

# **Annual Report on the Research and Management of Florida Panthers: 2005-2006**



**Florida Fish and Wildlife Conservation Commission**

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## Executive Summary

This report, prepared by the Florida Fish and Wildlife Conservation Commission (FWC), highlights information collected over the last fiscal year, 1 July 2005 through 30 June 2006, but also contains inclusive information related to Florida panther (*Puma concolor coryi*) research. Occasionally data (e.g., diagnostic test results) are presented from samples collected in prior fiscal years due to lag times involved with processing samples. Panther research and management is a cooperative effort, and we acknowledge the involvement of other agencies, particularly Big Cypress National Preserve (BCNP) and Everglades National Park (ENP) of the National Park Service (NPS). BCNP and ENP have located radio-collared panthers by plane within their respective park boundaries for 17 and 20 years respectfully, and resulting data have been incorporated into the telemetry database and are used with permission in this report. Beginning in 2003, BCNP was permitted by the U. S. Fish and Wildlife Service (USFWS) and FWC to conduct panther capture activities. These activities have been conducted within BCNP boundaries south of I-75. BCNP assembled their own capture team and have captured previously uncollared panthers, replaced radio-collars due to expected battery failure, marked neonatal kittens at den sites, and recovered carcasses. While some data (e.g., biomedical, demographic) of panthers handled by BCNP are contained herein for completeness of datasets, more specific information may be found in the BCNP annual report compiled by BCNP staff.

Telemetry data were collected on 42 radio-collared Florida panthers in southern Florida during the reporting period. Seven new panthers and 1 recapture wearing a failed collar were added to the radio-collared population monitored by FWC this past capture season. Seven panther dens were documented by the three agencies during the study period producing a minimum of 21 (11♂, 10♀) neonate kittens. All kittens were handled at their dens, permanently marked with subcutaneous transponder chips, and genetic material was acquired. A total of 148 panthers have been radio-collared since 1981 and 210 neonate kittens have been handled at dens since 1992. We documented the deaths of 4 (1♂, 3♀) radio-collared panthers and 13 (9♂, 4♀) uncollared panthers during the reporting period. Three of the uncollared

mortalities (2♂, 1♀) were identified by transponder chips as having been previously handled as neonates. Ten (6♂, 4♀) panthers died from vehicular trauma and 3 panthers (1♂, 2♀) died from intraspecific aggression. Two panthers (1♂, 1♀) died from septicemia; the underlying causes are unknown. A cause of death could not be determined for 2 panthers (2♂) due to advanced decomposition.

## Introduction

Florida panthers are endangered by a combination of population and habitat factors (Federal Register 2006). Loss and fragmentation of habitat and unregulated killing over the past 2 centuries have reduced the species in the southeastern United States to the point where only 1 population, recently estimated at 80-100 adults (Land and Lacy 2000; McBride 2001, 2002, 2003), exists on approximately 10,000 km<sup>2</sup> (2.5 million acres) of habitat in south Florida (Kautz et al. 2006). Small population size and geographic isolation increase the chance for extinction of Florida panthers due to demographic instability inherent in small numbers and erosion of genetic diversity from restricted gene flow and inbreeding. Genetic diversity is the basis for production of fit individuals as well as providing population plasticity in order to respond to changing environmental and habitat conditions (Frankham et al. 2002). Demographic variation has been considered important in regulating populations for many years, but the role of social and genetic factors has only recently begun to be examined as modern techniques from field biology and molecular genetics have become available. Recovery of the Florida panther is complex, but not an uncommon situation as many species face similar circumstances. A unique opportunity exists to implement conservation and management strategies for Florida panthers and evaluate results that will benefit Florida panthers as well as other imperiled species.

Natural exchange of genetic material occurred historically among the Florida panther population in the southeastern United States and contiguous populations of *P. c. cougar* to the north, *P. c. hippolestes* to the northwest, and *P. c. stanleyana* to the west (Young and Goldman 1946). Genetic exchange between populations ceased as the Southeast was settled. Florida panthers steadily declined in abundance and distribution (Alvarez 1993), likely a result of persecution and prey decline (but see Alvarez 1993, pp. 35-61, for competing theories on the decline of panthers). Gene flow is reliant upon individuals that immigrate and breed, but habitat fragmentation generally disrupts dispersal. Dispersal and immigration serve as a natural mechanism for mixing the gene pool and help minimize inbreeding within populations. Elevated levels of inbreeding can result in inbreeding depression, which can have

varied implications on populations including loss of genetic variation, declining health, reduced survivability, decreased fecundity, and potentially increase the risk of extinction (Frankham et al. 2002, Crnokrak and Roff 1999, Laikre et al. 1996). The additive effects of these interrelated factors, perceived as an inward spiral or vortex (Gilpin and Soule 1986), have become a cornerstone of conservation biology.

Varied threats to populations are known to result from the loss of genetic variation (Lacy 1997, Lande 1988). The loss of genetic diversity, especially in small and isolated populations with low fecundity (e.g. panthers), is theorized to have the ability to result in extinctions via several intertwined pathways (e.g. the loss of evolutionary potential, epidemiological correlates with diversity in the major histocompatibility complex; Frankham et al. 2002). The complex interplay of social, demographic, genetic, and health factors dictated that a timely and aggressive program be implemented to address the multitude of problems faced by Florida panthers by the early 1990's. A plan for genetic restoration and management of the Florida panther was developed in September 1994 (Seal 1994) and implemented in 1995 with the release of 8 female Texas puma, none of which remain in the wild today. Five of the 8 Texas puma produced litters and a minimum of 20 kittens were born in Florida (Land et al. 2004).

Assessment of the genetic restoration project is an ongoing objective of FWC and our collaborators at BCNP, ENP and the National Cancer Institute (NCI). Introgression should theoretically alleviate the potential threats associated with inbreeding depression and loss of genetic variation. Regardless of the results, knowledge gained from this attempt at genetic introgression will undoubtedly have ramifications on the implementation of future management strategies for panthers and potentially far reaching implications to varied large carnivore conservation projects.

FWC's current research objectives include, but are not limited to: assessments of adult and kitten survival, collection of resource selection data via GPS technology, denning habitat characteristics, movement patterns of panthers along the urban-wildlife interface, vaccinating free-ranging panthers against the feline leukemia virus (FeLV), evaluating the utility of new GPS collar technology, and compilation of female reproductive histories. Our research goal is to complement historical data sets with

ongoing, objective driven research. The melding of information on demographics, genetics, biomedical, and land management challenges should ultimately assist in the development of effective management plans to promote the long-term survival of the Florida panther in south Florida.

## **Acknowledgements**

FWC's panther research and management activities are funded primarily by the Florida Panther Research and Management Trust Fund (FPRMTF). This trust fund is supported principally by the sale of Florida panther license plates. The FWC panther research and management group would like to thank the citizens of Florida that continue to support our efforts to conserve and manage panthers via contributions to this fund. Specifics concerning the current financial status of the FPRMTF can be found at the end of this annual report.

We would like to acknowledge the following individuals and agencies for their assistance provided to this project. Roy McBride, Rocky McBride, Rowdy McBride, and Cougar McBride (Livestock Protection Company), Mario Alvarado, Sonny Bass, Emmett Blankenship, Helen Fitting, Deborah Jansen, Annette Johnson, Ian Lundgren, Lori Oberhofer, and Steve Schulze (National Park Service) provided assistance with aerial telemetry and/or field support. BCNP staff, led by Deborah Jansen, have been capturing panthers and handling neonate kittens at dens in the BCNP south of I-75 since 2003. Summary tables in this report contain information from their capture work. We would also like to extend our appreciation to the staffs at BCNP, ENP, Florida Panther National Wildlife Refuge (FPNWR), Fakahatchee Strand State Preserve (FSSP), Picayune Strand State Forest (PSSF), Okaloacoochee Slough State Forest (OSSF), and the Big Cypress Seminole Indian Reservation (BCSIR) for their continued cooperation and support of our research and management efforts.

## **Study Area**

The study area encompassed most of interior southern Florida south of Orlando and extending to southern ENP. The area includes large blocks of low-lying public lands such as ENP, BCNP, FSSP, and

the FPNWR. Significant private lands, primarily used for cattle and crop production, lie on higher and more productive ground to the north of public lands and constitute some of the most important habitat for Florida panthers. The overall study area was divided into 3 agency monitoring areas (AMA) for purposes of conducting aerial relocations and capture/recovery efforts. The FWC AMA was statewide excluding BCNP south of I-75 and ENP. The BCNP AMA encompassed the area within the BCNP boundary south of I-75. The ENP AMA encompassed the area within the ENP boundary.

## **Methods**

### ***Monitoring***

FWC staff was responsible for capturing and fitting panthers with radio-collars, handling neonates at dens, and recovering carcasses from the field and roadside within the FWC and ENP AMA and obtaining aerial relocations 3 times per week within the FWC AMA. BCNP staff was responsible for these same activities within the BCNP AMA. ENP staff was responsible for obtaining aerial relocations 3 times per week within the ENP AMA. Responsibility of conducting aerial relocations is coordinated on those panthers whose home ranges overlap AMA's.

### ***Capture***

Free-ranging Florida panthers were captured using trained hounds. Panthers either bayed on the ground or were treed, and then darted with a 3 ml compressed-air dart fired from a CO<sub>2</sub>-powered rifle. Panthers were immobilized with a combination of ketamine HCl (10 mg/kg; Congaree Veterinary Pharmacy, Cayce, South Carolina) and, xylazine HCl (1 mg/kg; Congaree Veterinary Pharmacy). Following immobilization, treed panthers were lowered to the ground by a rope or caught with a net as they fell; in some cases, a portable cushion (McCown, 1990) was used to further mitigate the impact of a fall. Propofol (PropoFlo™, Abbott Laboratories, Abbott Park, Illinois) was administered intravenously (IV) either as a bolus or continuous drip to maintain anesthesia. Butorphanol tartrate (0.1-0.4 mg/kg; Fort Dodge Animal Health [FDAH], Overland Park, Kansas) or midazolam HCl (0.03 mg/kg) was administered intramuscularly (IM) to smooth recovery in some panthers. Panthers were left to recover in

a shaded area away from water. In some cases xylazine HCl was reversed with yohimbine HCl (Yobine®), Lloyd Inc., Shenandoah, Iowa) at ¼ its recommended dose.

### ***Physical Examination***

Vital signs (temperature, heart rate, respiration rate, and capillary refill time) and depth of anesthesia were monitored and recorded. A sterile petrolatum ophthalmic ointment (Puralube®, Pharmaderm, Melville, New York) was applied to the eyes for lubrication. All animals underwent a physical examination to assess general health and physical condition. For each panther handled, the skin over the medial saphenous vein was clipped, prepped, and an IV catheter (Abbocath®-T, Abbott Ireland, Sligo, Republic of Ireland) aseptically placed. Sterile isotonic fluids were administered either subcutaneously (SQ) or IV.

### ***Live-capture Sample Collection***

Approximately 70-140 ml of blood (depending on body weight) was collected from the medial saphenous or cephalic veins using a butterfly catheter (19 or 21 ga), luer adapter/hub, and Vacutainer® tubes (approximately 50 ml in serum separator, 40 ml in EDTA, 9 ml in Na Heparin, and 9 ml in ACD tubes; Becton Dickinson, Franklin Lakes, New Jersey). From uncollared panthers, eight skin biopsies (4 mm) were aseptically collected from the medial aspect of the hindlimbs and saved in biopsy transport media. Defects were closed with surgical glue (Vetbond™, 3M Animal Care Products, St. Paul, Minnesota). Hair was clipped from blood collection and biopsy sites, and pulled hair were saved in sample collection bags; clipped hair was also saved from the ventral abdomen. Other samples, such as bacterial cultures, skin scrapings, and diagnostic biopsies were taken if indicated. Blood smears were made in the field from fresh whole blood. Panthers were implanted with a SQ transponder identification chip (Trovan®, Douglas, United Kingdom), ear-tattooed, measured, and weighed.

### ***Vaccination and Treatment***

Panthers >6 months old were vaccinated SQ against feline viral rhinotracheitis (FVR), feline calicivirus (FCV), feline panleukopenia (FPV) (Fel-O-Vax® PCT [FDAH], 1 ml, lower left leg), and

rabies (Rabvac<sup>TM</sup> 3 [FDAH], 1 ml, lower right leg). Free-ranging panthers were also vaccinated against feline leukemia virus (FeLV, Fel-O-Vax® Lv-K [FDAH] or Fevaxyn® FeLV, Schering-Plough Animal Health Corporation, Omaha, Nebraska, USA, 2 ml, lower left leg). Captured panthers were dewormed with ivermectin (0.1 mg/kg, Ivomec®, Merial Limited, Iselin, New Jersey) and praziquantel (3.75 mg/kg, CestaJect<sup>TM</sup>, Phoenix Pharmaceutical, Inc., St. Joseph, Missouri) administered SQ in the lateral aspect of thigh. Penicillin G procaine/benzathine (USVet®, Hanford Pharmaceuticals, Syracuse, New York) was administered IM at 22,000 to 44,000 U/kg.

### ***Neonatal Kittens***

Neonatal kittens <6 weeks-of-age were handled according to Land et al. (1998) and marked with a SQ transponder identification chip. Pyrantel pamoate (0.1 mg/lb, Anthelban V; Phoenix Pharmaceutical, Inc., St. Joseph, Missouri) was administered orally, and blood was collected from the jugular vein for CBC and serum chemistry if indicated. Three skin biopsies (2 mm) were aseptically collected from the inner medial aspect of the hind limbs and saved in biopsy transport media.

### ***Radio-instrumentation***

Captured adult and juvenile panthers were fitted with a VHF (Advanced Telemetry Solutions, Inc., Isanti, Minnesota) or VHF/GPS (Advanced Telemetry Solutions Inc., Isanti, Minnesota; Lotek Wireless, New Market, Ontario, Canada; Telonics, Mesa, Arizona; TVP Positioning AB, Lindesberg, Sweden) radio-collar and monitored three times weekly (M, W, F) from a Cessna 172 fixed-wing aircraft. Locations collected by FWC were plotted on 7.5-minute USGS topographic maps and recorded as Universal Transverse Mercator points in North American Datum 27. Mating and denning behavior, aggressive encounters among panthers, movements and home range shifts, dispersal, survival, recruitment, displacements and replacements of individuals, and other social and ecological interactions were interpreted from radiotelemetry data, field investigations, genetics analyses, or a combination of these data sets.

## ***Necropsy***

All Florida panthers found dead due to infectious disease or unknown causes were completely necropsied by board-certified pathologists at the Veterinary Medical Teaching Hospital ([VMTH] University of Florida, College of Veterinary Medicine, Gainesville, Florida) or Disney's Animal Kingdom (Celebration, Florida). Panthers dying of known trauma were necropsied by the FWC veterinarian at the Wildlife Research Laboratory (FWC, Gainesville, Florida).

When carcass condition allowed, tissues samples were collected at necropsy from all major organs. Fluids collected included heart blood, venous blood, thoracic blood, aqueous humor, and urine. Blood samples were centrifuged at 2000 rpm for 10 minutes and the supernatant decanted. Representative tissues from fresh (unfrozen) and some previously frozen panthers were placed in 10% neutral buffered formalin. Fixed tissues were embedded in paraffin, sectioned at 5 to 6  $\mu\text{m}$ , and stained with hematoxylin and eosin. All tissues from live-captured and necropsied panthers not immediately analyzed were archived at  $-20^{\circ}$  to  $-70^{\circ}\text{C}$ .

