

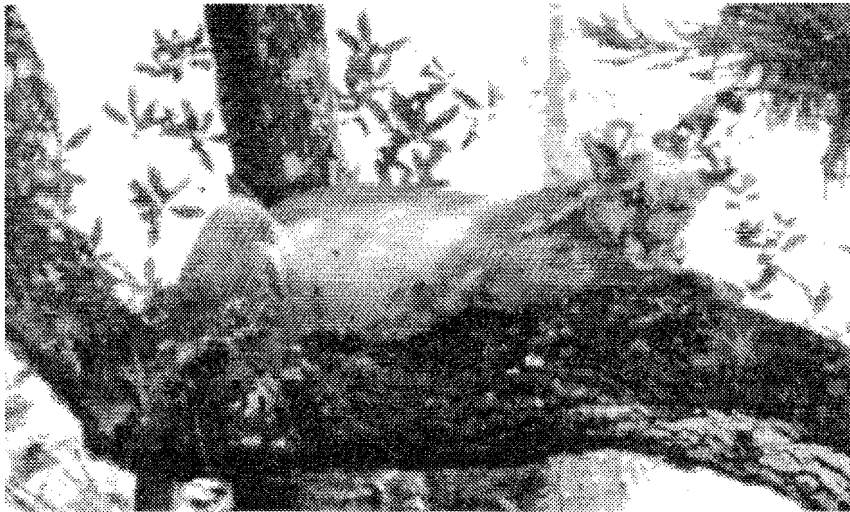
Current Panther Distribution, Population Trends, and Habitat Use Report of Field Work: Fall 2000 – Winter 2001

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Release

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The views expressed in this report do not necessarily reflect those of the FWC, nor does the contractor represent the FWC either officially or unofficially.

Table of Contents

	page
Introduction	1
Results from the Field	1
Capture Efforts	1
Noteworthy Incidents	2
Current Verifiable Population Size and Distribution	3
Population Trends	4
Capture Success Rate	4
Population Growth Indicators	5
Habitat use	6
The Role of Forests	6
South Florida Forests	6
Habitat Selection	8
Conclusion	9
Tables	10
Highlights of Field Work	13
Acknowledgments	24
References	24

Introduction

During the past 21 years, 116 radio-collared panthers have been monitored in South Florida and over 100 kittens have been marked at the den. As panther research enters its third decade, valuable information is being gathered about distribution, habitat use, and the effects of genetic introgression.

Theories about panther health, fecundity, and habitat requirements offered in early published reports were based on much smaller sample sizes than are currently available and did not have the benefit of information gained from genetic restoration, recent reproductive trends and habitat use patterns.

A significant expansion of the panther population has followed the introduction of eight female panthers from Texas into the South Florida gene pool. Intercrossed panthers are robust and reproductively healthy, occupying large areas of habitat described in published reports as unsuitable for panthers. The success of genetic introgression is providing a new benchmark by which to evaluate the restricted distribution and low reproductive fitness observed in Florida panthers prior to 1995.

Results from the Field

Capture Efforts

The Florida Fish and Wildlife Conservation Commission's (FWC) twenty-first capture season began on November 7, 2000, with the addition of #95_{F1}, a robust 95 lb. female, in Everglades National Park (ENP). The FWC team spent 75 days in recollaring 10 panthers, capturing 12 new ones, marking 8 kittens at their dens, and recapturing one panther whose radio-collar had failed (see Tables 1–3, pp. 10–12).

As was the case last year, we spent a major portion of our time, 56% (42 days), trying to relocate and recapture three of ten panthers whose radios had malfunctioned. Our highest priority was TX105 in the ENP, and nine days were expended in her recapture. She spent most of her time in a roadless area, and we felt fortunate to recapture her at all.

Twelve days were spent trying to recapture #66_{F1}. Her home range is on private land, where we have no permission for access, so we hunted for her on the adjoining Florida Panther National Wildlife Refuge (FPNWR), hoping she and her two kittens might cross the Refuge boundary. Although #66_{F1} did not return to the Refuge, we did capture five new panthers (#96, #97, #99, #105, and #106) during the twelve very productive days spent there.

Twenty-one days were spent in Big Cypress National Preserve (BCNP) trying to recapture #70_{F1}, whose collar had failed. Once again, we did not recover the panther with the failed radio, but we caught new panthers #102, #103, and #104 and treed three other uncollared

juveniles that we did not collar due to heat or other risk factors, for a total of six uncollared panthers treed in twenty-one days in southern BCNP.

A total of ten days were spent hunting in northern BCNP conducting routine survey work. During this time, three new panthers were collared: #98, #100, and #101.

This year the BCNP capture team found tracks of a female panther in the Deep Lake Unit, tracks of a female and one kitten in northwestern Turner River Unit, and also tracks of a male panther south of US41 in the Gum Slough area. This male panther was treed on February 14, but was not collared due to excessive heat.

Noteworthy Incidents

A milestone for capture efforts was reached on January 31 with the capture of our one-hundredth panther, a 154 lb. male with a kinked tail, a cowlick, one testicle, and a heart murmur (see Figure 10). We caught nine Florida panthers this year with some of these characteristics, indicating that genetic restoration has not yet reached the entire population. Thus far, the Texas crosses have not displayed heart murmurs or chryptorchidism, and their stamina and vigor are easily discernible during captures (McBride 2000).

The most significant event of the year, with the strongest implications for further panther recovery, was the birth in May of four kittens south of US41 to panther #88_{F2}. This was the first den ever recorded south of US41, and it confirmed Dr. Cunningham's earlier observation of #88's pregnancy.

