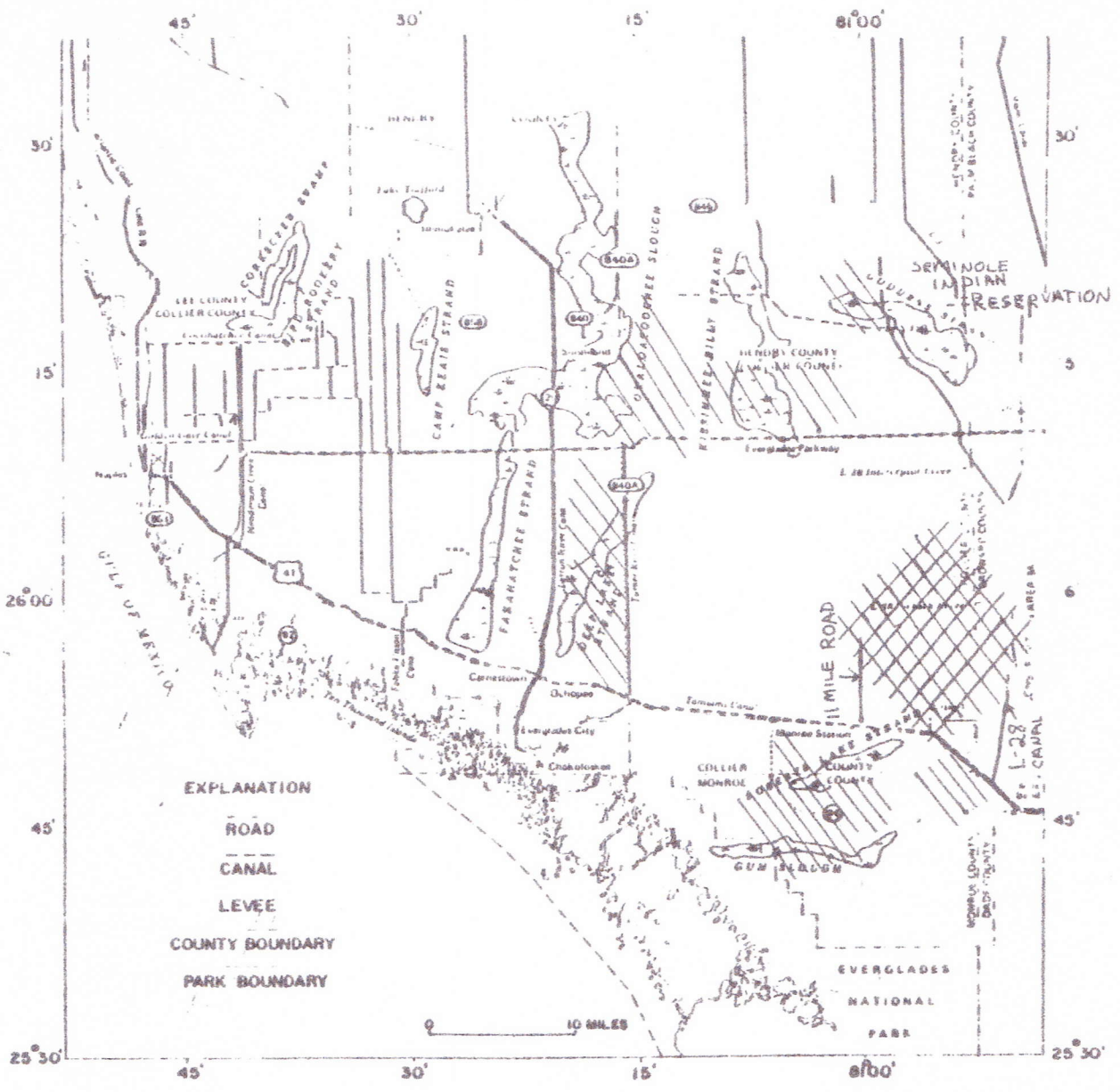


FIGURE THREE



Two scats were found and collected during the investigation. One was found on "11 mile" road west of L-28 and south of the oil well site. The second scat was found in combination with panther tracks near "Panther Camp." The scats are currently being analyzed in Gainesville.

Four additional areas in Big Cypress (Fig. 3) were searched for panther sign. A scrape was found on the Seminole Indian Reservation in a pine forest (see Appendix: Research). No panther sign was found in the other areas.

HABITAT RELATIONSHIP

Eight of the tracks were found in pine forest areas. One set of tracks were found in cypress forest. Tracking was not possible in inundated areas.

DISCUSSION

Although the tracks of an immature animal were found during this investigation, the discovery of a scrape site and scrapes may be better indications for the existence of a viable population of panthers.