## ***Diagnostics***

Whole blood in EDTA, serum, and diagnostic samples were shipped overnight to Antech Diagnostics (Farmingdale, New York) for a complete blood count (CBC), serum chemistry profile, and appropriate diagnostic procedures (culture, histopathology). Blood smears were examined at the VMTH for hemoparasites, white blood cell differential, and red blood cell morphology. Skin biopsies were shipped overnight to the Laboratory of Viral Carcinogenesis (National Cancer Institute [NCI], Frederick, Maryland) for tissue culture and genetic analyses (O'Brien et al. 1990).

Reciprocal antibody titers and/or presence of antigen in serum were determined for feline leukemia virus (FeLV, ELISA antigen), feline immunodeficiency virus/puma lentivirus (FIV/PLV; Western Blot, Kinetics ELISA, and peptide ELISA), feline rhinotracheitis virus (FVR, serum neutralization [SN]), feline calicivirus (FCV, SN), canine distemper virus (CDV, SN), and feline panleukopenia virus (FPL, SN) at the New York State Diagnostic Laboratory (Cornell University, Ithaca, New York). EDTA whole blood from panthers was tested for FeLV and FIV in the field using a rapid

immunoassay (SNAP Combo, IDEXX Laboratories, Westbrook, Maine). Panthers were also tested for FeLV at necropsy using thoracic, venous, or heart blood. Reciprocal serum antibody titers to FeLV were performed at Hansen Veterinary Immunology (Dixon, California). Necropsied panthers were tested for rabies by IFA at the Jacksonville Central Laboratory (Jacksonville, Florida). Viral isolation and real-time and conventional PCR for canine distemper virus, pseudorabies virus, Flaviviruses, and Alphaviruses was performed at the Southeastern Cooperative Wildlife Disease Study (Athens, Georgia) on brain, heart, and other tissues collected from panthers dying of unknown causes.

Hair and heparinized whole blood were analyzed for methyl mercury (Hg) concentration at the Florida Department of Environmental Protection (Tallahassee, Florida) by cold vapor atomic absorption spectrophotometry (Hatch and Ott, 1968).

## **Results and Discussion**

### ***2005-2006 Panther Capture Season***

#### **Radio-collared Panthers**

Telemetry data were collected on 42 radio-collared Florida panthers in southern Florida during the reporting period by FWC, BCNP, and ENP (Figure 1). Seven new panthers and 1 recapture with a failed collar were added to the radio-collared population monitored by FWC during the 2005-2006 capture season. Radio contact was lost with FP75 (4/6/2006) and FP128 (6/2/2006) due to collar battery failure and the initiation of a timed release mechanism, respectively. Minimum convex polygon home ranges and movements of dispersing panthers monitored by FWC are depicted in Figures 2-5. A complete historical compilation of data associated with panthers radio-collared since 1981 can be found in Appendix I.

#### **Capture Results**

Our capture efforts commenced on 14 November 2005 and continued through 24 March 2006. Seventy hunt days were divided between the FPNWR (2 days), BCNP Addition Lands Unit (26 days), BCSIR (16 days), ENP (12 days), and PSSF (14 days). Thirteen Florida panthers (FP) were captured by

FWC staff (Table 1). Seven previously uncollared panthers (FP140, FP141, FP142, FP143, FP144, FP146, and FP148) were added to the study population. One panther with a failed radio-collar was recaptured and subsequently refitted with a new GPS collar (FP121). Radio-collars were replaced on five panthers (FP94, FP95, FP100, FP131, and FP135) because data from these specific panthers will help achieve multiple research objectives.

We achieved the following objectives during our capture work in 2005-2006: 1) deployed GPS collars across a large part of the range of panthers to collect locational data throughout the diel period in order to comprehensively assess resource selection by panthers; 2) captured 2 panthers abutting the urban-wildlife interface along the western edge of their range (e.g. PSSF and Belle Meade); 3) continued to vaccinate panthers for FeLV, and 4) evaluated different GPS collar technology.

### **Biomedical Summaries of Florida Panthers Handled in 2005-2006**

Capture-related injuries this capture season were limited to minor dog-bite wounds suffered by FP148 and a minor laceration suffered by FP94 during capture. These wounds were treated in the field and resulted in no known complications. One panther, FP104, was captured and removed from the field by the BCNP capture team after it was found recumbent and unresponsive. The panther was transferred to FWC for transport to the UF-CVM, but subsequently died of respiratory failure en route. The immediate cause of death was septicemia and pneumonia due to *Pseudomonas aeruginosa* and *Proteus* spp. A predisposing cause for this opportunistic bacterial infection was not found.

All panthers captured by FWC for radio-instrumentation were in fair to excellent condition and no panthers tested positive for feline leukemia virus. Mercury, polychlorinated biphenyl, and organochlorine concentrations continued to be determined for live-captured and/or necropsied Florida panthers.

### **Captive Florida Panthers**

One male Florida panther (FP79) was taken into captivity during the current reporting period following repeated depredations on domestic animals. The panther was captured in Copeland by a joint

BCNP and FWC capture team on 16 February 2006. The panther was held at the Wildlife Research Laboratory (Gainesville) and underwent electroejaculation before being relocated to Busch Gardens (Tampa). Other panthers in captivity include: FP60 (12 year-old male) and FP204 (16 year-old female) at White Oak Conservation Center; K180 and K181 (1.5 year-old female siblings) and FP210 (16 year-old male) at Jacksonville Zoo; and FP207 (14 year-old male) and FP208 (14 year-old female) at Lowry Park Zoo.

## **Reproduction**

We handled 18 kittens (11 males, 7 females) from 6 females at 6 dens from 1 July 2005- 30 June 2006 (Table 2). Mean litter size for these dens was 3.0 (SE = 0.37,  $n = 6$ , range = 2- 4). A historical compilation of data collected by FWC, BCNP and ENP on Florida panther and introduced Texas puma kittens handled at dens (1992-2006) and known dens of radio-collared females (1985-2006) can be found in Appendix II and III, respectively.

## **Florida Panther Mortality**

A total of 17 free-ranging Florida panther (4 radio-collared, 13 uncollared) mortalities were recorded between 1 July 2005 and 30 June 2006 (Table 3). Vehicular collision accounted for 10 (uncollared  $n = 9$ , collared  $n = 1$ ) free-ranging panther deaths. Three of the uncollared mortalities (2♂, 1♀) were identified by transponder chips as having been previously handled as neonates. One uncollared panther (K49) died on SR29 within a fenced portion of the highway (approximately 100 m north of the end of the fencing). Intraspecific aggression accounted for 2 mortalities among uncollared panthers and 1 radio-collared panther mortality. Four mortalities were due to unknown causes. A historical compilation of all recorded panther mortalities since 1972 can be found in Appendix IV.

## **Human-Panther Interactions**

Human-panther interactions have increased over the last several years due to a combination of an increase in the human population, development into the urban-wildlife interface, and a coinciding increase in the Florida panther population. Since 2002, several human-panther interactions have occurred

in south Florida, including instances of depredation on livestock and pets. Dealing with human-panther interactions is a multi-agency (FWC, NPS, USFWS) effort and has led to the creation of a draft protocol entitled “*Guidelines for Living with Florida Panthers*” and the Interagency Florida Panther Response Plan. Herein, we report on several interactions that were investigated during the reporting period using the new protocols as guidance.

On 12 December 2005, FWC law enforcement officers (LE) investigated a complaint that a Florida panther had taken a Chihuahua from a residence on the west side of Immokalee. An FWC panther biologist and LE returned to the site the next morning and confirmed that the dog was taken by a male panther. The remains of the Chihuahua were discovered on a subsequent visit on 14 December. FWC issued a news release of the incident 16 December 2005. There were no other reported depredations in this area since 12 December 2005.

An 11-year-old male radio-collared panther, FP79, was removed from the wild and placed into permanent captivity after resident complaints and verification of repeated depredation events on domestic livestock within the BCNP boundary and FP79’s home range. On 9 February 2006, FP79 killed domestic livestock at a private campground south of US41 near Ochopee. Florida panther #79 was captured and relocated to the northern part of his home range, but returned to the vicinity of the campground 2 days later. On 16 February, FP79 killed a domestic pig in Copeland. Subsequently, the decision was made to capture and permanently remove this panther from the wild. Following the guidance in the draft response plan, FP79 was deemed a threat because of the change in his behavior as evidenced by his repeated depredation of domestic animals as prey. The cause of this change in behavior is unknown, but this male was 11 years old and other panthers in this age group typically begin to be affected by declining health and their ability to defend a home range. This panther was eventually placed into captivity at the Busch Gardens in Tampa and has adjusted well.

The final human-panther interaction during the reporting period occurred in March 2006. While turkey hunting on a private ranch in Hendry County on 8 March 2006, two hunters observed a family of 4 panthers comprised of a mother and 3 kittens. The area was an improved pasture interspersed with small

hardwood hammocks. The hunters were wearing camouflaged clothing and were apparently in the path the panthers were following from one hammock to another. While the adult female walked past the hunters unconcernedly, the kittens displayed more interest. One kitten was described as “aggressive” when it growled, but it subsequently retreated when one of the hunters distracted it by throwing a rock. Shortly thereafter, the kittens followed their mother into an adjacent hammock. FWC's panther houndsman visited the site and confirmed the story. Once the excitement of the encounter had passed, the hunting guide realized that the panthers posed no threat and no further actions by FWC were warranted.

## **Genetics**

Assessment of the genetic introgression experiment that was initiated in 1995 with the release of 8 female Texas pumas is ongoing via a collaborative relationship with Dr. Steve O'Brien, Dr. Warren Johnson, and Dr. Melody Roelke at NCI in Frederick, Maryland. DNA from tissue samples collected from panthers captured during the 2005-2006 capture season has been extracted, amplified and will be incorporated into final analyses that will assess the effectiveness of genetic introgression in helping to conserve and restore vanishing populations of large carnivores.

Additionally, with the assistance of collaborators at NCI, our staff has been able to successfully complete species identification of non-invasively collected hair samples from purported road-kill incidents. In 2 cases, no carcasses were collected on scene. Instead, hair samples were collected from a vehicle bumper and an additional sample was collected from the unidentifiable decaying remains of a mammal located adjacent to the canal on SR29. A species identification test utilizing mitochondrial DNA sequencing verified that these samples were indeed from panthers. Additional analyses with microsatellites may permit for the individual identification of these samples to determine if these mortalities were panthers that had previously been handled by FWC, BCNP or ENP staff.

## Literature Cited

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**Table 1. Florida panther captures during the 2005-2006 Florida Fish and Wildlife Conservation Commission’s capture season (14 November 2005-24 March 2006). Ages were estimated at time of capture.**

<b>Panther ID</b>	<b>Sex</b>	<b>Capture date</b>	<b>Capture location<sup>a</sup></b>	<b>Age (yrs.)</b>	<b>Weight (lbs.)</b>	<b>Collar type – brand model</b>	<b>Capture comments</b>
FP140	F	14 Nov 2005	FPNWR	3.5	80	VHF - ATS	Initial radio-collaring
FP131	M	15 Nov 2005	FPNWR	7	130	GPS – Televilt Tellus	Radio-collar replacement with GPS unit
FP141	M	30 Nov 2005	BCSIR	3.5	130	VHF - ATS	Initial radio-collaring
FP95	F	07 Dec 2005	ENP	7.75	83	GPS – Telonics Argos	Radio-collar replacement with GPS unit
FP94	F	12 Dec 2005	ENP	6.5	79	GPS – Televilt Tellus	Radio-collar replacement with GPS unit
FP142	F	14 Dec 2005	ENP	2.5	70	GPS - Lotek	Initial radio-collaring
FP143	M	09 Jan 2006	BCSIR	1.5	101	GPS - Lotek	Initial radio-collaring
FP100	M	13 Jan 2006	BCNP	9	142	VHF - ATS	Radio-collar replacement
FP121	F	02 Feb 2006	BCSIR	4	110	GPS - ATS	Recaptured after previous collar failed
FP144	M	08 Feb 2006	BCNP	2	120	VHF - ATS	Initial radio-collaring
FP135	M	13 Feb 2006	FPNWR	2.8	124	GPS – Telonics	Radio-collar replacement with GPS unit
FP146	M	27 Feb 2006	PSSF	3	144	GPS – Telonics	Initial radio-collaring.
FP148	F	24 Mar 2006	PSSF	2.5	60	GPS - ATS	Initial radio-collaring.

<sup>a</sup> BCNP=Big Cypress National Preserve (units north of I-75); BCSIR=Big Cypress Seminole Indian Reservation; ENP=Everglades National Park; FPNWR=Florida Panther National Wildlife Refuge; PSSF=Picayune Strand State Forest/Wildlife Management Area.

**Table 2. Neonate kittens handled at Florida panther dens by the Florida Fish and Wildlife Conservation Commission 1 July 2005 – 30 June 2006.**

<b>Dam ID</b>	<b>Kitten ID</b>	<b>Sex</b>	<b>Location<sup>a</sup></b>	<b>Date handled</b>	<b>Estimated age</b>	<b>Weight (g)</b>	<b>Kinked tail</b>
FP 128	190	M	BCSIR	7/21/2005	21 days	1630	Yes
	191	M	BCSIR	7/21/2005	21 days	1150	No
FP75	192	M	BCNP-BI	8/7/2005	7 days	460	Yes
	193	F	BCNP-BI	8/7/2005	7days	580	Yes
	194	F	BCNP-BI	8/7/2005	7 days	510	No
FP110	195	M	BCNP-BI	8/7/2005	7 days	555	Yes
	196	M	OSSF	11/1/2005	21 days	1400	No
	197	M	OSSF	11/1/2005	21 days	1120	No
FP107	198	M	OSSF	11/1/2005	21 days	1120	No
	199	F	OSSF	11/1/2005	21 days	1089	No
	200	F	FPNWR	2/17/2006	7 days	700	No
FP121	201	M	FPNWR	2/17/2006	7days	675	Yes
	202	F	BCSIR	3/5/2006	14 days	1350	No
	203	M	BCSIR	3/5/2006	14 days	1350	No
FP94	204	M	BCSIR	3/5/2006	14 days	1100	No
	205	F	ENP	6/22/2006	18 days	950	No
	206	M	ENP	6/22/2006	18 days	960	No
	207	F	ENP	6/22/2006	18 days	925	No

<sup>a</sup> BCNP-BI = Big Cypress National Preserve Bear Island Unit; BCSIR = Big Cypress Seminole Indian Reservation; ENP = Everglades National Park; FPNWR = Florida Panther National Wildlife Refuge; OSSF = Okaloacoochee Slough State Forest.