Additional information to support the beneficial impacts of genetic restoration was recorded on November 15 when #79_{F1} (male) was captured to replace a failing radio-collar. At that time he was electro-ejaculated by Smithsonian theriogenologist Dr. Jo Gayle Howard, who performed a semen exam. She reported that the volume of #79's sperm was three times that of a Florida panther, sperm motility was twice as high, percentage of normal sperm was four times greater, and sperm concentration was increased by a factor of ten (pers. comm., Drs. Howard and Cunningham).

Our capture season was marred by two capture-related injuries. Panthers #65_{F1} and #104_{FX} suffered broken legs during capture and were removed for rehabilitation. Both have recovered and are scheduled for return to the wild in late Fall 2001. During his recuperation, #65_{F1} also underwent a sperm evaluation. Results were comparable to those for #79, even though #65 was undergoing the stress of captivity and numerous surgical procedures to repair his broken leg (Dr. Cunningham, pers. comm.).

The capture season ended on April 12 with the addition of panthers #105 and #106. Our season started with the capture of a new panther on the first day and ended with the capture of two new panthers on the last day.

Current Verifiable Population Size and Distribution

The verifiable number of 78 panthers represents the highest population that has been documented thus far. It includes collared and uncollared, adult and subadult panthers. It does not include kittens at the den site, nor does it include extrapolations. Panthers whose radios have failed are still retained on the inventory, as they have not been recovered. Some of these panthers may be dead.

Everglades National Park

Number of panthers : 7

Six collared panthers: TX105, TX108, 85_{FX}, 61_{F1}, 94_{F1}, 95_{F1}; and one uncollared panther seen from the air with 61_{F1}.

Big Cypress National Preserve south of US41

Number of panthers : 2

88_{F2}, and an uncollared male treed at Gum Slough. #88_{F2} gave birth to 2 male and 2 female kittens in May.

Big Cypress National Preserve north of US41, south of I-75, including the Deep Lake Unit

Number of panthers : 22

Eleven collared panthers: FP55, 70_{F1}^{*}, 71_{F1}^{*}, 79_{F1}, 86_{F2}, 87_{FX} (with 3 juveniles nearing dispersal age), 91_{F2}, 93_{FX(75)}, FP102, #103_{FX}, and 104_{F2}^{**}; and tracks of 8 uncollared panthers, including juveniles.

Big Cypress National Preserve north of I-75 and Big Cypress Seminole Indian Reservation

Number of panthers : 16

Twelve collared panthers: FP48^{*}, FP49, FP56^{*}, FP67, FP69^{*}, 73_{F1} (BCSIR), FP75 (private land), 77_{FX}^{*} with 2 juveniles, FP81, FP98, FP100, FP101. Tracks of an uncollared female east of Baker's Grade and an uncollared panther seen from the air west of Baker's Grade.

Fakahatchee Strand State Preserve and Picayune State Forest

Number of panthers : 6

Four collared panthers: #83_{FX} (with at least 1 juvenile), FP54^{*}, FP57^{*}, FP60, and an uncollared female.

Florida Panther National Wildlife Refuge, Catherine Island and Smallwood

Number of panthers : 15

Eight collared panthers: FP32, FP78 (with 2 juveniles), 66_{F1}^{*} (north of Refuge, with 2 juveniles when last seen), FP59, FP97, FP99, FP105, FP106; 1 adult female, 1 juvenile male, and 1 juvenile female at Pacific Farms.

OK Slough and adjacent private lands

Number of panthers : 6

Two collared panthers: #65_{F1}^{**}, #FP82 (with 3 kittens in the den), and an uncollared male and an uncollared female with 1 or 2 juveniles. Both male and female tracks found as late as May 2001.

Outliers

Number of panthers : 4
Catfish Creek: FP62* (male, location unknown)
Sarasota County: 1 uncollared panther
Crew Lands: 1 uncollared male, 1 uncollared female
Corkscrew: Tracks of an uncollared male on Corkscrew Sanctuary, May 2001.

Total: 78 panthers

*Collar has quit.

** In captivity, convalescing from an injury.

(Ranges of some resident males overlap Fakahatchee Strand, Panther Refuge and Bear Island. These males were assigned to a single area to avoid counting them twice.)

Population Trends

Capture Success Rate

One approach that may be used to evaluate panther population trends is to examine the rate of capture success for effort expended during the period 1981–2001. Our hunting and capture methodology has remained consistent throughout the past 21 years. Even though the panther project has been directed by five different FWC section leaders, we are still using the same houndsmen, identical techniques, and even descendants of the original hounds.

Capture efforts began in 1981 in the Fakahatchee Strand and later expanded to include BCNP, private ranches, ENP, and BCSIR. By 1990, no extensive panther habitats remained unexplored and very few panthers remained uncollared (McBride 2000). Throughout the period 1990–1995, the small number of new panthers added to our sample each year were primarily offspring of females already collared (Figure 1). When an effort was mounted to recover a panther whose radio-collar had failed, it would eventually lead to the recapture of that individual and to the unintentional treeing of a large number of panthers already collared. Uncollared panthers were rarely treed during these efforts. Because female offspring generally occupy areas overlapping their mother's home range, we should at the very least have caught surviving juvenile females during routine capture or recollar efforts prior to 1995. However, results of similar capture efforts after genetic restoration began are in sharp contrast to those between 1981 and 1995. For example, while hunting for a failed radio this year in ENP, we captured one new panther; while hunting for a failed radio in FP-NWR we caught five new panthers; while hunting for a failed radio in BCNP, we treed six uncollared panthers; while surveying Bear Island and the Addition Lands, we treed three new panthers.

