



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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ATLANTA, GEORGIA 30303

December 2, 1986

Memorandum

To: Florida Panther Interagency Committee

From: Discussion Leader, Technical Subcommittee, FWS, Atlanta, GA

Subject: Final Florida Game and Fresh Water Fish Commission Federal Aid Report on Health/Disease Study of White-tailed Deer in the Big Cypress, and the Annual Performance Reports for the Remaining of the FG&FWFC Florida Panther Reports (PANTHER INFO-15)

Please find attached a copy of the subject final study reports. Please ensure that your Technical Subcommittee receives any relevant information and that copies of the report are distributed to your staffs involved in Florida panther recovery activities as appropriate.

John I. Christian

Attachments

ANNUAL PERFORMANCE REPORT
Statewide Wildlife Research

State: Florida

Study No. E-1-10 II-E-2

Project Title: Florida's Endangered Wildlife/Panther Research

Section Title: Recovery Plan Implementation

Subsection Title: Florida Panther Recovery

Study Title: Florida Panther Habitat Utilization

Period Covered: 1 July 1985 - 30 June 1986

Abstract--Monitoring of Florida panthers (Felis concolor coryi) has been concentrated in the Bear Island Unit of the Big Cypress National Preserve, the Fakahatchee Strand State Preserve, and adjacent private lands. Six panthers including 3 adult females, 2 adult males and a juvenile male have been located a total of 480 times. Females exhibit relatively small, exclusive home ranges while adult males overlap with each other and adult females.

The majority of life history information concerning Florida panthers (Felis concolor coryi) is based on work in the Fakahatchee Strand State Preserve (FSSP) and eastern Big Cypress National Preserve (BCNP). An apparent gradient of general fitness increasing from south to north suggests better living conditions in the Bear Island Unit of BCNP and lands to the north. Information from these areas will be vital in evaluating the status of panthers in Florida as well as for providing insights for managing existing public lands. Movement data are essential for documenting habitat use, social interactions, feeding ecology, survival and dispersal of young, and differences in habitat quality among areas.

METHODS

Panthers were captured with the use of hounds, immobilized with ketamine hydrochloride, lowered from the tree, measured, biological specimens were taken

and a radio collar was attached or replaced. Cats were monitored 2 times per week; once each quarter they were monitored 14 days in succession, and 3 nights in succession. Night as well as day monitoring was aided by the use of Loran-C navigation equipment. Nocturnal and 24-hour monitoring from ground locations was initiated in early June to document the behavior of a female with a suspected litter. Pulse rate changes were recorded during monitoring episodes to use as an index to activity.

RESULTS

Panther male #7 was hit by a car and killed 26 October 1985 on SR 29, 4 miles south of SR 84.

From 13 January through 27 February 1986, 4 new Florida panthers were captured and fitted with radio collars. One Fakahatchee Strand resident female was recaptured and reinstrumented. Another adult female was not recaptured because she was raising a male kitten (see below). She was, however, treed and visually examined in early February.

Panther female #8 was recaptured and reinstrumented 13 January 1986. Movements of this animal continue to be within FSSP. No changes in movement patterns have been detected.

Kitten tracks were found accompanying tracks made by female #9 in December 1985. The male, 15 kg, 5-8 month old cat was captured on 15 January 1986 and radio-instrumented. Movements of this juvenile (#10) have closely matched those of his mother which have been concentrated along SR 84 in FSSP and the southern Golden Gate Estates. Day use areas, characterized by matted, chewed, and clawed vegetation, apparently were used by both cats and by the kitten only

during absences of female #9. Night flights indicated both cats have crossed SR 84 using existing, unimproved roads and canal crossings. All day locations have been south of Alligator Alley.

Female panther #11 was captured 21 January 1986 in the southern Bear Island Unit. Movements through April 1986 were scattered through the western half of the 30,000 acre unit. In early May (about 90 days after a week-long encounter with male #12) panther #11 restricted her movements to a large hardwood island surrounded by herbaceous marsh in southwestern Bear Island. Intensive ground monitoring demonstrated loyalty to one site located in dense saw palmetto. Movements away from the area lasted from a few hours to 36 hours. Intensive monitoring of this female will continue in order to verify the number of young accompanying her. Day locations of this cat primarily were in hardwood hammocks, and cypress swamps. Before exhibiting denning behavior, her movements included regular visits to private lands to the north of Bear Island.

Male panther #12 was captured in western Bear Island, 28 January 1986, in a hardwood hammock surrounded by herbaceous marsh. One week after his capture he spent approximately one week with female #11. Panther #12 crosses major highways with more regularity than any other currently instrumented cat. Movements to and from Bear Island and FSSP require regular crossings of SR 84 and SR 29. Locations in FSSP have been in mixed swamp vegetation and on occasion he has been found with female #8. Observations during nocturnal monitoring indicate this cat may use the shoulder of SR 29 (north of 84) as a travel corridor. It was also found that this cat was active in relatively open

marshlands during nocturnal periods. He also has been found on several occasions in proximity to female #11's den site. His movements have been documented 3-4 km north and west of Bear Island on private land.