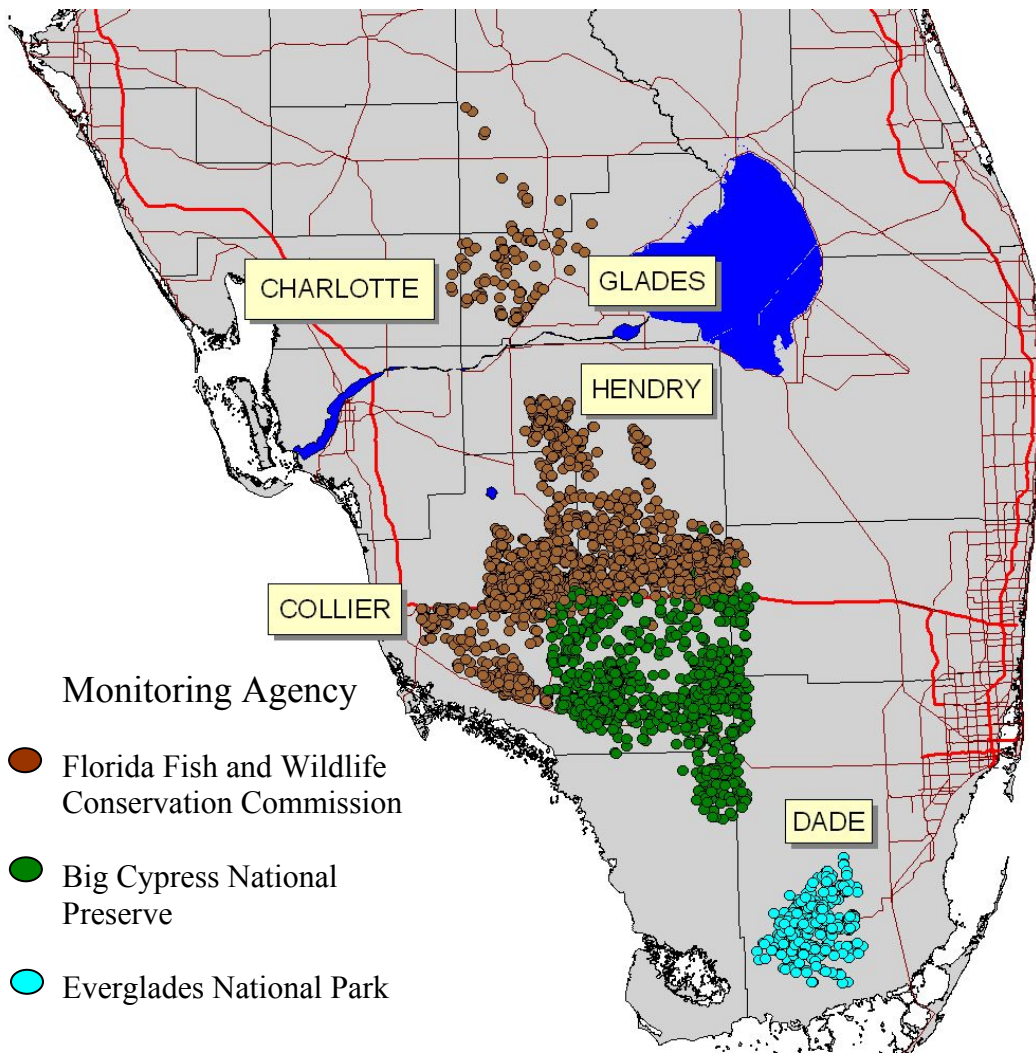
**Table 3. Verified Florida panther mortalities recorded between 1 July 2005 and 30 June 2006. Data collected by FWC and BCNP staff. Causes of death include hit-by-car (HBC), intraspecific aggression (ISA), and unknown (UNK). The presence of atrial septal defects (ASD) and other biomedical and morphometric data are also noted. Ages are estimated. Some characteristics were not determined (nd).**

Panther ID	Sex	Date killed	Cause	Location <sup>a</sup>	Age (yr)	Weight (lbs.)	Kinked tail	Cowlick	ASD	Splenic cleft	Testes	Rabies IFA <sup>b</sup>	Significant necropsy results
K49	F	01-Dec-05	HBC	SR 29; Collier Co.	8	70	no	no	no	yes		u	Killed inside fencing. Positively identified via transponder chip.
K153	M	29-Aug-05	HBC	CR 951; Collier Co.	2	125	yes	no	no	yes	2	nt	Testes shipped to White Oak. Skull crushed- rabies IFA not possible. Transponder chip identified.
FP69	F	13-Sep-05	UNK	BCNP-Addition Lands; Collier Co.	8	65	yes	yes	no	nd		nt	Severe swelling in right front paw – possible snakebite or other injury. Too autolyzed for confirmation. Septicemia, underlying causes unknown.
FP70	F	14-Jan-06	HBC	US41, 100m E of Turner River; Collier Co.	9	101	no	no	no	yes		n	4 fetuses present (2-3 weeks along) – was with FP 79 on 12/20.
FP104	M	09-Mar-06	UNK	BCNP-Loop Road Unit; Collier Co.	5.5	110	no	no	no	yes	2	n	Found moribund with moderate to severe muscle wasting. Necropsy indicated a bacterial pneumonia and septicemia. A predisposing cause was not found.
FP129	F	21-Mar-06	ISA	BCNP-Raccoon Point; Collier Co.	6	72	no	no	yes	nd		u	A 3mm atrial septal defect was found.
UCFP76	M	18-Sep-05	HBC	US 41; Collier Co.	1	94	yes	yes	no	yes	2	n	Testes analyzed at White Oak. No chip or projectile fragments seen on fluoroscopy.
UCFP77	F	14-Jan-06	ISA	BCSIR; Hendry Co.	2.5	nd	no	no	no	nd		nt	Puncture wounds and lacerations were consistent with ISA. Radiographs of head, neck, and spine were negative. No chip found.
UCFP78	M	25-Jan-06	HBC	CR 846; Collier Co.	0.75	52	yes	no	no	yes	2	n	Complete cleft-extends across entire spleen. No chip found.
UCFP79	F	25-Jan-06	HBC	CR 846; Collier Co.	2	76	no	no	no	yes		n	Complete cleft. No chip found.

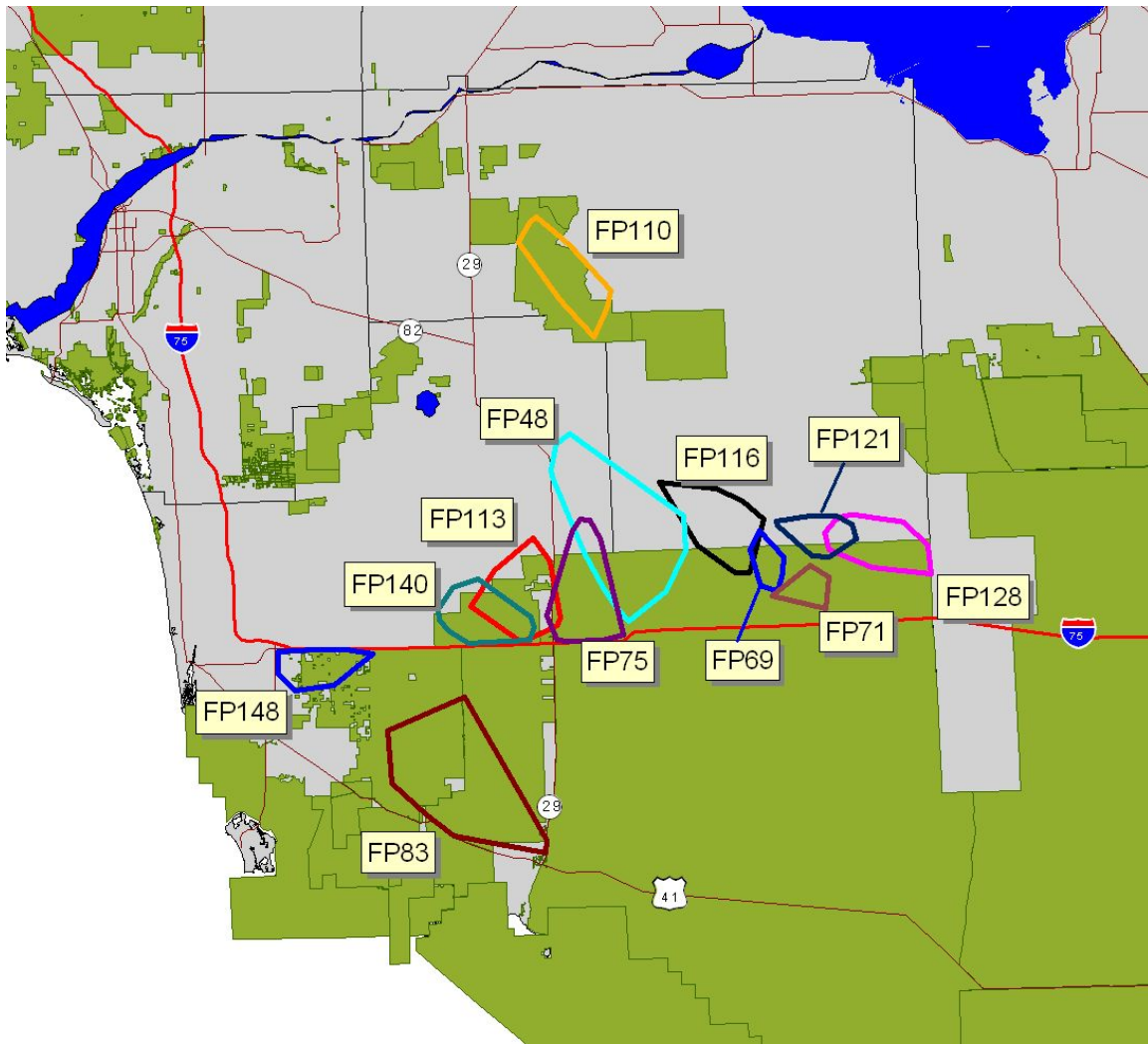
Panther ID	Sex	Date killed	Cause	Location <sup>a</sup>	Age (yr)	Weight (lbs.)	Kinked tail	Cowlick	ASD	Splenic cleft	Testes	Rabies IFA <sup>b</sup>	Significant necropsy results
UCFP80	F	02-Feb-06	HBC	Card Sound Rd; Miami/Dade Co.	1.5	64	no	no	no	no		n	Prescapular lymph nodes enlarged. No chip found.
UCFP81	M	27-Feb-06	HBC	I-75; Lee Co.	2	nd	no	no	nd	yes	2	nt	Scanned for chip and skinned back – no chip found.
UCFP82	U	Jan/Feb-06	UNK	Private property; Lee Co.	-	-	-	-	-	-	-	-	Skeletal remains only. No fractures observed.
UCFP83	M	11-Mar-06	ISA	North Flint Pen Strand; Lee Co.	4	nd	no	no	nd	nd	2	nt	Nasal bones crushed with numerous punctures wounds/scratches on face and legs.
K203	M	06-Apr-06	UNK	BCSIR	0.08	nd	no	nd	nd	nd	nd	nt	Scattered remains of kitten found upon revisiting den site. ID verified by relocating chip in den.
UCFP84	M	13-Apr-06	HBC	I-4; Osceola Co.	3.5	122	no	no	nd	nd	2	nt	No chip found.
UCFP85	M	05-Jun-06	HBC	CR 832; Hendry Co.	3.5	151	no	no	no	nd	2	n	Numerous <i>Dirofilaria striata</i> (adults SQ, and circulating microfilaria). Skinned– no chip found.

<sup>a</sup>BCNP = Big Cypress National Preserve; BCSIR = Big Cypress Seminole Indian Reservation; FPNWR = Florida Panther National Wildlife Refuge; OSSF = Okaloacoochee Slough State Forest; Private = Private land.

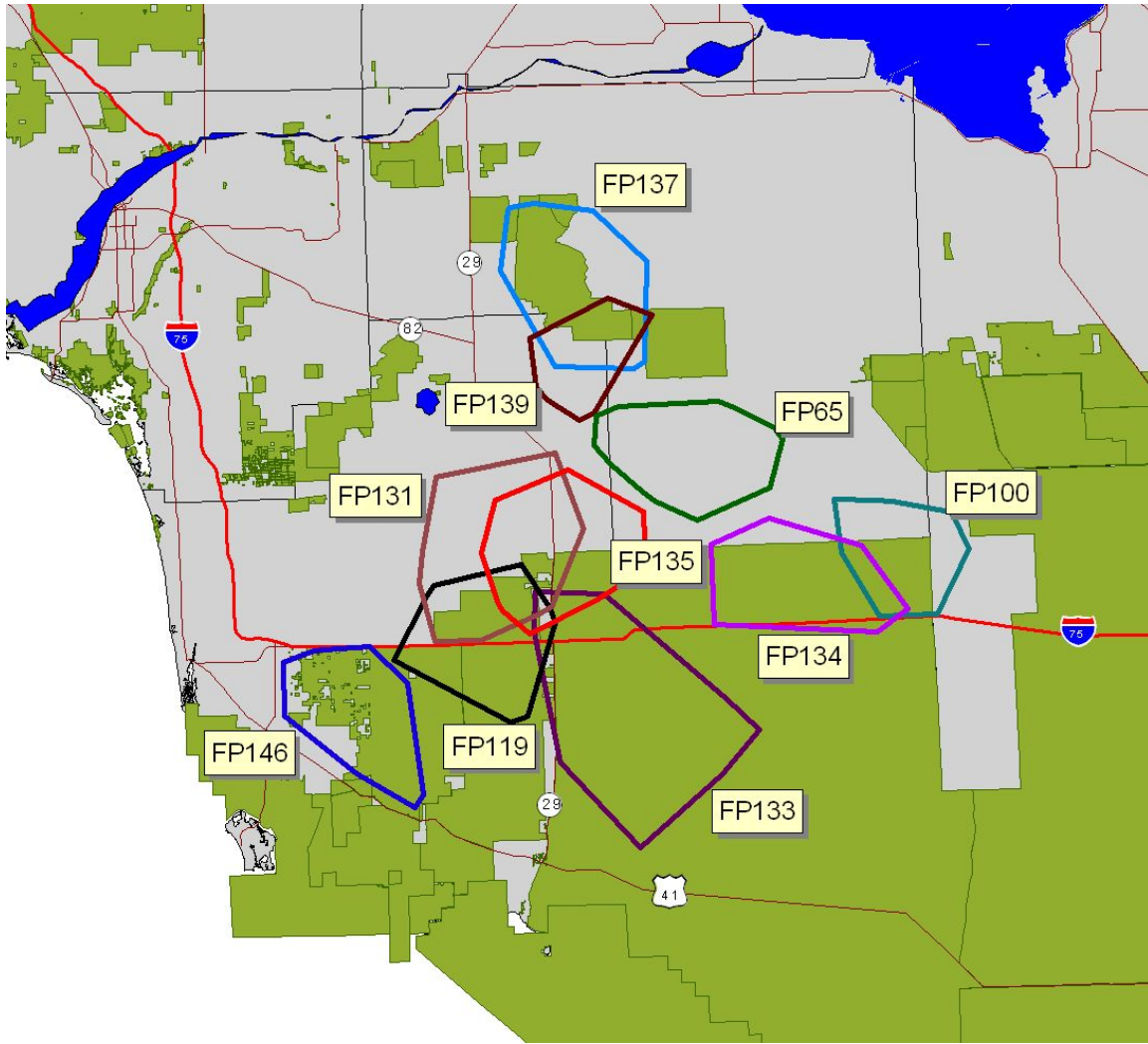
<sup>b</sup> IFA= immunofluorescent antibody test; u = tested but tissue condition was unsatisfactory for definitive diagnosis, nt = not tested, n = negative