Even though some of our earlier capture seasons were three times as long as they are now, and we attempted to capture virtually every panther we could find sign of, it took us nine capture seasons to collar the first 27 panthers. In contrast, it has taken us only two capture seasons to collar the last 27. This year we actually ended our field efforts with collared

females accompanied by offspring that we made no attempt to capture, and seven panthers with failed radio-collars that were not hunted.

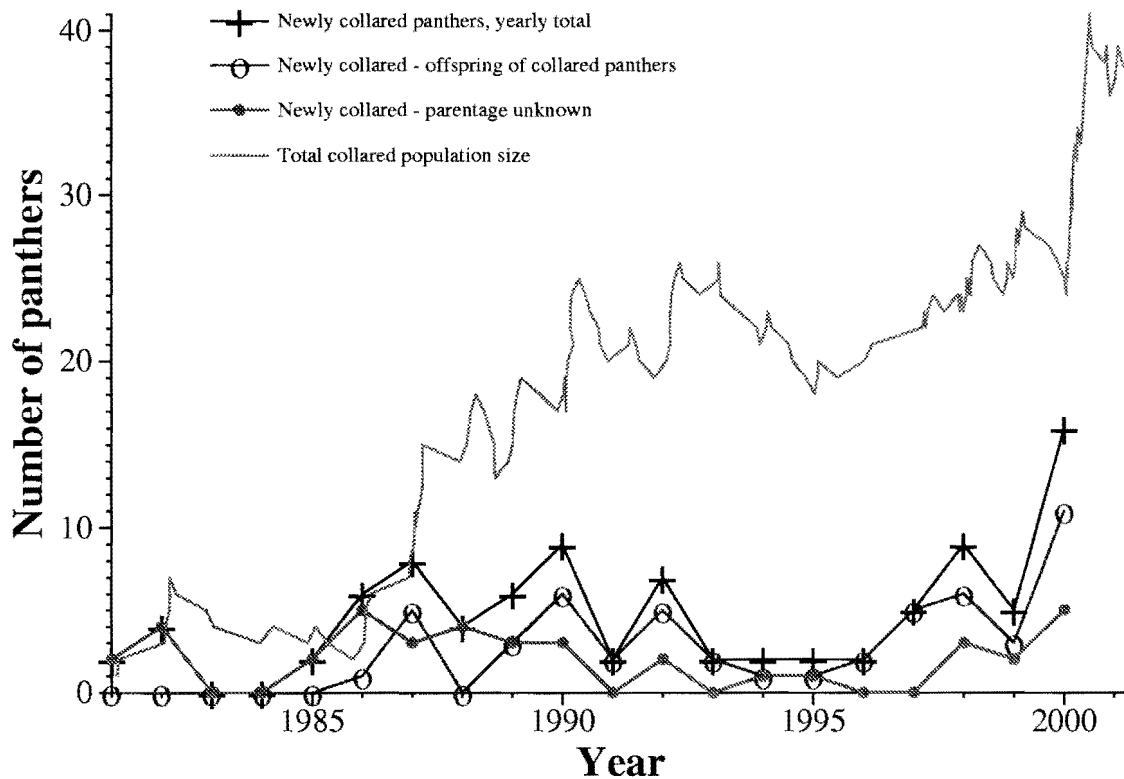


Figure 1. Yearly counts of newly radio-collared panthers.

Population Growth Indicators

If capture success rates over the past 21 years can be used to evaluate panther population trends, it is apparent that the South Florida population was static between 1981 and 1995, and even declined in some areas (e.g., ENP and eastern Big Cypress). There was no perceptible improvement in panther demographic trends prior to the release of eight female Texas panthers in 1995. Between 1995 and 2001, all signs indicate that the population has been increasing. While new uncollared panthers were captured at a rate of one new panther per 14-21 days in the early years of our capture efforts, we are now capturing new panthers at a rate of one panther per 4.62 days.

Estimates that first and second year kitten survival rates prior to 1995 were 80% and that the population was reproductively healthy (Maehr et al. 2001) cannot be substantiated by capture results. If indeed kittens were surviving at such a high rate, we should have encountered them in the process of routine capture efforts just as we do now. Furthermore, other signs of an increasing population should have become evident. Recent indications of an expanding panther population, not observed prior to 1995, include increased highway mortality, increased denning, evidence of radio-collared panthers using wildlife crossings east of State Road 29, crossing of the Caloosahatchee River by three radio-collared panthers, and notably higher capture success rates.

Habitat Use

The Role of Forests

Panthers do not pursue and overtake their prey in an extended chase, as do wolves. Instead, they capture their prey after a short, high-speed rush from a concealed position. To accomplish this, panthers, like all cats that hunt by stalking or ambush, utilize cover in order to approach within striking distance (McBride 1976). Panthers also need cover for den sites. Unlike wolves and coyotes, panthers do not excavate or prepare a den, but rely on natural landscape features to conceal their kittens. Over the hemispheric range and distribution of panthers, the cover they utilize comes in many forms: the tall grass of the Argentine Pampas; the thornscrub of south Texas, northeastern Mexico, eastern Bolivia and western Paraguay; the treeless desert mountains of the southwestern United States and northwestern Mexico; the flooded wetlands of the Venezuelan Llanos; and the rimrock country along the escarpments of numerous mountain ranges from Alberta to Argentina. My experiences capturing panthers in these ecosystems have convinced me that, although panthers do well in forests with understory, the absence of forest is obviously not a limiting factor. In Florida, suitable cover for panthers is sometimes found beneath a forest canopy in the form of a dense understory. However, not all Florida forests have this understory, nor are all forests in South Florida frequented by panthers. It is the cover provided by the understory that panthers find useful in forests rather than the trees.