Panther scrapes may serve to advertise a cat's presence, and serve to bring panthers together or to maintain distance (Seidensticker et al. 1973). Scraping, in large cats, combines visual and olfactory communication important to the maintenance of social organization (Schaller 1967, Schaller 1972, Seidensticker et al. 1973). Scraping may also be vital to reproduction. Schaller (1967) states that scent may communicate specific information such as the reproductive condition of a tigress, Panthera tigris. This possibility applies to the lion, Panthera leo, as well (Schaller 1972). Male cheetahs, Acinonyx jubatus, have been attracted by trappers by using female feces (Renate McVittie, Report to the IV International Cat

Symposium, 1977, unpublished). In California scraping by mountain lions was induced at a scrape site by using female mountain lion urine on an artificial scrape (Sitton 1977). In Idaho scrapes were attributed to adult resident male mountain lions, with the exception of some made by adult resident females without kittens (Seidensticker et al. 1973).

Discovery of immature panther tracks along with scrapes and a scrape site indicate a breeding population of panthers in the Big Cypress Preserve. Recommendations for monitoring this population, panther research, and management are found in Appendix 1.

ACKNOWLEDGEMENTS

Many people were helpful to me during the month I spent tracking in the Big Cypress. Employees of the Florida Game and Fresh Water Fish Commission that made this investigation possible were Chris Belden and Jim Shortemeyer who coordinated the project; Mark Robson and Dave Pylant were helpful in the field work; special thanks, however, belong to Chuck McKelvy and George Eddy whose invaluable help and companionship made the field work more enjoyable. Employees of Big Cypress Preserve that were beneficial to the project were Greg Hatfield, who took us to areas we were unfamiliar with and Fred Dayhoff who was helpful in pointing out hazards and buggy trails in areas we had not been before. Oron Bass and Linda McEwan of Everglades National Park were extremely helpful by showing me locations where they had found panther sign in Big Cypress. Joe Abrell, of ENP allowed me to take time off from my regular duties in Resource Management to conduct this study. Thanks Joe. Dick Houghton and Dale Lassiter were helpful by taking us into the area north of the jetport and showing us areas where we could

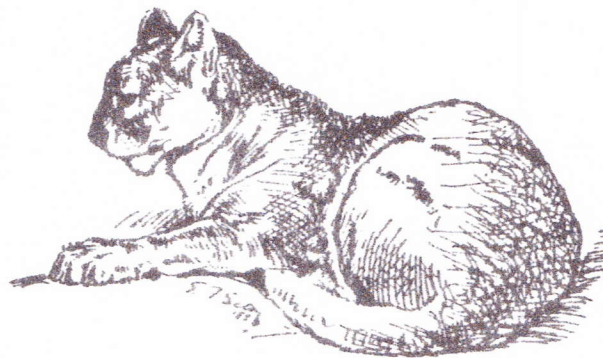
find panther sign (and did). Also Dick allowed us the use of his camp while we tracked that area.

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Appendix

RECOMMENDATIONS

The following recommendations dealing with monitoring this population of panthers, conducting necessary research and management proposals are based on my findings in Big Cypress and previous experience doing research on mountain lions in California.

POPULATION MONITORING

A monthly survey of the panther population in Big Cypress should be done. Research biologists for ENP will continue their surveying of this population in FY 1979 and do it on a monthly basis. Use of a road count index developed by Koford (1977) may give insight to population numbers and fluctuation in not only Big Cypress, but other areas as well, where good tracking conditions exist.

RESEARCH

1. An analysis of the deer population should be started as soon as possible. Deer appear to be the main prey item of the panther's diet.
2. If intensive research is done (i.e., live capture, radio telemetry, etc.) then only representatives of age classes should be captured and handled. Not all individuals within a study area should be captured and handled as has been the case in other studies (Hornocker 1970, Shaw 1975, and Sitton 1977, among others). Since we are dealing with an animal whose status is uncertain, decreasing the possibility of fatalities is essential. Intensive field work

utilizing panther sign can supplement information derived from sophisticated electronic techniques. Drop-off transmitters (Garcelon 1977) can be used so recapture to remove radio collars at the end of the study is avoided.

3. Additional areas in Big Cypress Preserve should be tracked during the dry season. Many areas, primarily mixed swamp forest strands, are inaccessible during the wet season because of inundation. Tracking is rather poor under water.
4. Based on the findings of a scrape and recent reports of panther sightings and tracks on the Seminole Indian Reservation, additional work should be done in this area.

MANAGEMENT

1. The area where this recently discovered population of panthers exists is included in areas recommended for delination as critical habitat for the Florida panther.
2. Oil exploration in this area should be halted and/or not allowed until the actual impact on panther populations is determined.
3. Vehicle use in the area should be restricted to existing trails, however continuation of good relations with hunters who have camps in this area is beneficial to the panther's well-being and protection.

4. Education for people using this area is important to prevent any future killings of panthers. Signs, pamphlets, and public talks are all possible forms of education.