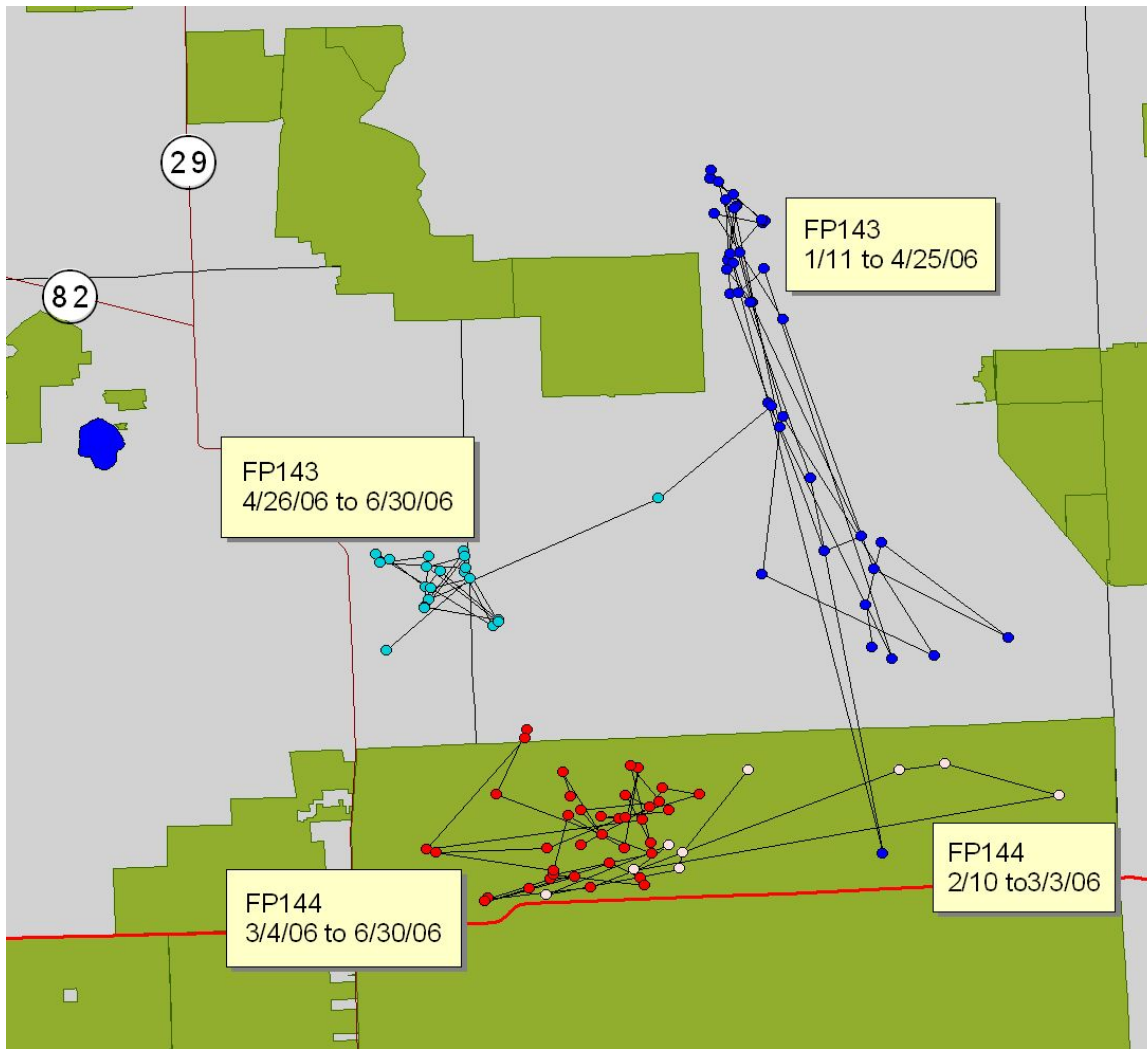
**Figure 1. Locations of all radio-collared Florida panthers in southern Florida from 1 July 2005 to 30 June 2006.**



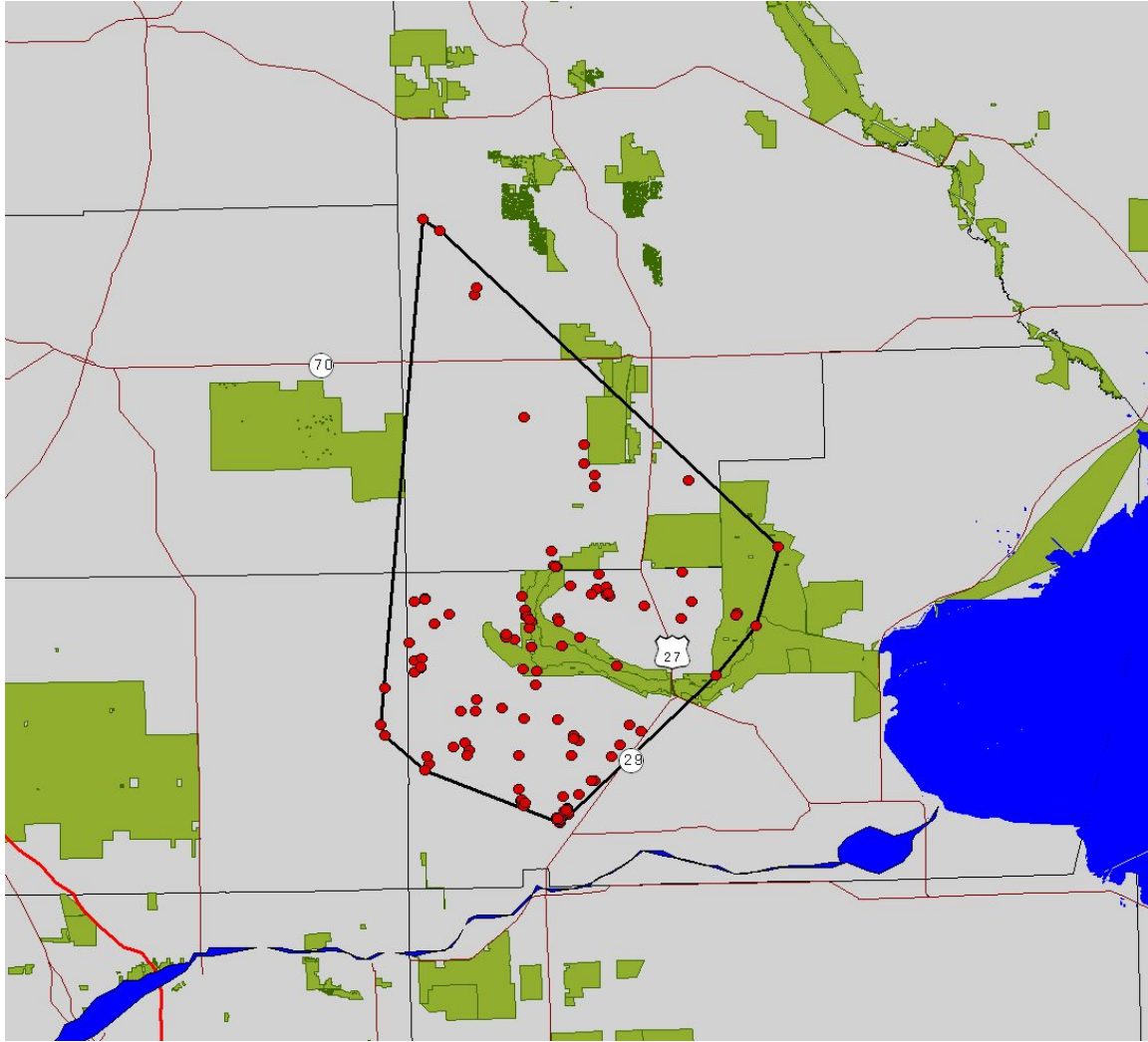
**Figure 2. Depiction of the 100% minimum convex polygon home ranges for adult female Florida panthers from 1 July 2005 to 30 June 2006.**



**Figure 3. Depiction of the 100% minimum convex polygon home ranges for adult male Florida panthers from 1 July 2005 to 30 June 2006.**



**Figure 4. Natal range and dispersal of male Florida panthers FP144 and FP143 from 11 January to 30 June 2006.**



**Figure 5. Radiotelemetry locations and 100% minimum convex polygon home range for adult male Florida panther FP130. This animal is currently the only panther being actively monitored by FWC north of the Caloosahatchee River.**

**Appendix I. List of radio-instrumented Florida panthers and Texas pumas in southern Florida from 10 February 1981 to 30 June 2006.**

**Data includes panthers captured by FWC and BCNP staff.**

Panther ID <sup>a</sup>	Sex	Capture date	Estimated age at first capture	Birth date	Dam	Purported sire	Use area <sup>b</sup>	Death date	Cause of death
FP01	M	10 Feb 1981	10	-	-	-	Fakahatchee	14 Dec 1983	Vehicle (SR 84 mm 18)
FP02	M	20 Feb 1981	10	-	-	-	Fakahatchee	27 Nov 1984	Intraspecific aggression
FP03	F	23 Jan 1982	9	-	-	-	Fakahatchee	17 Jan 1983	Capture
FP04	M	27 Jan 1982	7-8	-	-	-	Fakahatchee	18 Apr 1985	Vehicle (SR 84 mm17)
FP05	F	23 Feb 1982	7-8	-	-	-	FPNWR	23 Nov 1982	Unknown
FP06	M	27 Feb 1982	6-8	-	-	-	Raccoon Pt. (North Swamp)	16 Apr 1982	Unknown
FP07	M	02 Mar 1982	6-7	-	-	-	Raccoon Pt.- Fakahatchee	26 Oct 1985	Vehicle (SR 29 C. prison)
FP08	F	25 Mar 1984	9-10	-	-	-	Fakahatchee	20 Aug 1988	Liver failure, old age
FP09	F	26 Jan 1985	3-4	-	-	-	Fakahatchee	-	-
FP10	M	15 Jan 1986	5 mo.	Aug 1985	FP09	-	GG Estates, Fakahatchee	27 Jan 1987	Intraspecific aggression
FP11	F	21 Jan 1986	4-5	-	-	-	Bear Island, Price's	25 Feb 2001	Intraspecific aggression
FP12	M	28 Jan 1986	5	-	-	-	Bear Is., FPNWR, FSSP	08 Nov 1994	Intraspecific aggression
FP13	M	27 Feb 1986	4-5	-	-	-	Bear Is. To Alico	14 Dec 1987	Vehicle (SR 29 Sunniland)
FP14	F	07 Dec 1986	5-6	-	-	-	Everglades	21 Jun 1991	Unknown
FP15	F	13 Dec 1986	5-6	-	-	-	Everglades	10 Jun 1988	Unknown
FP16	M	12 Jan 1987	12-14 mo.	-	FP14	-	Everglades to Stairsteps	3 Jan 2000	Unknown
FP17	M	20 Jan 1987	6-7	-	-	-	Gum Swamp to Nobles	20 Jul 1990	Unknown
FP18	F	22 Jan 1987	7-8	-	-	-	Gum Swamp, Scofields, BCSIR	01 Oct 1990	Intraspecific aggression
FP19	F	09 Feb 1987	9 mo.	May 1986	FP11	FP12	Bear Is., Prices, FPNWR	02 Dec 1997	Aortic aneurysm
FP20	M	10 Mar 1987	3-4	-	-	-	Alico to Bear Island	24 Aug 1988	Heart defect

<b>Panther ID<sup>a</sup></b>	<b>Sex</b>	<b>Capture date</b>	<b>Estimated age at first capture</b>	<b>Birth date</b>	<b>Dam</b>	<b>Purported sire</b>	<b>Use area<sup>b</sup></b>	<b>Death date</b>	<b>Cause of death</b>
FP21	F	16 Mar 1987	12-14 mo.	-	FP14	-	Everglades/White Oak	26 Dec 1997	Euthanasia
FP22	F	18 Mar 1987	5-6 mo.	-	FP15	-	Everglades	20 Jul 1991	Infection
FP23	F	18 Mar 1987	5-6 mo.	-	FP15	-	ENP, SBCNP	25-26 Nov 2000	Unknown
FP24	M	30 Jan 1988	3-4	-	-	-	Highlands Co.	22 Aug 1988	Unknown
FP25	M	16 Feb 1988	4-5	-	-	-	FPNWR	26 Aug 1988	Intraspecific aggression
FP26	M	01 Mar 1988	5-6	-	-	-	BCSIR, NBCNP	08 Jul 1994	Intraspecific aggression
FP27	F	11 Apr 1988	2-3	-	-	-	Everglades	23 Jul 1989	Unknown
FP28	M	29 Nov 1988	1.5	-	-	-	Ft. Myers, Lake Hicpochee, Gum Swamp to Nobles	25 Sep 1992	Intraspecific aggression
FP29	M	03 Jan 1989	6.5 mo.	May 1988	FP11	FP20	Bear Island, Gum Swamp	27 May 1992	Pseudorabies
FP30	M	06 Jan 1989	9 mo.	Mar 1988	FP19	FP13	Bear Is., Prices, FPNWR, FSSP	29 Jan 1990	Intraspecific aggression
FP31	F	12 Jan 1989	7-9	-	-	-	FPNWR	03 Mar 1994	Vehicle (SR 29 Sunniland)
FP32	F	03 Feb 1989	2-2.5	-	-	-	FPNWR	12 Sep 2002	Unknown (old age?)
FP33	M	05 Mar 1989	1.5-2	-	-	-	Loop Rd. to Gum Swamp	23 Nov 1989	Rabies
FP34	M	08 Jan 1990	10 mo.	Mar 1989	FP31	FP12	FPNWR, BCSIR, Gum Swamp	15 Nov 1993	Esophageal puncture
FP35	M	15 Jan 1990	10 mo.	Mar 1989	FP31	FP12	Regency Farms	24 Jan 1990	Bacterial infection from capture
FP36	F	27 Jan 1990	4-5	-	-	-	Nobles	10 Oct 1998	Unknown natural causes
FP37	M	30 Jan 1990	3-4	-	-	-	FSSP, FPNWR, Bear Is.	26 Nov 1990	Vehicle (SR 29 Miles City)
FP38	F	08 Feb 1990	4.5	-	-	-	Raccoon Pt., Cons. Area 3a	04 Aug 1994	pleuritis in chest
FP39	M	19 Feb 1990	3-4	-	-	-	ENP	18 May 1990	Pyrothorax
FP40	F	26 Feb 1990	1.5-2	-	-	-	Nobles, Bear Island	01 Feb 1998	Intraspecific aggression
FP41	F	28 Feb 1990	1.5-2	-	-	-	Nobles, BCSIR	22 Sep 1990	Intraspecific aggression
FP42	M	06 Mar 1990	11 mo.	May 1989	FP14	FP16	Everglades, Raccoon Pt.	22 Jun 1995	Unknown
FP43	M	01 May 1990	9.5 mo.	Jul 1989	FP19	FP12	FPNWR, Nobles	31 Oct 1991	Intraspecific aggression