South Florida Forests

An example of forests that are unsuitable for panther use is the oak hammocks, cypress domes, and pine flatwoods north of BCSIR and east of OK Slough. This area is dominated by improved pasture and large oak hammocks that are heavily grazed and used for shade by cattle (Figure 2). Even the cypress domes in this area are absent of ferns and other native

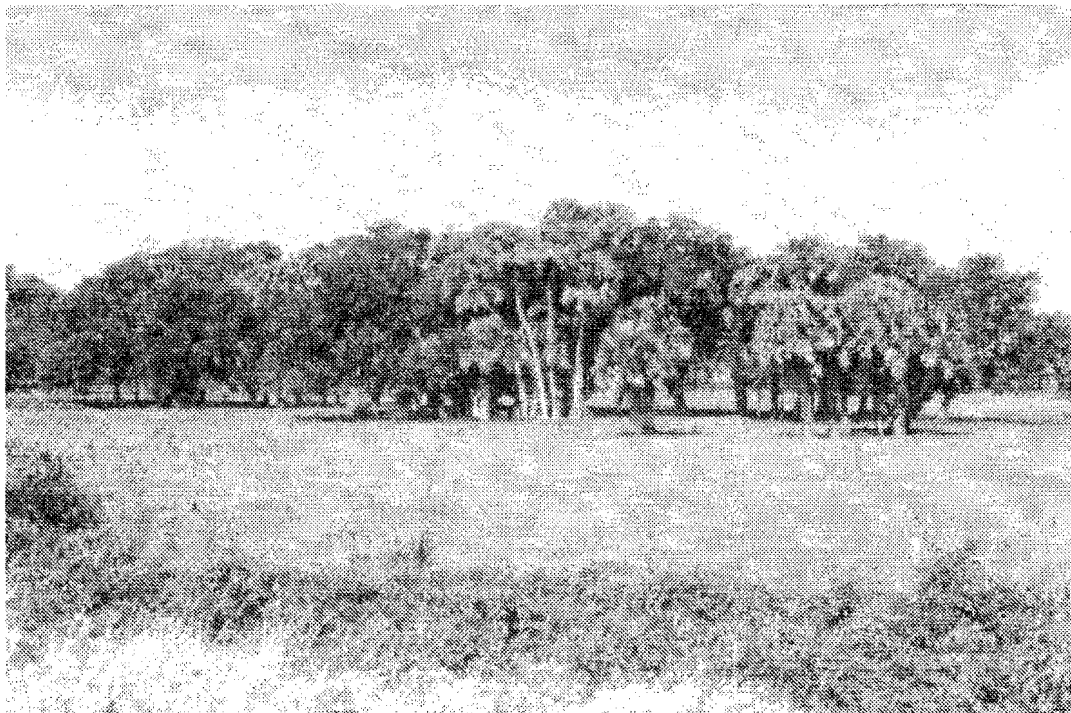


Figure 2. Oak hammock with no understory, surrounded by improved pasture.

ground cover. These parklike woodlands, when seen in satellite photos, may seem suitable for panthers. However, when viewed from ground level, it is obvious why panthers do not use them. Telemetry data points are rare in this area, even though resident breeding populations of panthers occupy adjacent areas. A substantial amount of the area north of the Caloosahatchee River that appears as panther habitat in satellite photos falls into the category of forest with no understory. To further diminish the usefulness of these types of forests for panthers, the openings connecting the hammocks are not native pasture with tall prairie grasses or sedges, but open bahia fields, where it would be hard for a golf ball to hide, much less a panther.

Conversely, the area south of I-75, described as unsuitable for panthers because of poor soils and thinning forest cover (Maehr 1997), is actually a mosaic of forest with dense understory and prairies interspersed with marshes and tree islands (see Figure 3). These natural prairies support vegetation that is tall enough to obscure a panther's profile and furnish sufficient cover for panthers to successfully stalk deer, particularly under the cover of darkness.



Figure 3. Excellent panther habitat: forest with dense understory in background; wet prairie in foreground, complete with willows and swamp lilies (preferred deer forage).

The importance of BCNP prairies to panther prey has been confirmed by recent deer surveys by helicopter. As many as 241 deer were counted during a two-hour flight over Windmill Prairie, and 121 deer were counted during a similar flight over Airplane Prairie. These prairies, each comprising 11,000+ acres, are surrounded by cypress strands and dotted with small tree islands. Panther tracks can be found on a regular basis in the nearby strands

and out in the prairie itself. Panther #93_{FX} frequents this area and sometimes spends the day on one of the small tree islands in the prairie (D. Jansen, pers. comm.). Big Cypress south of I-75 has plenty of uplands, cypress strands, sloughs, and wet prairies to furnish suitable cover for panthers and natural openings for their prey. ENP is an excellent example of a place where panthers live with even less forest cover than is found in Big Cypress (Comiskey et al., in review). Approximately 30 panthers currently occupy southern BCNP and ENP.

The recent increases in deer and panther populations south of I-75 have taken place during what Big Cypress hydrologists describe as the wettest decade on record since the establishment of the Preserve (B. Sobczak, pers. comm.). This increase is inconsistent with the upland preferences attributed to these animals, which predict benefits from drought rather than hydration (Maehr 2001).