Male panther #13 was captured 27 February 1986 in northeastern Bear Island in a hardwood hammock. The majority of locations for this cat have been in northern Collier and southern Hendry Counties on private lands. Habitats used by this male have included cypress swamps, mixed swamps, pine/palmetto woodlands; night flights additionally indicate his use of open agricultural lands and marshes. His southern-most locations have been documented in the vicinity of female #11's den site. Male #13 does not appear to cross any major highways.

Female home ranges appear to be rather discrete, exclusive tracts with some overlap spatially, but not temporally. Male home ranges are much larger. Both males overlap, sometimes in space and time and male #12 overlaps all three females.

DISCUSSION AND CONCLUSIONS

Monitoring will continue on these cats and any new ones captured during FY 1986-87. The work is proceeding as scheduled.

The apparent lack of mortality from October 1985 through June 1986 may have allowed for the establishment of a stable social arrangement among lions in the Fakahatchee Strand/Bear Island area. In other big cats the loss of a single dominant adult male may result in such a high level of disruption and social strife among local individuals that reproductions in all cats may cease

completely for up to 3 years (M. Sunquist, pers. comm.). It is possible that this situation may have existed in this area prior to 1986.

The distribution of our 6 cats is similar to stable/closed mountain lion populations in Idaho (Hornocker 1970, Seidensticker et al. 1973). Concomittant to a stable social structure is successful reproduction which has been exhibited by 2 of the 3 adult females in the study area. The non-reproducing female may be experiencing the effects of old age, poor nutrition or a combination of both factors. An excellent test of the null hypothesis: the south Florida panther population is not stable/closed, will be the continued monitoring of adult and juvenile cats (assuming the eventual instrumentation of female #11's kittens) and a comparison of movements following dispersal and the eventual home range establishment by young cats. If these cats disperse to areas outside of our core adult population we can reject the null hypothesis and conclude that the current study area is saturated at maximum density.

Whatever we discover, the results will have important management implications. Successful dispersal will suggest areas of suitable habitat not currently occupied by panthers. The occurrence of strife among resident adults and dispersing individuals may suggest limited opportunities for successful home range establishment. These findings will be essential in guiding future land acquisition programs, and effecting management strategies on currently or potentially occupied public and private lands. Further, this work should continue to expand in light of severe pressures being placed on south Florida

due to citrus, agricultural and urban encroachment. These impacts need to be evaluated in terms of panther behavior and social structure, especially in light of the fact that populations that are constantly in a state of flux fail to reproduce.

Prepared by: David S. Maehr, Biological Administrator I

Table 1. Vital statistics of Florida cougars captured from 2/10/81 to 2/27/86.

<u>Tattoo Number</u>	<u>Capture Date</u>	<u>Sex</u>	<u>Age</u>	<u>Weight(Kg)</u>	<u>Capture Location</u>	<u>Condition</u>	<u>Recapture Date(s)</u>	<u>Condition</u>	<u>Mortality</u>
01	2/10/81	M	10-12	54	Fakahatchee Strand	Good			12/16/83 MM 18, Alligator Alley, Road Kill, 56 Kg
02	2/20/81	M	10-12	49	Fakahatchee Strand	Good	1/26/82 1/29/83 1/30/84	Good Good Poor	10/27/84 Fakahatchee Strand, 36 Kg
03	1/23/82	F	8-10	31	Fakahatchee Strand	Good	1/17/83	Poor-Good	1/17/83 Capture Mortality, 31 Kg
04	1/27/82	M	7-8	51	Fakahatchee Strand	Excellent	1/29/83 1/22/84	Good Excellent	4/18/85 N. Fakahatchee Strand, Road Kill
05	2/23/82	F	7-8	45	N. Fakahatchee Stand	Good-Excellent			11/18/83 N. Fakahatchee Strand Unknown Cause
06	2/27/82	M	6-7	55	Big Cypress Nat. Pres.	Good			4/16/82 "Blunt Trauma"
07	3/2/82	M	6-7	55	Big Cypress Nat. Pres.	Excellent	3/27/83 1/26/85	Good	10/26/85 Hwy. 29, 4 mi. so. of Alligator Alley
08	3/25/84	F	7-8	33	Fakahatchee Strand	Good	2/21/85 1/13/86	Poor Poor	No
09	1/26/85	F	3-5	36	Fakahatchee Strand	Good	2/26/86	Poor-Good (with kitten #10)	No
10	1/15/86	M	5-8 mos.	15	N. Swan Lake Prairie (Blocks)	Good	2/26/86	Good	No
11	1/21/86	F	4-6	41	Bear Island	Good			No
12	1/28/86	M	4-6	55	Bear Island	Good			No
13	2/27/86	M	4-6	57	Bear Island	Excellent			No