<b>Panther ID<sup>a</sup></b>	<b>Sex</b>	<b>Capture date</b>	<b>Estimated age at first capture</b>	<b>Birth date</b>	<b>Dam</b>	<b>Purported sire</b>	<b>Use area<sup>b</sup></b>	<b>Death date</b>	<b>Cause of death</b>
FP44	M	30 Apr 1991	6 mo.	Nov 1990	FP40	FP26	Bakers, Naples, ENP, SBCNP	06 Jul 1993	Intraspecific aggression
FP45	M	08 May 1991	6 mo.	Nov 1990	FP19	FP12	FPNWR, NBCNP, BCSIR	02 Aug 1998	Intraspecific aggression
FP46	M	30 Jan 1992	2-2.5	-	-	-	Bear Island, Gum Swamp, Okaloacoochee Slough	03 Feb 1999	Intraspecific aggression
FP47	M	21 Feb 1992	6 mo.	Jul 1991	FP11	FP12	Bear Island, Belle Meade, FSSP	19 Feb 1993	Intraspecific aggression
FP48	F	24 Feb 1992	4 mo.	Oct 1991	FP31	FP12	NBCNP	-	-
FP49	F	25 Feb 1992	2	-	-	-	NBCNP	03 Jan 2002	Intraspecific aggression
FP50	M	04 Mar 1992	8 mo.	May 1991	FP36	FP26	Nobles, Alico, Devils Garden	06 Dec 1993	Vehicle (CR 846 5 mi E of Immokalee)
FP51	M	26 Mar 1992	3	-	-	-	FSSP, FPNWR	17 Jul 1998	Vehicle (SR 29)
FP52	F	05 May 1992	6 mo.	Oct 1991	FP31	FP12	FPNWR, Sadie Cypress	14 Jan 1995	vehicle (CR 846 & Dupree Rd)
FP53	M	10 Feb 1993	10 mo.	Apr 1992	FP19	FP12	FPNWR	26 Feb 1993	Intraspecific aggression
FP54	M	10 Feb 1993	10 mo.	Apr 1992	FP40	-	FSSP, FPNWR	-	-
FP55	F	25 Jan 1994	2 yrs.	Dec 1992	FP23	FP42	SBCNP	12 July 2004	Intraspecific aggression
FP56	F	03 Feb 1994	2-3	-	-	-	NBCNP	-	-
FP57	F	31 Jan 1995	3	-	-	-	FPNWR, FSSP	-	-
FP58	M	08 Feb 1995	8 mo.	Apr 1994	FP56	-	NBCNP, FPNWR, FSSP	30 Mar 1997	Intraspecific aggression
FP59	M	04 Jan 1996	6 mo.	Jun 1995	FP48	-	NBCNP.FPNWR, FSSP	22 Nov 2004	Intraspecific aggression
FP60	M	06 Mar 1996	5 mo.	Oct 1995	FP40	-	NBCNP, FSSP, FPNWR, Turner River	-	Removal from wild 6/29/2004
TX101	F	05 Apr 1995	-	-	-	-	BCSIR	29 Mar 2000	Unknown
TX102	F	05 Apr 1995	-	-	-	-	E. Hendry County	22 Sep 1995	Vehicle (CR833 5 mi. N BCSIR)
TX103	F	04 May 1995	-	-	-	-	SBCNP	19 Aug 1999	Complications from pregnancy
TX104	F	24 Mar 1995	-	-	-	-	Fakahatchee Strand, Belle Meade	18 Apr 1998	Gunshot
TX105	F	05 Jul 1995	-	-	-	-	ENP	-	Removed from wild 1/27/2003
TX106	F	09 Apr 1995	-	-	-	-	PSSF, FPNWR, FSSP	-	Removed from wild 1/8/2003

<b>Panther ID<sup>a</sup></b>	<b>Sex</b>	<b>Capture date</b>	<b>Estimated age at first capture</b>	<b>Birth date</b>	<b>Dam</b>	<b>Purported sire</b>	<b>Use area<sup>b</sup></b>	<b>Death date</b>	<b>Cause of death</b>
TX107	F	04 May 1995	-	-	-	-	SBCNP	18 Jan 2001	Pneumonia
TX108	F	26 Jul 1995	-	-	-	-	ENP	-	Removed from wild 11/18/2003
FP61	F	04 Mar 1997	8 mo.	Jul 1996	TX108	FP16	ENP	-	-
FP62	M	18 Mar 1997	6.5 mo.	Sep 1996	FP48	-	Catfish Creek, Polk Co.	-	-
FP63	M	13 Apr 1997	2	-	-	-	BCSIR, NBCNP, Private Lands	15 Jan 2000	Vehicular trauma / Drowning
FP64	M	24 May 1997	8 mo.	Sep 1996	FP48	-	Corkscrew Marsh	26 Mar 1999	Intraspecific aggression
FP65	M	19 Nov 1997	11 mo.	Dec 1996	TX101	FP45	Okaloacoochee Slough	-	-
FP66	F	09 Dec 1997	1	Dec 1996	TX101	FP45	Belle Meade, FPNWR, Private Lands	-	-
FP67	F	19 Jan 1998	8 mo.	Jun 1997	FP56	FP45	BCSIR, Private Lands	15 Jan 2003	Intraspecific aggression (FP65)
FP68	M	23 Jan 1998	4.5	-	-	-	NBCNP	01 Mar 2000	Unknown (likely intraspecific aggression )
FP69	F	05 Feb 1998	9 mo.	May 1997	FP40	FP45	NBCNP	14 Sept 2005	Septicemia
FP70	F	25 Feb 1998	10 mo.	May 1997	TX107	-	SBCNP	14 Jan 2006	Vehicular trauma
FP71	F	05 Mar 1998	10 mo.	May 1997	TX107	-	SBCNP	-	-
FP72	M	24 Apr 1998	2.5	-	-	-	BCSIR	23 Dec 1998	Intraspecific aggression
FP73	F	12 Nov 1998	3	Sep 1995	TX101	-	BCSIR	27 June 2003	Unknown
FP74	M	12 Nov 1998	1.5	-	FP73 <sub>F1</sub>	-	Fisheating Creek, Glades and Highlands Co.	08 Sep 1999	Vehicle (SR 27 north of Palmdale)
FP75	F	11 Jan 1999	7 mo.	Jun 1998	FP48	FP68	NBCNP	-	-
FP76	M	13 Jan 1999	22 mo.	-	-	-	FPNWR, SBCNP	13 Nov 1999	Intraspecific aggression (FP54)
FP77	F	22 Jan 1999	1.5-2	-	-	-	NBCNP, BCSIR	12 July 2003	Unknown
FP78	F	16 Feb 1999	2.0	-	-	-	FPNWR	17 Oct 2002	Intraspecific aggression
FP79	M	03 Mar 1999	3.5	Sep 1995	TX101	-	BCNP	-	Removal from wild 2/21/2006
FP80	F	14 Jan 2000	4.0	-	-	-	BCSIR	10 Feb 2000	Vehicle (BCSIR)
FP81	M	14 Jan 2000	4.0	-	-	-	BCSIR, Hendry Co. private lands	-	-

<b>Panther ID<sup>a</sup></b>	<b>Sex</b>	<b>Capture date</b>	<b>Estimated age at first capture</b>	<b>Birth date</b>	<b>Dam</b>	<b>Purported sire</b>	<b>Use area<sup>b</sup></b>	<b>Death date</b>	<b>Cause of death</b>
FP82	F	25 Jan 2000	3.0	-	-	-	Okaloacoochee Slough	9 May 2003	Intraspecific aggression suspected
FP83	F	08 Feb 2000	8 mo.	Jun 1999	TX106	FP54	FSSP	-	-
FP84	M	11 Feb 2000	1.0	-	FP73	-	Dispersed from BCSIR to Fisheating Creek	20 Apr 2000	Unknown
FP85	M	17 Feb 2000	10-11 mo.	Mar 1999	FP61	FP16	ENP	1 Mar 2004	Unknown
FP86	F	21 Feb 2000	8 mo.	Jun 1999	FP71	FP79	SBCNP	7 Nov 2003	Euthanasia
FP87	F	28 Feb 2000	10 mo.	Apr 1999	FP55	FP79	SBCNP	19 Jun 2003	Intraspecific aggression
FP88	F	02 Mar 2000	9 mo.	Jun 1999	FP70	FP79	SBCNP	-	-
FP89	M	02 Mar 2000	2.5	-	-	-	SBCNP	9 Nov 2000	Intraspecific aggression
FP90	M	08 Mar 2000	9 mo.	Jun 1999	FP71	FP79	SBCNP	26 April 2001	Vehicle (US27 Terrytown)
FP91	F	17 Mar 2000	9 mo.	Jun 1999	FP70	FP79	SBCNP	12 Dec 2003	Intraspecific aggression
FP92	M	06 Apr 2000	10 mo.	Jun 1999	FP70	FP79	SBCNP	Sep 2001	Unknown
FP93	F	10 Apr 2000	14 mo.	Feb 1999	TX107	FP79	SBCNP	-	-
FP94	F	01 May 2000	10 mo.	Jul 1999	TX105	FP16	ENP	-	-
FP95	F	07 Nov 2000	2.8 yrs.	Nov 1998	TX108	FP16	ENP	-	-
FP96	M	07 Jan 2001	9 mo.	Apr 2000	FP78	FP59	FPNWR	17 Jan 2002	Intraspecific aggression
FP97	M	19 Jan 2001	11 mo.	-	FP105	-	FPNWR	2 Dec 2001	Intraspecific aggression
FP98	M	25 Jan 2001	3	-	-	-	Bear Island, Hendry Co. private lands	1 July 2002	Vehicle (SR29 N of Pistol Pond)
FP99	M	26 Jan 2001	11 mo.	-	FP105	-	FPNWR	28 Nov 2002	Vehicle (CR846 Collier fairgrounds)
FP100	M	31 Jan 2001	4	-	-	-	NBCNP, BCSIR	-	-
FP101	F	5 Feb 2001	2	-	-	-	NBCNP, BCSIR	-	-
FP102	F	20 Feb 2001	3	Feb 1998	FP55	-	Turner River	-	-
FP103	F	13 Mar 2001	7 mo.	Aug 2000	FP102	-	BCNP-Sandy Road	-	-
FP104	M	2 Apr 2001	6-7 mo.	-	-	-	Turner River	9 Mar 2006	Septicemia

<b>Panther ID<sup>a</sup></b>	<b>Sex</b>	<b>Capture date</b>	<b>Estimated age at first capture</b>	<b>Birth date</b>	<b>Dam</b>	<b>Purported sire</b>	<b>Use area<sup>b</sup></b>	<b>Death date</b>	<b>Cause of death</b>
FP105	F	12 Apr 2001	6	-	-	-	FPNWR	1/15/2002	Unknown
FP106	F	12 Apr 2001	13 mo.	-	FP105	-	FPNWR	20 Feb 2003	Vehicle (SR29 Sunniland)
FP107	F	01 Nov 2001	19 mo.	Apr 2000	FP78	FP59	FPNWR	-	-
FP108	M	03 Nov 2001	11 mo.	Jan 2001	FP87	FP79	BCNP-N of Oasis	16 Nov 2002	Intraspecific aggression
FP109	M	10 Feb 2002	10+	-	-	-	OK Slough	~23 Feb 2003	Unknown
FP110	F	13 Feb 2002	13 mo.	Dec 2000	FP82	FP65	OK Slough	-	-
FP111	M	14 Feb 2002	10	-	-	-	OK Slough	4 Sep 2002	Intraspecific aggression
FP112	F	25 Feb 2002	3-4	-	-	-	Bear Island	11 Sep 2002	Intraspecific aggression
FP113	F	23 Oct 2002	6 mo.	Apr 2002	FP78	FP59	FPNWR, White Oak	-	-
FP114	M	23 Oct 2002	6 mo.	Apr 2002	FP78	FP59	FPNWR, White Oak	17 Oct 2003	Intraspecific aggression
FP115	F	26 Nov 2002	4-5	-	-	-	OK Slough	17 May 2003	Pneumonia (FeLV positive)
FP116	F	20 Jan 2003	7 mo.	Jun 2002	FP67	-	Hendry Co. private lands	-	-
FP117	M	25 Feb 2003	11 mo.	-	-	-	BCSIR Game Pen	28 Jul 2004	Unknown
FP118	F	5 Mar 2003	11 mo.	-	-	-	BCSIR Game Pen	3 Apr 2003	Unknown
FP119	M	2 Apr 2003	1	Apr 2002	FP93	FP79	BCNP/FPNWR	-	-
FP120	F	8 Apr 2003	3	-	-	-	BCNP – W Turner River Rd.	7 May 2005	Vehicle (US 41 Turner River)
FP121	F	2 Dec 2003	2.5	-	-	-	BCSIR	-	-
FP122	F	30 Jan 2004	2-2.5	-	-	-	OK Slough	13 Feb 2004	Pneumonia/feline leukemia
FP123	M	2 Feb 2004	3.5	-	-	-	OK Slough	15 Mar 2004	Intraspecific aggression
FP124	F	13 Feb 2004	3-4	-	-	-	Loop Road, BCNP	-	-
FP125	M	13 Feb 2004	8 mo.	-	FP124	-	Loop Road, BCNP	-	-
FP126	M	13 Feb 2004	8 mo.	-	FP124	-	Loop Road, BCNP, OK Slough	1 Jan 2005	Intraspecific aggression
FP127	M	16 Feb 2004	2	-	-	-	Turner River Rd., BCNP	-	-

<b>Panther ID<sup>a</sup></b>	<b>Sex</b>	<b>Capture date</b>	<b>Estimated age at first capture</b>	<b>Birth date</b>	<b>Dam</b>	<b>Purported sire</b>	<b>Use area<sup>b</sup></b>	<b>Death date</b>	<b>Cause of death</b>
FP128	F	18 Feb 2004	3.7	Jun 2000	FP77	-	BCSIR/Add Lands	-	-
FP129	F	20 Feb 2004	3	Jan 2001	FP87	FP79	Raccoon Point, BCNP	22 Mar 2006	Intraspecific aggression
FP130	M	4 Mar 2004	9.5 mo.	May 2003	FP110	-	OK Slough	-	-
FP131	M	10 Mar 2004	5	-	-	-	FPNWR	-	-
FP132	M	17 Mar 2004	3	-	-	-	OK Slough/Dinner Island	22 Jul 2004	Feline leukemia
FP133	M	18 Nov 2004	4.5	-	-	-	Bear Island, Deep Lake, Turner River	-	-
FP134	M	14 Dec 2004	2.5	-	-	-	Addition Lands	-	-
FP135	M	17 Dec 2004	1.7	Apr 2003	FP101	FP65	FPNWR/private lands	-	-
FP136	F	13 Jan 2005	3.5	-	-	-	BCNP	13 Jun 2005	Spinal fracture
FP137	M	25 Jan 2005	2.5	-	-	-	OK Slough/private lands	-	-
FP138	M	31 Jan 2005	4	-	-	-	BCNP/BCSIR	-	-
FP139	M	31 Mar 2005	2.9	May 2002	FP75	FP100	OK Slough/private lands	-	-
FP140	F	14 Nov 2005	3.5	-	-	-	FPNWR	-	-
FP141	M	30 Nov 2005	3.5	-	-	-	BCSIR, BCNP	-	-
FP142	F	14 Dec 2005	2.5	-	-	-	ENP	-	-
FP143	M	9 Jan 2006	1.5	-	-	-	BCSIR/private lands	-	-
FP144	M	8 Feb 2006	2	-	-	-	BCNP -Bear Island	-	-
FP145	F	16 Feb 2006	1.7	-	-	-	BCNP	-	-
FP146	M	27 Feb 2006	3	-	-	-	PSSF	-	-
FP147	M	3 Mar 2006	11 mos.	Mar 2005	FP129	-	BCNP/FSSP/PSSF	-	-
FP148	F	24 Mar 2006	2.5	-	-	-	PSSF	-	-

<sup>a</sup> FP denotes panthers captured for radio-collaring. TX denotes female Texas pumas released in 1995 as part of the genetic introgression project.

<sup>b</sup> BCNP=Big Cypress National Preserve; BCSIR = Big Cypress Seminole Indian Reservation; ENP = Everglades National Park; FPNWR = Florida Panther National Wildlife Refuge; FSSP = Fakahatchee Strand State Preserve; NBCNP = Big Cypress National Preserve north of Interstate 75; OSSF = Okaloacoochee Slough State Forest; PSSF = Picayune Strand State Forest/Wildlife Management Area; SBCNP = Big Cypress National Preserve south of Interstate 75.