Habitat Selection

A further illustration of panthers' diverse habitat use occurred this year when two panther dens were discovered in sawgrass. The first den was on the OK Slough WMA, hidden in a sawgrass slough that lay between two oak hammocks. These hardwood hammocks were located approximately 100 yards on either side of the sawgrass den site, and each hammock contained a dense understory of saw palmetto.

The second sawgrass den was found in southern Big Cypress south of US41, 100 yards from a cypress strand and 50 yards from an oak scrub with palmettos. Even though forests were available, neither of these panthers chose forest for their dens, but rather chose the denser vegetation of sawgrass. Cover is the essential element in den selection, but suitable cover is clearly not restricted to forested sites.

While these examples do not mean that panthers seek sawgrass for den sites, they are excellent illustrations of how panthers use, in one way or another, the various habitat types within their home ranges. The individual components of panther habitat derive their value from the surroundings in which they occur. A five hectare tree island in a natural prairie in Big Cypress cannot be compared in value with a similar tree island in the center of a sod farm.

Other panthers have chosen low-lying areas over available uplands for home ranges. For example, panther #91_{F2} was born in BCNP south of I-75. At dispersal age, she twice traveled north of I-75 and investigated Bear Island and the Addition Lands. In both cases, after visiting an area that contains more upland forest than her natal range, she returned to southern Big Cypress and established a home range there. When captured for routine recollaring on March 21, this cat was in excellent physical condition (see Figure 16, p. 22, in **Highlights** section).

Panthers routinely select habitat types other than uplands for day resting sites and hunting grounds. After dispersing north of the Caloosahatchee River, panther #FP62 remained for over a year in an area that was a mosaic of bay swamp, oak scrub, palmetto, and pine flatwoods (Lake Wales Ridge ecosystem). In addition to the tri-weekly telemetry flights, #FP62 was monitored closely for over a year by two FWC biologists using ground tracking.

It was found that #FP62 spent the majority of his time in a cool and isolated low-lying bay swamp rather than in the adjacent high-and-dry scrub and pine flatwoods (Belden field notes, McBride field notes).

These two examples indicate there are other factors at work in panthers' choice of home ranges rather than the amount of upland habitats available to them. As Belden and others have indicated, panthers use the spectrum of habitats available to them (Belden et al. 1988, Belden and Hagedorn 1993, Dixon 1982). The concept that the distribution of panthers in South Florida has been limited by the amount of upland habitat (i.e., pine flatwoods and hardwood hammocks) is not supported by field observations or by the recent pattern of population expansion.

Conclusion

Over the past twenty-one years, we have learned a lot about panthers in Florida, at great public expense and with no small effort from a group of dedicated researchers. Putting that knowledge to work has led to a program to restore the genetic viability of the panther. Recent demographic trends accompanying genetic restoration lend support to the theory that the restricted distribution and low reproductive fitness observed in Florida panthers may be attributed more to a loss of genetic variability than to unsuitability of habitat.

Evaluation of capture success rates confirms other indications that the panther population was static or declining between 1981 and 1995. The same technique indicates a surge in the population since 1995. The current expanded distribution shows that panthers are now using a broader spectrum of South Florida habitats. Monitoring with radio-telemetry and ground tracking indicates that panthers in a natural landscape use or benefit from the various habitat types found within their home ranges.

The various agencies involved in panther recovery have taken positive steps in an attempt to improve conditions for panthers. The FWC has implemented genetic restoration – a groundbreaking approach to endangered species recovery that offers hope for other isolated and threatened populations; the NPS has removed over 500 squatter camps in BCNP; the DOT has constructed a highly successful system of wildlife underpasses; the FWC has prohibited the use of dogs in the general gun season; ORV use has been restricted to designated trails by NPS; exotic vegetation is being removed in ENP and BCNP; FPNWR has established a burn program and habitat management model that other agencies can aspire to. Clearly the greatest challenge for the future is the implementation of a plan to protect panther habitat. Thus far, a workable strategy has proven to be more elusive than the Florida panther.

Table 1. Newly radio-collared panthers.

Panther	Sex	Capture Date	Age	Parents	Location	Weight (lbs.)
95 _{F1}	F	11/07/00	2.75 yrs.	TX108,FP16	ENP	95
FP96	M	01/07/01	9 mos.	FP78,uk	FPNWR	54
FP97*	M	01/19/01	11 mos.	uk	FPNWR	60
FP98	M	01/25/01	2.5-3 yrs.	uk	NBCNP	130
FP99*	M	01/26/01	11-12 mos.	uk	FPNWR	64
FP100	M	01/31/01	4.5 yrs.	uk	NBCNP	154
FP101*	F	02/05/01	20 mos.	uk	NBCNP	56
FP102*	F	02/20/01	3 yrs.	FP55,uk	SBCNP	68
103* _{FX}	F	03/13/01	11-12 mos.	FP102,uk	SBCNP	45
104* _{F2}	M	04/02/01	6.5 mos.	uk	SBCNP	50
FP105*	F	04/12/01	6 yrs.	uk	FPNWR	90
FP106*	F	04/12/01	12-13 mos.	FP105,uk	FPNWR	68

Note: *FP* denotes Florida panther; *F1* denotes *FPxTX*; *F2* denotes *F1xF1*; *FX* denotes other crosses; uk = unknown.

* Genetic ancestry is best guess pending genetic analysis.

Table 2. Allocation of time among capture season tasks.