**Appendix II. List of panther kittens handled at natal dens by FWC and BCNP staff from 7 April 1992 through 30 June 2006. Litters are sorted chronologically.**

<b>Kitten ID</b>	<b>Dam ID</b>	<b>Date marked</b>	<b>Sex</b>	<b>Transponder ID</b>	<b>Estimated age in days</b>	<b>Purported sire</b>	<b>Date collared</b>	<b>Eventual panther ID</b>
K01	FP40	4/7/1992	M	not marked	14-21	FP28	2/10/1993	FP54
K02	FP40	4/7/1992	M	not marked	14-21	FP28		
K03	FP40	6/18/1993	M	not marked	21	FP26		
K04	FP40	6/18/1993	F	not marked	21	FP26		
K05	FP40	6/18/1993	F	not marked	21	FP26		
K06	FP48	10/30/1993	M	not marked	8	FP12		
K07	FP48	10/30/1993	F	not marked	8	FP12		
K08	FP48	10/30/1993	F	not marked	8	FP12		
K09	FP56	4/21/1994	M	not marked	14	Unknown		
K10	FP56	4/21/1994	F	not marked	14	Unknown		
K11	FP56	4/21/1994	M	not marked	14	Unknown		
K12	FP19	5/17/1994	F	not marked	14-17	FP51		
K13	FP19	5/17/1994	F	not marked	14-17	FP51		
K14	FP55	4/8/1995	F	not marked	12	FP42		
K15	FP55	4/8/1995	F	not marked	12	FP42		
K16	FP48	6/20/1995	M	12A4640	12	Unknown	1/7/1996	FP59
K17	FP48	6/20/1995	F	129FE45	12	Unknown		
K18	TX101	10/10/1995	F	F82665	21	Unknown	11/12/1998	FP73
K19	TX101	10/10/1995	M	F79CB9	21	Unknown	3/3/1999	FP79
K20	FP56	10/31/1995	M	762141	14	FP45		
K21	FP56	10/31/1995	M	632448	14	FP45		
K22	FP56	10/31/1995	M	F6642F	14	FP45		
K23	TX106	12/1/1995	F	11DFD74	21	FP51		
K24	FP36	2/6/1996	F	12AB55F	14	FP45		
K25	FP36	2/6/1996	M	1147C9B	14	FP45		
K26	FP36	2/6/1996	M	11DF0DA	14	FP45		
K27	FP19	4/17/1996	F	114DAFE (11363DC)	24	FP54/FP51		
K28	FP19	4/17/1996	F	11EOD50	24	FP54/FP51		
K29	FP56	8/14/1996	F?	11EAB72T	14	FP45		

<b>Kitten ID</b>	<b>Dam ID</b>	<b>Date marked</b>	<b>Sex</b>	<b>Transponder ID</b>	<b>Estimated age in days</b>	<b>Purported sire</b>	<b>Date collared</b>	<b>Eventual panther ID</b>
K30	FP56	8/14/1996	F?	1142876	14	FP45		
K31	FP48	9/18/1996	M	7037C2	14-17	Unknown	3/18/1997	FP62
K32	FP48	9/18/1996	M	11EA2EC	14-17	Unknown	5/24/1997	FP64
K33	FP48	9/18/1996	M	6FFD52	14-17	Unknown		UCFP50
K34	TX105	10/4/1996	F	11EAO30T	30-35	FP16		
K35	TX101	12/21/1996	M	12AFFBF	4	FP45	11/19/1997	FP65
K36	TX101	12/21/1996	F	142581A	4	FP45	12/9/1997	FP66
K37	FP40	5/14/1997	M	1146911	21	FP45		
K38	TX107	6/4/1997	F	1311B3B	30+	Unknown	3/5/1998	FP71
K39	TX107	6/4/1997	F	771B4D	30+	Unknown	2/25/1998	FP70
K40	FP56	6/17/1997	M	1412E16	25-28	FP45		
K41	FP56	6/17/1997	F	14259BF	25-28	FP45		
K42	FP56	6/17/1997	F	1425A07	25-28	FP45	1/19/1998	FP67
K43	FP56	6/17/1997	M	12C2B93	25-28	FP45		
K44	FP55	10/2/1997	M	12A9E4AT	25-30	Unknown		
K45	TX108	2/11/1998	F	1D1DFDOT	21	FP16	11/7/2000	FP95
K46	TX108	2/11/1998	M	143E96ET	21	FP16		
K47	TX106	2/17/1998	M	1D3E32OT	7-10	FP54		
K48	FP55	2/25/1998	F	121134F	14	Unknown	2/20/2001	FP102
K49	FP55	2/25/1998	F	1D2B3AET	14	Unknown		
K50	FP55	2/25/1998	M	12A94A6T	14	Unknown		
K51	FP48	6/27/1998	M	1D2A504T	28	Unknown		
K52	FP66	10/2/1998	M	1D21638T	12	FP72		
K53	FP66	10/2/1998	F	1C49E48T	12	FP72		
K54	FP66	10/2/1998	M	1D2CBC3T	12	FP72		
K55	FP49	2/23/1999	M	1211046	25	Unknown		
K56	TX107	3/11/1999	F	1327679T	21+	FP79		
K57	TX107	3/11/1999	M	14245FOT	21+	FP79		
K58	TX107	3/11/1999	F	12A9FE5T	21+	FP79	4/10/2000	FP93
K59	FP61	4/6/1999	M	1EFF6EFT	14	FP16	1/17/2000	FP85
K60	FP55	5/10/1999	F	1EFFA75T	24-26	FP79	2/28/2000	FP87
K61	FP55	5/10/1999	M	1EFF978T	24-26	FP79		
K62	TX106	6/18/1999	F	114C9D7T	14	FP54/FP60		

<b>Kitten ID</b>	<b>Dam ID</b>	<b>Date marked</b>	<b>Sex</b>	<b>Transponder ID</b>	<b>Estimated age in days</b>	<b>Purported sire</b>	<b>Date collared</b>	<b>Eventual panther ID</b>
K63	TX106	6/18/1999	F	12AFC11T	14	FP54/FP60	2/8/2000	FP83
K64	FP70	6/23/1999	F	1E2EB33T	10-12	FP79	3/2/2000	FP88
K65	FP70	6/23/1999	M	703A4AT	10-12	FP79	4/6/2000	FP92
K66	FP70	6/23/1999	F	1EFFF55T	10-12	FP79	3/17/2000	FP91
K67	FP71	7/4/1999	M	1E2EBFET	17	FP79	3/8/2000	FP90
K68	FP71	7/4/1999	F	20509A9T	17	FP79	2/21/2000	FP86
K69	FP71	7/4/1999	M	1E2F6B7T	17	FP79		
K70	FP71	7/4/1999	F	1E2DF2BT	17	FP79		
K71	FP69	8/1/1999	M	1E2F276T	7	Unknown		
K72	FP69	8/1/1999	F	1F07255T	7	Unknown		
K73	FP69	8/1/1999	F	1FO14C2T	7	Unknown		
K74	FP48	10/25/1999	F	1EFFF38T	14-17	FP63,FP68		
K75	FP48	10/25/1999	F	1FO1BEDT	14-17	FP63,FP68		
K76	FP66	12/24/1999	M	1D2C5F6T	14	FP60		
K77	FP66	12/24/1999	F	1F00067T	14	FP60		
K78	FP66	12/24/1999	F	1E2F2D6T	14	FP60		
K79	FP78	4/26/2000	F	1D1CDD8T	10-14	FP59	11/1/2001	FP107
K80	FP78	4/26/2000	M	1F07DD7T	10-14	FP59	1/7/2001	FP96
K81	FP77	6/27/2000	M	1D3B75CT	28	Unknown		
K82	FP77	6/27/2000	F	1433F77T	28	Unknown	2/18/2004	FP128
K83	FP77	6/27/2000	M	1D3A078T	28	Unknown		
K84	FP67	8/19/2000	M	143F34DT	12	Unknown		
K85	FP67	8/19/2000	F	1E2E834T	12	Unknown		
K86	FP82	1/3/2001	F	1E2F17ET	14	FP65	2/13/2002	FP110
K87	FP82	1/3/2001	F	1E2EFB7T	14	FP65		
K88	FP82	1/3/2001	M	1F00D57T	14	FP65		
K89	FP87	2/7/2001	F	20501C5T	14-21	FP79	2/20/2004	FP129
K90	FP87	2/7/2001	M	1E2F06B	14-21	FP79	11/3/2001	FP108
K91	FP87	2/7/2001	M	1F071F4T	14-21	FP79		
K92	TX106	3/17/2001	F	600DBE9	14-16	FP60		
K93	TX106	3/17/2001	M	600CCC4	14-16	FP60		
K94	FP88	5/25/2001	M	1E2EB3DT	21	Unknown		
K95	FP88	5/25/2001	F	1EFF463T	21	Unknown		

Kitten ID	Dam ID	Date marked	Sex	Transponder ID	Estimated age in days	Purported sire	Date collared	Eventual panther ID
K96	FP88	5/25/2001	M	1F00576T	21	Unknown		
K97	FP88	5/25/2001	F	204F878T	21	Unknown		
K98	FP67	5/26/2001	F	11D5AFD	21	Unknown		UCFP49
K99	FP67	5/26/2001	M	1248B13T	21	Unknown		
K100	FP67	5/26/2001	M	600EFAF	21	Unknown		
K101	FP67	5/26/2001	M	600E363	21	Unknown		
K102	FP75	6/15/2001	M	600E58A	10-12	FP59		
K103	FP75	6/15/2001	M	6000FA1	10-12	FP59		
K104	FP55	6/28/2001	M	1EFFFC5T	17	Unknown		
K105	FP102	7/12/2001	M	1E2DFA4T	21	FP79		
K106	FP102	7/12/2001	M	600E036	21	FP79		
K107	FP49	8/27/2001	M	000600F828	21	Unknown		
K108	FP77	8/30/2001	M	000600F0EA	30	Unknown		
K109	FP73	3/3/2002	M	000600FD77	7	Unknown		
K110	FP73	3/3/2002	M	0001E2D9E2T	7	Unknown		
K111	FP73	3/3/2002	F	000600A2C9	7	Unknown		
K112	FP95	4/21/2002	F	0001E2E9D3T	25	FP85		
K113	FP93	4/23/2002	F	0001EFF813T	18	FP79		
K114	FP93	4/23/2002	F	000600CC53	18	FP79		
K115	FP93	4/23/2002	M	0001F071E4T	18	FP79	4/2/2003	FP119
K116	FP93	4/23/2002	F	0001F01C76T	18	FP79		
K117	FP78	4/30/2002	F	000600CDB3	21	FP59		
K118	FP78	4/30/2002	F	000600DB01	21	FP59		
K119	FP78	4/30/2002	F	000600E3E3	21	FP59	10/23/2002	FP113
K120	FP78	4/30/2002	M	0001F01D1CT	21	FP59	10/23/2002	FP114
K121	FP101	5/9/2002	M	000204F9EAT	10	Unknown		
K122	FP101	5/9/2002	F	0001E2D6FDT	10	Unknown		
K123	FP83	5/12/2002	M	000631AED6	28	Unknown		
K124	FP106	5/27/2002	F	0001F003A0T	10	Unknown		
K125	FP106	5/27/2002	M	0001D2CBC4T	10	Unknown		
K126	FP106	5/27/2002	M	0001E2E8F6T	10	Unknown		

Kitten ID	Dam ID	Date marked	Sex	Transponder ID	Estimated age in days	Purported sire	Date collared	Eventual panther ID
K127	FP55	5/30/2002	F	000600EAD2	10	FP79		
K128	FP75	6/6/2002	M	000600E84B	10	FP100/FP98		
K129	FP75	6/6/2002	M	00060101BC	10	FP100/FP98	3/31/2005	FP139
K130	FP112	6/15/2002	M	0001EFF497T	7	FP100/FP98		
K131	FP112	6/15/2002	M	000600E4CE	7	FP100/FP98		
K132	FP67	6/18/2002	F	000600D0F1	10	Unknown	1/20/2003	FP116
K133	FP67	6/18/2002	M	000600EBA8	10	Unknown		
K134	FP67	6/18/2002	M	000600E776	10	Unknown		
K135	FP107	7/7/2002	M	0006010509	9-10	Unknown		
K136	FP107	7/7/2002	F	000600F465	9-10	Unknown		
K137	FP102	7/19/2002	F	0006318229	15	FP79		
K138	FP102	7/19/2002	M	000630E287	15	FP79		
K139	FP61	9/27/2002	F	000204FBC3T	10	Unknown		
K140	FP61	9/27/2002	M	000600D0D4	10	Unknown		
K141	FP61	9/27/2002	M	000600F2F8	10	Unknown		
K142	FP61	9/27/2002	F	0001D29A56T	10	Unknown		
K143	FP87	3/25/2003	F	000600DD57	15	FP79		
K144	FP87	3/25/2003	M	chipped # unk	15	FP79		
K145	FP87	3/25/2003	F	chipped # unk	15	FP79		
K146	FP101	4/19/2003	F	00062EDF9D	10	FP65/FP100		
K147	FP101	4/19/2003	M	0006328F81	10	FP65/FP100	12/17/2004	FP135
K148	FP101	4/19/2003	F	00062E2A15	10	FP65/FP100		
K149	FP110	6/3/2003	F	000600F8DE	6-10	Unknown		
K150	FP110	6/3/2003	M	000600CCD1	6-10	Unknown	3/4/2004	FP130
K151	FP110	6/3/2003	F	000600C049	6-10	Unknown		
K152	FP93	8/5/2003	F	000600037C	21	FP60		
K153	FP93	8/5/2003	M	0005FFE2D6	21	FP60		
K154	FP93	8/5/2003	M	0006000B2A	21	FP60		
K155	FP120	2/7/2004	F	0005FFE0A	14	Unknown		
K156	FP120	2/7/2004	M	0005FFE0DA	14	Unknown		
K157	FP75	3/21/2004	M	0006327AC0	23	Unknown		
K158	FP75	3/21/2004	M	000632781C	23	Unknown		
K159	FP75	3/21/2004	F	00062EE361	23	Unknown		
K160	FP116	5/1/2004	F	0006479F70	14	FP65		

Kitten ID	Dam ID	Date marked	Sex	Transponder ID	Estimated age in days	Purported sire	Date collared	Eventual panther ID
K161	FP116	5/1//2004	F	000647D7A6	14	FP65		
K162	FP116	5/1//2004	M	0006485640	14	FP65		
K163	FP107	5/21/2004	M	0006327255	7	Unknown		
K164	FP107	5/21/2004	M	0006326E04	7	Unknown		
K165	FP107	5/21/2004	F	000632227C	7	Unknown		
K166	FP107	5/21/2004	F	000647A475	7	Unknown		
K167	FP70	6/6/2004	F	00064DBAB1	12	Unknown		
K168	FP70	6/6/2004	M	00064DAB32	12	Unknown		
K169	FP70	6/6/2004	F	00064D7C86	12	Unknown		
K170	FP102	8/5/2004	F	00064DEB7D	15	FP79		
K171	FP102	8/5/2004	M	00064DDEEA	15	FP79		
K172	FP102	8/5/2004	F	00064D918C	15	FP79		
K173	FP121	9/1/2004	F	0006000738	14	Unknown		
K174	FP124	9/29/2004	M	000647D79D	21+	Unknown		
K175	FP124	2/10/2005	M	0005FFF5E1	14	Unknown		
K176	FP124	2/10/2005	M	00064D67F9	14	Unknown		
K177	FP124	2/10/2005	F	0006000D6B	14	Unknown		
K178	FP110	3/7/2005	M	000601E07A	12	Unknown		
K179	FP110	3/7/2005	F	00064DD051	12	Unknown		
K180	FP107	3/15/2005	F	000600E4BB	14	FP119/FP131		
K181	FP107	3/15/2005	F	000600F978	14	FP119/FP131		
K182	FP129	4/6/2005	F	0006482822	10	Unknown		
K183	FP129	4/6/2005	M	00064DE502	10	Unknown		
K184	FP129	4/6/2005	M	00064D7610	10	Unknown		
K185	FP113	4/20/2005	M	000647B5F9	15	FP131/FP133		
K186	FP113	4/20/2005	F	000647AE8B	15	FP131/FP133		
K187	FP116	6/19/2005	M	00064D6A85	22	Unknown		
K188	FP116	6/19/2005	F	000647AEEE6	22	Unknown		
K189	FP116	6/19/2005	M	000647BC03	22	Unknown		
K190	FP128	7/21/2005	M	64D816A	24	Unknown		
K191	FP128	7/21/2005	M	647C7FE	24	Unknown		
K192	FP75	8/7/2005	M	000647CDE9	7	FP135		
K193	FP75	8/7/2005	F	00064DB63B	7	FP135		
K194	FP75	8/7/2005	F	00064DAC56	7	FP135		
K195	FP75	8/7/2005	M	000600E8A6	7	FP135		
K196	FP110	11/1/2005	M	00063DE442	21	Unknown		