Tasks	Number of panthers	Capture team days
Scheduled recollars	10	20
Collar malfunctions	10/3/1 ¹	42
New adults collared	6	9
New juveniles collared	6	1 ³
Kittens marked	8	3
Accidental treeing of collared panthers	6 ²	0 ³
Panthers handled	31	75

¹ 10 collars have failed, 3 were hunted, 1 captured.

² treed but not handled.

³ some activities accomplished incidental to other pursuits.

Table 3. Allocation of capture season days by task / by region.

Region	Total days spent	Tasks completed				
		scheduled recollars	failed collars	marking new cats	hunting dens	accidnt. treeing
ENP	15	1	1	1		3
BCNP1	1	1				
BCNP2	25	2		3	1	3
BCNP3	10			3		
FPNWR	16	2		5		
FSSP	3	2				
BCSIR	0	1				
Private land	4	1				
OK Slough	1				1	
TOTAL	75	10	1	12	2	6

BCNP1 = BCNP south of US41

BCNP2 = BCNP south of I-75 and north of US41

BCNP3 = BCNP north of I-75

Highlights of Field Work

- **November 7** – First day of capture season - added new panther #95_{F1} to the sample of panthers in ENP. She was treed in eastern Long Pine Key. Capture weight: 95 lb. Age: 32 mos. Dam: TX108. Sire: FP16.
- **November 8** – Accidentally treed TX108 near Pine Glades Lake (ENP). Condition appeared to be fair.
- **November 13** – Accidentally treed TX108 again near Mud Rd. (ENP).
- **November 15** – Changed radio-collar on #79_{F1}, male, in BCNP (Figure 4). He was electro-ejaculated, and Dr. Jo Gayle Howard performed the semen exam. Dr. Howard reported that the volume of #79's sperm was three times that of a Florida panther, sperm motility was twice as high, percentage of normal sperm was four times greater, and sperm concentration was increased by a factor of ten (pers. comm., Drs. Howard and Cunningham).



Figure 4. Dr. Jo Gayle Howard checks sperm count on #79_{F1}.

- **November 17** – Changed collar on #65_{F1} on private land. During capture #65_{F1}'s leg was broken (Figure 5).

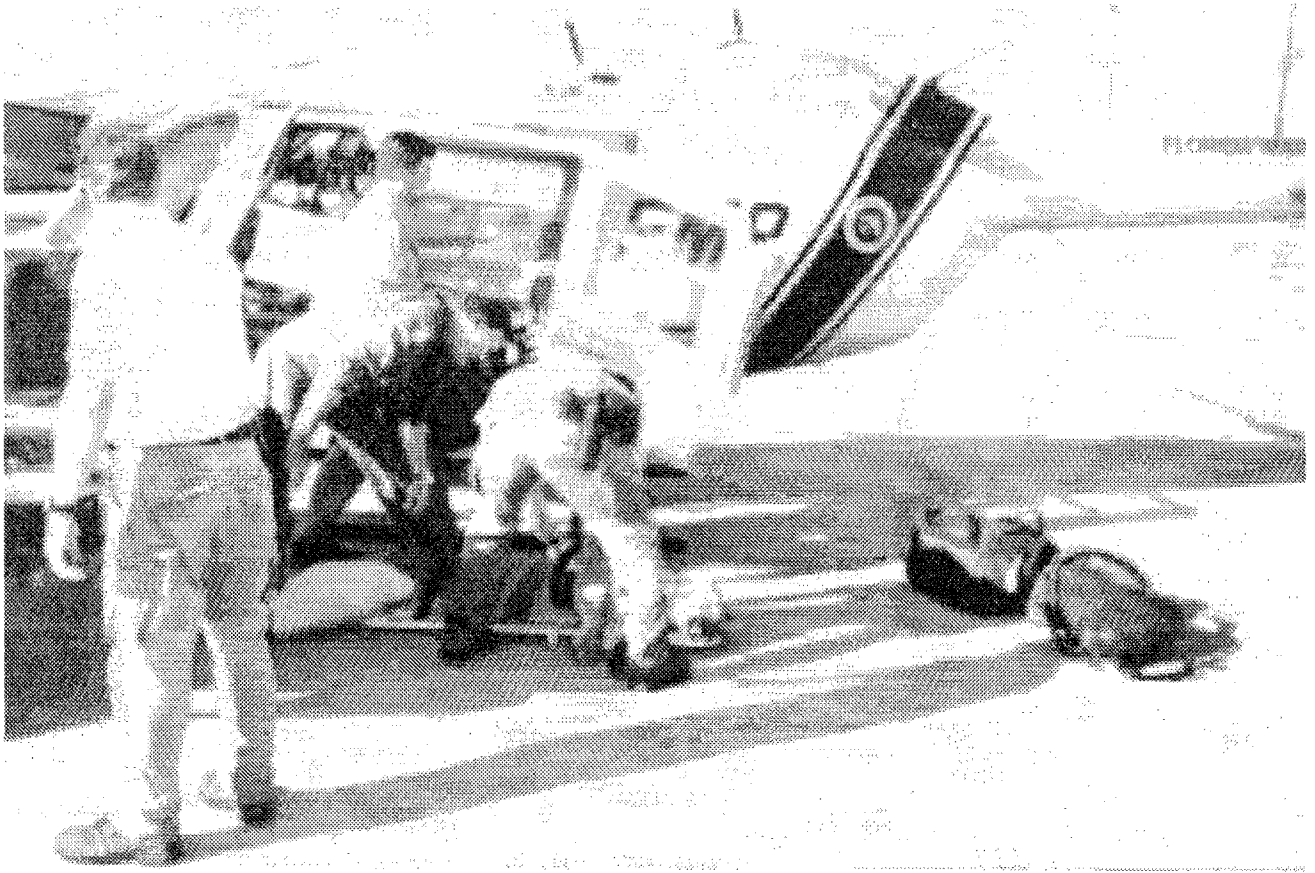


Figure 5: #65_{F1} gets airlift to hospital.

- **November 24** – Accidentally treed #94_{F1} in ENP while searching for her mother, TX105, whose radio had failed.
- **December 1** – Treed TX105 in ENP and replaced her failed radio-collar.

- **January 3** – Three new kittens marked at OK Slough, 1 male and 2 females. Offspring of #FP82. Den was in sawgrass (Figure 6).



Figure 6: Kittens of #FP82 in sawgrass den in OK Slough. Photo by David Shindle.

- **January 7** – Captured new panther #FP96, male, on Cochran Island in FPNWR. Weight: 54 lbs. Son of #FP78. Age: 9 months, but still had kitten teeth and no descended testicles (Figure 7).



Figure 7: #FP96 peers down from low oak tree.

- **January 12** – Recollared 92_{F2} male on northeastern corner of Fakahatchee Strand. Weight: 103 lbs. Age: 19 months. Had been in a fight with #FP59. Sire: 79_{F1}. Dam: 70_{F1}.
- **January 15** – Recollared 90_{F2}, male, on Seminole Indian Reservation. Weight: 93 lbs. Age: 19 months. Sire: 79_{F1}. Dam: 71_{F1}. Good condition.
- **January 19** – Captured new panther #FP97 (male) on FPNWR. Weight: 60 lbs. Age: 11 mos. Parents unknown (Figure 8).



Figure 8. #FP97 presents difficult shot for dart.

- **January 25** – Captured new panther #FP98, male. Age: 3 years. Weight: 130 lbs. Caught on northeastern side of Bear Island, BCNP (Figure 9).



Figure 9. #FP98 gets the dart in Bear Island, BCNP.

- **January 26** – Captured new panther #FP99, male, on FPNWR west of SR29. Age: 11-12 months. Brother to #FP97.

- **January 31** – Captured new panther #FP100, male. Weight 154 lbs. Age: 4.5 years. One testicle, heart murmur. Caught 0.5 miles south of Big Cypress Seminole Indian Reservation on BCNP Addition Lands (Figures 10–13).



Figure 10. #FP100, a 154 lb. male with kinked tail, cowlick, one testicle and heart murmur.



Figure 11. #100 with dart in place.



Figure 12. #FP100 displays the characteristic scars of a breeding age male.



Figure 13. David puts in the tattoo on #FP100.

- **February 5** – Captured new panther #FP101, female, on BCNP Addition Lands. Weight 56 lbs. Approximate age: 1.5 years (Figure 14).



Figure 14: #FP101 dispersing age female, northern BCNP.

- **February 7** – Found den of #87_{FX} - 3 kittens: 2 males and 1 female. Located about 3 miles north of Oasis Visitor Center in BCNP.

- **February 13** – Rosie gets caught by alligator, but escapes (Figure 15). Three panther dogs were killed this year by alligators.



Figure 15: Rosie escapes alligator and Dr. Mark cleans out the wound.

- **February 15** – Recollared #FP59, male, on FPNWR.
- **February 19** – Accidentally treed #79_{F1} in BCNP.
- **February 20** – Treed two new panthers in Turner River Strand (BCNP) and collared one of them, #FP102. Transponder scan identified her as the daughter of #FP55. She weighed 68 lbs. and was 3 years old.
- **February 26** – Changed radio-collar on #85_{FX}, male, in ENP. Weighed 110 lbs and was 2 years old.
- **February 27** – Changed radio-collar on #86_{F2}, female, in BCNP. Weight: 58 lbs.
- **February 28** – Changed radio-collar on #88_{F2}, female, in BCNP. Weight: 85 lbs.
- **March 7** – Accidentally treed #FP55 in BCNP. In the p.m. changed the radio on #83_{F1} in the Fakahatchee Strand. Weight: 88 lbs. One uncollared kitten of #83 was treed but not collared during the endeavor.

- **March 13** – Collared new panther #103_{FX}, daughter of #FP102. Treed in Monroe Strand, northeast of Monument Lake, BCNP. Weight 45 lbs. Age: 11-12 months.
- **March 14** – Treed uncollared yearling in Turner River Strand, BCNP. Thought to be offspring of #70_{F1}. Not collared because of heat. Estimated weight: 40-45 lbs.
- **March 17** – Two kittens marked at den of TX106 on FPNWR: 1 male, 1 female.
- **March 21** – Recollared #91_{F2} in BCNP near Osceola Hammock. Weight: 74 lbs. (Figure 16).