<b>Kitten ID</b>	<b>Dam ID</b>	<b>Date marked</b>	<b>Sex</b>	<b>Transponder ID</b>	<b>Estimated age in days</b>	<b>Purported sire</b>	<b>Date collared</b>	<b>Eventual panther ID</b>
K197	FP110	11/1/2005	M	00063DA510	21	Unknown		
K198	FP110	11/1/2005	M	00064339FD	21	Unknown		
K199	FP110	11/1/2005	F	000643666C	21	Unknown		
K200	FP107	2/17/2006	F	6009668	6	FP131		
K201	FP107	2/17/2006	M	000600F274	6	FP131		
K202	FP121	3/5/2006	F	000600DAB4	14	Unknown		
K203	FP121	3/5/2006	M	000600B508	14	Unknown		
K204	FP121	3/5/2006	M	0006483B07	14	Unknown		
K205	FP94	6/22/2006	F	00064DA2F2	17	Unknown		
K206	FP94	6/22/2006	M	00063D8B9D	17	Unknown		
K207	FP94	6/22/2006	F	00063DD7D8	17	Unknown		
K208	FP145	6/23/2006	F	000647B5DA	12	FP138		
K209	FP145	6/23/2006	F	00064ECCA4	12	FP138		
K210	FP145	6/23/2006	F	000672579C	12	FP138		

**Appendix III. List of all known dens of radio-instrumented female Florida panthers and Texas pumas in southern Florida from June 1985 to June 2006. Kitten numbers preceded with “K” indicate natal den was visited. Samples are ordered by female ID and secondarily by year. Data collected by FWC and BCNP.**

<b>Panther ID</b>	<b>Den date</b>	<b>Location<sup>a</sup></b>	<b>Habitat</b>	<b>No. of kittens</b>	<b>Kittens handled</b>	<b>Purported sire</b>
FP09	Jun-85	S Golden Gate Estates	?	1?	FP10♂; den not visited	Unknown
FP09	Jun-87	FSSP	Hardwood hammock	1?	Den not visited	FP12
FP09	May-89	FSSP	Mixed swamp	?	Den not visited	Unknown
FP09	Jul-90	FSSP	Mixed swamp	2?	FP202♂, FP203♂; den not visited	FP37
FP09	Jun-93	FSSP	Hardwood hammock	Unsuccessful?	Den not visited	FP51
FP11	May-86	BCNP - Bear Island	Pine/palmetto	3?	FP19♀; den not visited	FP12
FP11	May-88	BCNP - Bear Island	Pine/palmetto	1?	FP29♂; den not visited	FP20
FP11	Apr-90	BCNP - Bear Island	Pine/palmetto	1?	♀(roadkill); den not visited	FP12
FP11	Jul-91	Price's	Hardwood hammock	1?	FP47♂; den not visited	FP12
FP11	Mar-93	BCNP - Bear Island	Hardwood hammock	?	Den not visited	FP12?
FP14	Apr-89	Long Pine Key	Hardwood hammock	2?	FP42♂; den not visited	FP16
FP14	Mar-91	Long Pine Key	Hardwood hammock	Unsuccessful	Den not visited	FP16
FP15	May-88	Long Pine Key	Hardwood hammock	Unsuccessful	Den not visited	FP16
FP19	Mar-88	Price's	Hardwood hammock	4?	FP30♂; den not visited	FP13
FP19	Jul-89	FPNWR	Hardwood hammock	1?	FP43♂; den not visited	FP12
FP19	Nov-90	Rock Spring Island	Pine/palmetto	2?	FP205♀, FP45♂; den not visited	FP12
FP19	Mar-92	NE Hog Pond	Pine/palmetto	2?	UCFP21♀, FP53♂; den not visited	FP12
FP19	May-94	FPNWR	Pine/palmetto	2	K12♀, K13♀	FP51?
FP19	Apr-96	Barfield's	Palmetto/oaks	2	K27♀, K28♀	FP54, FP51?
FP23	Aug-92	Raccoon Point	Unknown	2	FP209♀, FP210♂	FP42
FP23	Dec-92	Raccoon Point	Unknown	1?	FP55♀; den not visited	FP42
FP31	Mar-89	Catherine Island	Pine/palmetto	3?	FP34♂, FP35♂; den not visited	FP12
FP31	Jul-90	Regency Farms	Pine/palmetto	2?	FP201♂, FP204♀; den not visited	FP12
FP31	Sep-91	Barfield's	Hardwood hammock	2?	FP48♀, FP52♀; den not visited	FP12
FP32	Mar-89	Catherine Island	Pine/palmetto	Unsuccessful?	Den not visited	Unknown
FP32	May-92	FPNWR	Pine/palmetto	1?	FP208♀	FP12
FP32	Mar-96	FPNWR	Pine/palmetto	1	UCFP24 (Dead ♀)	Unknown
FP36	Mar-90	BCSIR	Hardwood hammock	?	Den not visited	Unknown
FP36	May-91	BCNP - Add Lands	Pine/palmetto	2?	FP207♂, FP50♂; den not visited	FP26

Panther ID	Den date	Location <sup>a</sup>	Habitat	No. of kittens	Kittens handled	Purported sire
FP36	Oct-93	N of BCSIR	Pine/palmetto	1?	Den not visited	FP26, FP34
FP36	Jun-95	Canoe Lake Strand	Pine/palmetto	?	Den not visited	FP45?
FP36	Feb-96	Wilson Cypress	Pine/palmetto	3 (remains of 4th)	K24♀,K25♂,K26♂,UCFP44	FP45
FP40	Nov-90	Baker's Grade	Pine/palmetto	2	FP206♀, FP44♂; den not visited	FP26
FP40	Mar-92	Baker's Grade	Pine/palmetto	2	FP54♂, K02♂	FP28?
FP40	Jun-93	Baker's Grade	Pine/palmetto	3	K03♂,K04♀,K05♀	FP26
FP40	?	?	?	2?	FP60♂, ♀ tracks; den not visited	Unknown
FP40	May-97	BCNP - Add Lands	Pine/palmetto	2	FP69♀, K37♂	FP45
FP48	Oct-93	BCNP - Bear Island	Pine/palmetto	3	K06♂,K07♀,K08♀	FP12
FP48	Jun-95	Dozier Hammock	Pine/palmetto	2	FP59♂, K17♀	Unknown
FP48	Sep-96	NE Doctor's Ham.	Vines/ferns	3	FP62♂,FP64♂,UCFP50♂	Unknown
FP48	Jun-98	BCNP - Bear Island	Pine/palmetto	2	K51♂, FP75♀	FP68 or FP45
FP48	Oct-99	BCNP - Bear Island	Palmetto, myrtle	2	K74♀, K75♀( abandoned)	FP63 or FP68
FP49	Jan-99	BCNP - Add Lands	Pine/palmetto	1	K55♂	Unknown
FP49	Aug-01	BCNP - Add Lands	Pine/palmetto	1	K107♂	Unknown
FP52	Jul-93	Sadie Cypress	Mixed swamp	2?	1♂ (roadkill); den not visited	FP46
FP52	Jul-94	Sadie Cypress	Cypress swamp	?	Den not visited	Unknown
FP55	Apr-95	BCNP	Pine/palmetto	2	K14♀,K15♀	FP42
FP55	Sep-97	BCNP - N Burns Lake	Pine/palmetto	1	K44♂	Unknown
FP55	Feb-98	BCNP - N Monument Lake	Pine/palmetto	3	FP102♀,K49♀,K50♂	Unknown
FP55	Apr-99	BCNP	Palmetto/myrtle	2	FP87♀, K61♂	Unknown
FP55	Jun-01	BCNP - NE Airplane Prairie	Palmetto	1	K104♂	FP79
FP55	May-02	BCNP	Pine/palmetto	1	K127♀	FP79
FP55	Sep-03	BCNP	?		Den not visited	Unknown
FP56	Apr-94	Baker's Grade	Pine/palmetto	3	K09♂,K10♀,K11♂	Unknown
FP56	Oct-95	North BCSIR	Pine/palmetto	3	K20♂,K21♂,K22♂	FP45
FP56	Aug-96	North BCSIR	Palmetto	2	K29♀?,K30♀?	FP45
FP56	Jun-97	Bakers Grade	Pine/palmetto	4	K40♂,K41♀,K43♂, FP67♀	FP45
FP57	Jun-98	FSSP	Mixed swamp	?	Den not visited	FP54
FP61	Mar-99	Long Pine Key	Hardwood hammock	1	FP85♂	FP16
FP61	Sep-02	ENP - East	Hardwood/Schinus	4	K139♀, K140♂, K141♂, K142♀	Unknown
FP66	Sep-98	Belle Meade	Pine/palmetto	3	K52♂,K53♀,K54♂	FP72
FP66	Dec-99	Private lands	Cypress, cabbage	3	K76♂,K77♀,K78♀	FP60
FP67	Aug-00	Private lands	Palmetto	2	K84♂, K85♀	Unknown
FP67	May-01	Private lands	Pine/palmetto	4	K98♀,K99♂,K100♂, K101♂	Unknown

<b>Panther ID</b>	<b>Den date</b>	<b>Location<sup>a</sup></b>	<b>Habitat</b>	<b>No. of kittens</b>	<b>Kittens handled</b>	<b>Purported sire</b>
FP67	Jun-02	Private lands	Palmetto	3	FP116♀, K133♂, K134♂	Unknown
FP69	Jul-99	BCNP - NE of Baker's Camp	Palmetto	3	K71♂, K72♀, K73♀	Unknown
FP70	Jun-99	BCNP - NE of Monument Lake	Pine/palmetto	3	FP88♀, FP92♂, FP91♀	FP79
FP70	May-04	BCNP - Turner River Unit	Pine/palmetto	3	K167♀, K168♂, K169♀	Unknown
FP71	Jun-99	BCNP	Pine/palmetto	4	FP90♂, FP86♀, K69♂, K70♀	FP79
FP73	?	?	?	1?	FP74♂; den not visited	-
FP73	Feb-99	BCSIR	?	1?	FP84♂; den not visited	-
FP73	Feb-02	BCNP - Addition Lands	Palmetto	3	K109♂, K110♂, K111♀	Unknown
FP75	Apr-00	Private lands	Hardwood hammock	Unsuccessful	Den not visited	
FP75	Jun-01	BCNP - Bear Island	Pine/palmetto	2	K102♂, K103♂	FP59
FP75	May-02	BCNP - Bear Island	Palmetto	2	K128♂, K129♂	FP98, FP100
FP75	Mar-04	BCNP - Bear Island	Palmetto	3	K157♂, K158♂, K159♀	Unknown
FP75	Aug-05	BCNP - Bear Island	Palmetto	4	K192♂, K193♀, K194♀, K195♂	FP135
FP77	May-00	BCNP - Addition Lands	Palmetto	3	K81♂, K82♀, K83♂	Unknown
FP77	Aug-01	BCNP - Addition Lands	pine/palmetto	1	K108♂	Unknown
FP78	Apr-00	FPNWR	Pine/cabbage	2	FP107♀d, FP96♂	FP59
FP78	Apr-02	FPNWR	Pine/palmetto	4	K117♀, K118♀, K119♀, K120♂	FP59
FP82	Dec-00	OK Slough	Sawgrass marsh	3	K86♀, K87♀, K88♂	FP65
FP83	Apr-02	FSSP	Fern bed	1	K123♂	Unknown
FP83	Jun-04	FSSP	?	?	Den not visited	Unknown
FP87	Jan-01	BCNP	Palmetto	3	K89♀, FP108♂, K91♂	FP79
FP87	Mar-03	BCNP - N of Oasis	Pine/palm	3	K143♀, K144♂, K145♀	FP79
FP88	May-01	BCNP - Loop Unit	Sawgrass marsh	4	K94♂, K95♀, K96♂, K97♀	Unknown
FP93	Apr-02	BCNP - Turner River Unit	Palmetto	4	K113♀, K114♀, FP119♂, K116♀	FP79
FP93	Jul-03	BCNP - Turner River Unit	Hardwood hammock	3	K152♀, K153♂, K154♂	FP60
FP93	Jun-06	BCNP - Turner River Unit	Pine palmetto	3	K211♀, K212♀, K213♀	FP133
FP94	Jun-06	ENP - CIA hammock	Hardwood hammock	3	K205♀, K206♂, K207♀	Unknown
FP95	Mar-02	ENP - Long Pine Key	Brazilian pepper	1	K112♀	FP85
FP95	Jun-06	ENP - Long Pine Key	Hardwood hammock	3	K214♀, K215♀, K216♂	Unknown
FP101	Apr-02	BCSIR	Pine/palmetto	2	K121♂, K122♀	Unknown
FP101	Apr-03	Private lands	Palmetto/vines	3	K146♀, K147♂, K148♀	FP65/FP100
FP102	Jun-01	BCNP - Monument Lake	Mixed swamp	2	K105♂, K106♂	FP79
FP102	Jul-02	BCNP - Monument Lake	Palmetto	2	K137♀, K138♂	FP79
FP102	Aug-04	BCNP - Burns Lake	Pine palmetto	3	K170♀, K171♂, K172♀	FP79
FP102	Jun-06	BCNP - Turner River Unit	Pine palmetto	2	K217♂, K218♂	FP138