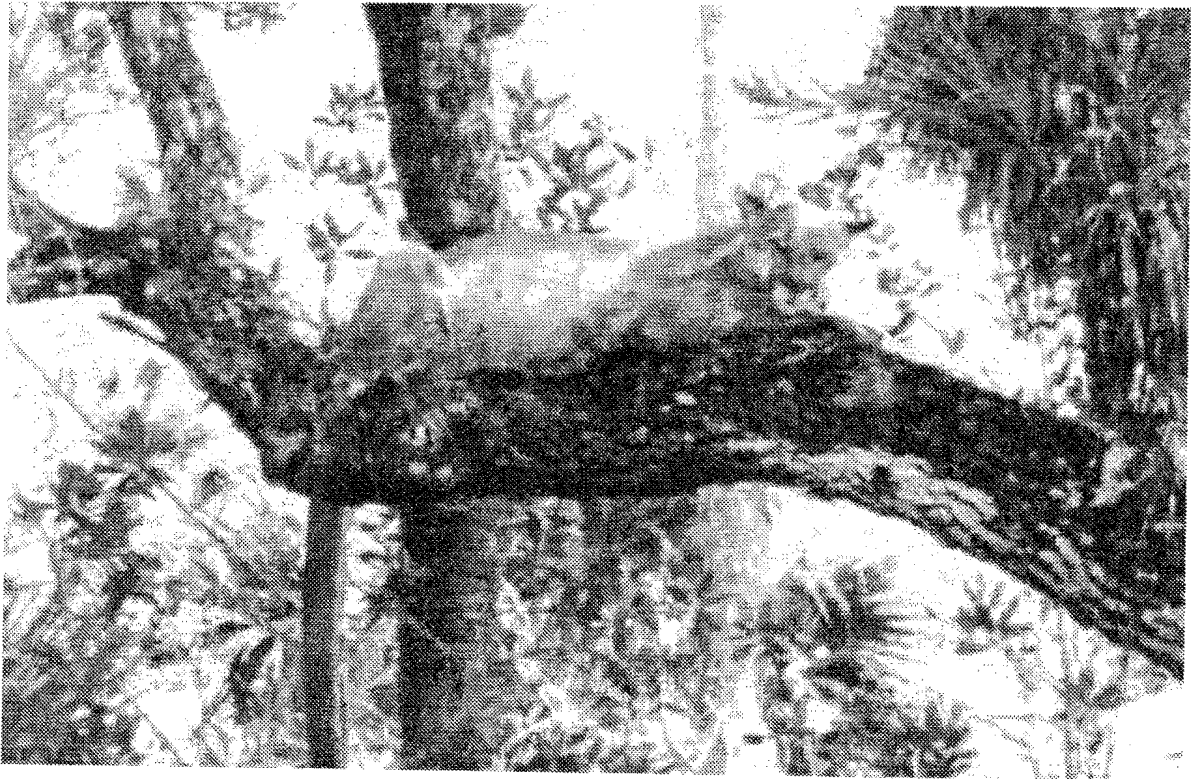


Figure 16: #91_{F2} patiently awaits routine changing of the collar (BCNP).

- **April 3** – Captured new panther #104_{FX} in Turner River Strand, BCNP. Thought to be yearling male offspring of #70_{F1}. Suffered broken leg during capture and was taken into captivity for recovery.

- **April 12** – Last day of capture season, caught 2 new panthers in FPNWR. #FP105 was an adult female, weight 90 lbs. Also captured her daughter, #FP106 (68 lbs., 13 months old). Their family group also includes two male kittens, #FP97 and #FP99 (Figures 17–18).



Figure 17. Last day of capture season. #FP105 and #FP106 get the workup.

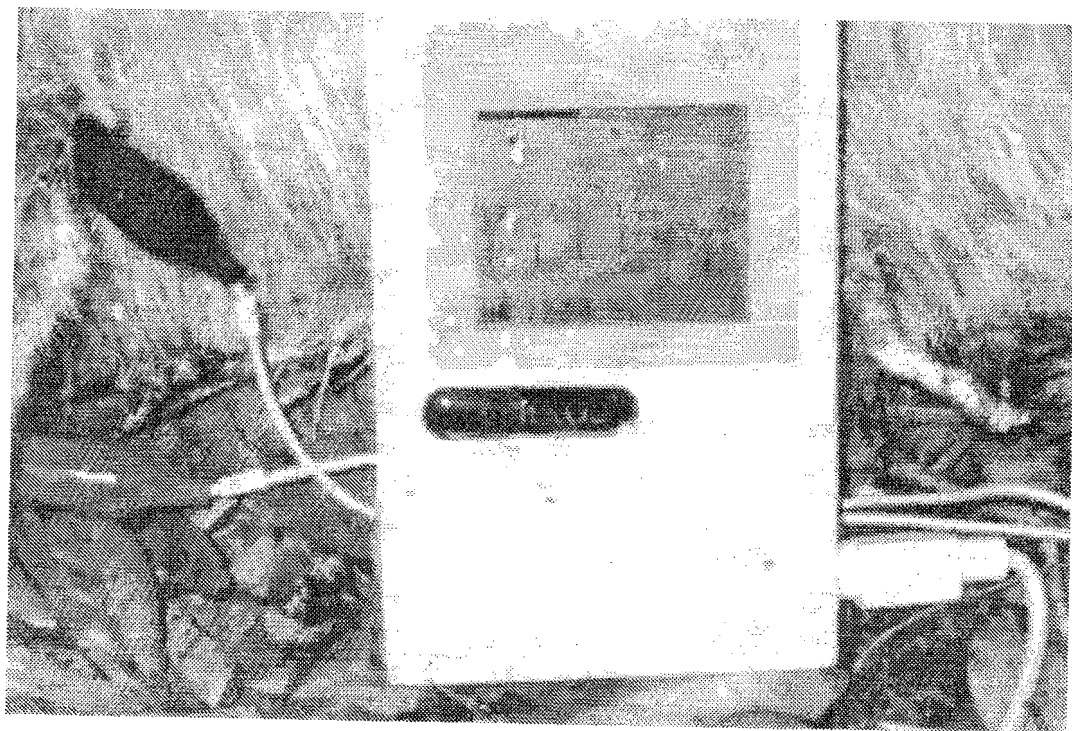


Figure 18. Dr. Mark checks irregular heart beat on #FP105.

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