<b>Panther ID</b>	<b>Den date</b>	<b>Location<sup>a</sup></b>	<b>Habitat</b>	<b>No. of kittens</b>	<b>Kittens handled</b>	<b>Purported sire</b>
FP106	May-02	FPNWR	Hardwood hammock	3	K124♀, K125♂, K126♂	Unknown
FP107	Jun-02	FPNWR	Pine palmetto	2	K135♂, K136♀	Unknown
FP107	May-04	FPNWR	Pine/palmetto	4	K163♂, K164♂, K165♀, K166♀	Unknown
FP107	Mar-05	FPNWR	Pine palmetto	2	K180♀, K181♀	FP119, FP131
FP107	Feb-06	FPNWR	Hardwood hammock	2	K200♀, K201♂	FP131
FP110	Jun-03	OK Slough	Palmetto/vines	3	K149♀, K150♂, K151♀	Unknown
FP110	Feb-05	OK Slough	Pine palmetto	2	K178♂, K179♀	Unknown
FP110	Oct-05	OK Slough	Palmetto/oak	4	K196♂, K197♂, K198♂, K199♀	Unknown
FP112	Jun-02	BCNP - Bear Island	Palmetto	2	K130♂, K131♂	FP98, FP100
FP113	Aug-04	FPNWR	?	1?	UCFP67	Unknown
FP113	Apr-05	FPNWR	Pine palmetto	2	K185♂, K186♀	FP131, FP133
FP116	May-04	Hendry Co. Gum Swamp	Pine/palmetto	3	K160♀, K161♀, K162♂	FP65
FP116	May-05	BCNP- Addition Lands	Pine palmetto	3	K187♂, K188♀, K189♂	Unknown
FP120	Jan-04	BCNP - Turner River Unit	Pine/palmetto	2	K155♀, K156♂	Unknown
FP121	Aug-04	BCSIR	Cypress/ferns	1	K173♀	Unknown
FP121	Feb-06	BCSIR	Pine/palmetto	3	K202♀, K203♂, K204♂	Unknown
FP124	Sep-04	BCNP - Stairsteps	Hardwood hammock	1	K174♂	Unknown
FP124	Jan-05	BCNP - Pinecrest	Tropical hardwood	3	K175♂, K176♂, K177♀	Unknown
FP128	Jun-05	BCSIR	Hardwood hammock	2	K190♂, K191♂	Unknown
FP129	Apr-05	BCNP- Corn Dance	Pine/palmetto	3	K182♀, K183♂, K184♂	Unknown
FP145	Jun-06	BCNP -Deep Lake	Hardwood/palmetto	3	K208♀, K209♀, K210♀	FP138
TX101	Sep-95	BCSIR	Pine/palmetto	2	FP73♀, FP79♂	Unknown
TX101	Dec-96	BCSIR	Palmetto/oak	2	FP65♂, FP66♀	FP45
TX105	Sep-96	ENP - Long Pine Key	Tropical hardwood	1	K34♀	FP16
TX105	Jul-99	ENP - Long Pine Key	Brazilian pepper	1?	FP94F1♀; den not visited	FP16
TX106	Nov-95	S Golden Gate Estates	Cypress/mixed	1	K23♀	FP51
TX106	Feb-98	N Golden Gate Estates	Vines/cabbage	1	K47♂	FP54, FP59?
TX106	Jun-99	PSSF	Cabbage	2	K62♀, FP83♀	FP54
TX106	Mar-01	FPNWR	Pine/palmetto	2	K92♀, K93♂	FP60
TX107	May-97	BCNP - N of Oasis	Pine/palmetto	2	FP70♀, FP71♀	Unknown
TX107	Feb-99	BCNP - N of Buckskin Prairie	Pine/palmetto	3	K56♀, K57♂, FP93♀	FP79
TX108	Jun-96	ENP - Long Pine Key	Tropical hardwood	1?	FP61♀; den not visited	FP16
TX108	Feb-98	ENP - Long Pine Key	Tropical hardwood	2	FP95♀, K46♂	FP16

<sup>a</sup>BCNP = Big Cypress National Preserve; BCSIR = Big Cypress Seminole Indian Reservation; ENP = Everglades National Park; FPNWR = Florida Panther National Wildlife Refuge; FSSP = Fakahatchee Strand State Preserve; NBCNP = Big Cypress National Preserve north of Interstate 75; OSSF = Okaloacoochee Slough State Forest; PSSF = Picayune Strand State Forest/Wildlife Management Area; SBCNP = Big Cypress National Preserve south of Interstate 75

**Appendix IV. Florida panther and Texas puma mortalities and injuries sorted by year from 2 February 1972 to 30 June 2005. Data collected by FWC and BCNP. Ages are estimated unless panthers were handled as kittens at natal dens. Age values are in years unless otherwise noted.**

<b>Date</b>	<b>Panther ID</b>	<b>Sex</b>	<b>Age</b>	<b>Location</b>	<b>Cause</b>
2/13/1972	UCFP28	M	2 to 3	SR 25 south of Moore Haven	Vehicle
3/8/1978	UCFP02	M	2 to 3	L-28, Dade County	Shooting
2/1/1979	UCFP03	M	?	US 41, Gannett Strand	Unknown
12/23/1979	UCFP04-(G80-4)	F	1.5 to 2.5	SR 29 just north of SR 84	Vehicle
2/7/1980	UCFP05-(G80-15)	M	1.5 to 2.5	SR 29 near Sunniland	Vehicle
4/19/1981	UCFP06-(G81-19)	F	2 to 3	SR 29 near Copeland	Vehicle
4/16/1982	FP06	M	6 to 7	Northeast BCNP	Unknown
1/17/1983	FP03	F	9+	FSSP	Capture
3/18/1983	UCFP09-(G83-22)	M	2 to 3	US 27 Palmdale	Vehicle
5/22/1983	UCFP10	F	Adult	L-8 canal near Canal Point, Palm Beach County	Shooting
11/18/1983	FP05	F	8 to 9	Fakahatchee Conserv. Club	Unknown
12/1/1983	UCFP08	M	3 to 6	Seminole Indian Reservation, Hendry County	Shooting
12/14/1983	FP01	M	12 to 14	SR 84; MM18	Vehicle
10/27/1984	FP02	M	14+	FSSP	Intraspecific Aggression
10/30/1984	UCFP11	F	2 to 3	Corbett WMA, Palm Bch. Co. (Elmer Brooker)	Shooting
11/2/1984	BIG GUY	M	?	US 41 1	Vehicle - Injured
11/12/1984	UCFP12-(G84-26)	F	8 to 10	SR 84; MM16	Vehicle
1/8/1985	UCFP13-(G85-BNZ)	F	1.5 to 2	SR 84; MM16	Vehicle
3/23/1985	UCFP14	F	2 to 3	Collier Seminole State Park; Collier Co.	Shooting (skeleton)
4/18/1985	FP04	M	12+	SR 84; MM17	Vehicle
5/12/1985	NONE	F	UNK	CR 951; 2 miles N of US 41	Vehicle
10/26/1985	FP07	M	10	SR 29; 4 miles S of SR 84	Vehicle
1/1/1986	FP09	F	not fatal	Golden Gate Estates, S of SR 84	Shooting
11/15/1986	UCFP15	F	4 to 5	SR 84; MM16.5	Vehicle
1/27/1987	FP10	M	16 to 20 mos	Mud Lake Strand	Intraspecific Aggression- by adult male panther
6/17/1987	FP20	M	3 to 4	CR 858; 0.8 miles E of SR 29	Vehicle - Injured
12/14/1987	FP13	M	6 to 8	SR 29 Sunniland	Vehicle
6/10/1988	FP15	F	7 to 8	ENP	Unknown
7/23/1988	FP21	F	2.5	1 mile east of US1 on Palm Drive	Vehicle - Injured

Date	Panther ID	Sex	Age	Location	Cause
8/20/1988	FP08	F	13 to 15	Gainesville	Liver Failure (old age)
8/22/1988	FP24	M	3 to 5	Glades Co. near Palmdale	Unknown
8/24/1988	FP20	M	4 to 5	Bear Island	Congenital Heart Defect
8/26/1988	FP25	M	4 to 5	FPNWR	Intraspecific Aggression- bacterial infection from fight
11/29/1988	FP28	M	1.5 to 2	Near Daniels Road, Ft. Myers Airport	Vehicle - Injured
1/25/1989	UCFP18-(RK-850)	M	3	CR 850 1.5 miles south of SR 80	Vehicle
7/23/1989	FP27	M	3 to 4	ENP	Unknown
11/25/1989	FP33	M	3	2 miles NW of Hendry Prison	Rabies
1/24/1990	FP35	M	10 mos.	Gainesville	Capture-Related Abandonment (infection)
1/29/1990	FP30	M	22 mos.	FSSP	Intraspecific Aggression- killed by FP37
6/18/1990	UCFP19-(RK-846)	M	10 mos.	CR 835 (846) 1 mile E of CR 833	Vehicle
6/18/1990	FP39	M	3 to 4	ENP	Pyrothorax
7/23/1990	FP17	M	9	Addition lands near Tangerine Camp	Unknown
9/26/1990	FP41	F	2	Hendry Co. W of BCSIR	Intraspecific Aggression- killed by FP28
10/3/1990	FP18	F	9	Hendry Co. So. of CR 846 near Rock Lake	Intraspecific Aggression- killed by FP28
11/26/1990	FP37	M	4 to 5	SR 29; 0.5 miles N of I-75	Vehicle
2/4/1991	UCFP20-(FP11's kitten)	F	9 mos.	SR 29 Pistol Pond Bridge	Vehicle
6/20/1991	FP14	F	10 to 11	ENP	Unknown
7/20/1991	FP22	F	5	ENP	Infection
11/1/1991	FP43	M	2	BCSIR, Hendry Co.	Intraspecific Aggression- killed by FP26
4/7/1992	NONE	M	UNK	Alico Rd.	Vehicle
5/27/1992	FP29	M	4	Hendry Co., Gum Swamp	Pseudorabies
9/25/1992	FP28	M	5.5	BCSIR, Hendry Co.	Intraspecific Aggression- possibly killed by FP26
11/9/1992	UCFP21-(FP19's kitten)	F	7 mos.	SR 29 Sunniland	Vehicle
2/19/1993	FP47	M	18 mos.	FSSP	Intraspecific Aggression- killed by male FP51
2/26/1993	FP53	M	11 mos.	Private lands N of FPNWR	Intraspecific Aggression-killed, eaten by uncollared male
7/6/1993	FP44	M	2.5	Raccoon Pt. BCNP	Intraspecific Aggression-killed by FP42
8/9/1993	UCFP22	M	2 to 3	Daniels Rd.; 1 mile east of I-75	Vehicle
11/15/1993	FP34	M	5	SE Hendry Co. L28	Bacterial infection from lacerated esophagus
12/6/1993	FP50	M	2.5	CR 846; 5 miles east of Immokalee	Vehicle
2/28/1994	UCFP23-(FP52's kitten)	M	8 mos.	3 miles north of County Line Road	Vehicle
3/3/1994	FP31	F	12 to 14	SR 29 Sunniland	Vehicle
7/8/1994	FP26	M	11 to 12	4 miles E. Hendry Prison	Intraspecific Aggression- killed by FP46; punctured skull
8/4/1994	FP38	F	9	Conservation Area 3A	Pleuritis related to chest puncture
11/8/1994	FP12	M	13 to 14	Private lands, Hendry County	Intraspecific Aggression- infected bite wounds from FP46

Date	Panther ID	Sex	Age	Location	Cause
1/14/1995	FP52	F	3.3	CR 846 near Dupree Rd.	Vehicle
6/22/1995	FP42	M	6	Turner River Unit	Unknown
9/21/1995	TX102	F	4	CR 833 just N of CR 835 (846)	Vehicle
3/18/1996	UCFP24	F	1.5 to 2 week	FPNWR	Unknown (dehydrated)
4/24/1996	UCFP29	M	3 to 5	5.5 miles E of SR 29 on CR 832	Vehicle
5/2/1996	UCFP30	F	1	US 41 @ Turner River	Vehicle
3/30/1997	FP58	M	3	Sadie Cypress	Intraspecific Aggression- septicemia from bite wounds
7/13/1997	UCFP31	?	?	CR 846; 1.5 miles W CR 858	Vehicle
12/2/1997	FP19	F	11.5	FPNWR (Merry Christmas)	Ruptured Aorta
12/26/1997	FP21	F	11 to 12	White Oak	Euthanasia
2/2/1998	FP40	F	10	Bear Island - E Harrell Strand	Intraspecific Aggression- died of infected bite wounds
2/14/1998	FP64	M	1.5	SR 29 at clear-cut, FPNWR	Intraspecific Aggression
4/18/1998	TX104	F	6 to 7	S of Sabal Palm Road in citrus grove	Shooting
6/13/1998	UCFP25	F	2	CR 846; 3 miles E CR 858	Vehicle
7/17/1998	FP51	M	9	SR 29 @ Bear Island Grade	Vehicle
8/2/1998	FP45	M	7.5	BCSIR, Hendry Co.	Intraspecific Aggression
9/17/1998	UCFP26	M	3 to 5	US 41	Vehicle
10/10/1998	FP36	F	14+	NBCNP; E. of L28 interceptor canal	Unknown (likely natural)
12/23/1998	FP72	M	3 to 4	BCSIR, Hendry Co.	Intraspecific Aggression- killed by uncollared male
2/3/1999	FP46	M	9 to 9.5	Private land S. CR 846, Hendry Co	Intraspecific Aggression
3/26/1999	FP64	M	2.5	Audubon's Corkscrew Sanctuary	Intraspecific Aggression- killed by uncollared male
7/8/1999	UCFP27	F	2	Farm road E of Hendry Prison	Vehicle
8/19/1999	TX103	F	-	SBCNP, southern Lostman's Pines 1mile N of ENP boundary	Metabolic Complications Associated with pregnancy
9/8/1999	FP74	M	2.5	US 27 near Venus	Vehicle
10/29/1999	UCFP33	M	11 mos.	CR 833; 2 miles N BCSIR	Vehicle
11/13/1999	FP76	M	2.5 to 3	FSSP; 1.9 miles W of SR 29 off of Lancaster Grade	Intraspecific Aggression- killed by FP54
1/3/2000	FP16	M	14	NE boundary of ENP	Unknown
2/10/2000	FP80	F	4 to 5	West of Swamp Safari, BCSIR	Vehicle
2/28/2000	K76-(FP66's kitten)	M	3 mos.	1 mile W SR 29 on CR 858	Vehicle
3/1/2000	FP68	M	5 to 7	NBCNP W of Tangerine tram	Unknown
3/23/2000	UCFP34	M	1.5 to 2	CR846; 2 miles E of County Line Rd	Vehicle
3/29/2000	TX101	F	-	BCSIR; 1/4 mile W of Game Pen, 3/4 mile S of canal	Unknown
4/20/2000	FP84B-FL	M	14 mos.	Fisheating Creek WMA, N side of creek, 5 miles W of US 27	Unknown
6/23/2000	UCFP35	M	1.5 to 2	CR846; 2 miles east of Immokalee	Vehicle
8/13/2000	UCFP36	F	1.7	CR 846; East of Immokalee near power lines	Vehicle

Date	Panther ID	Sex	Age	Location	Cause
11/10/2000	FP89	M	3.5	BCNP, 2 miles NW of Mud Lake	Intraspecific Aggression- killed by FP79
12/1/2000	FP23	F	14	BCNP 2 miles E of Turkey Foot	Unknown
12/29/2000	UCFP37	F	5	4.5 miles E SR29 on CR846	Vehicle
1/18/2001	TX107	F	8 to 9	BCNP; 11 Mile Rd.	Unknown
2/27/2001	FP11	F	19 to 20	200 yds. S of CR 846, 1 mile E of Dupree Rd.	Intraspecific Aggression
4/14/2001	UCFP38	F	2	CR 833 1 mile N BCSIR, Hen dry Co.	Vehicle
4/26/2001	FP90	M	1.9	US 27; 2.5 miles N of Terrytown	Vehicle
5/7/2001	UCFP39	F	10 mos.	SR 29; 1/2 mile N of Jerome	Vehicle
5/7/2001	UCFP40	M	10 mos.	SR 29; 1/2 mile N of Jerome	Vehicle
5/22/2001	UCFP41	M	2 to 3	SR 29; Sunniland, near Mine Rd.	Vehicle
6/14/2001	UCFP42	F	3 to 4	CR846; 1 mile E of Powerline	Vehicle
8/17/2001	UCFP43	M	2 to 3	CR846; 1 mile east of Powerline	Vehicle
9/1/2001	FP92	M	2.2	N Flint Pen Strand, CREW	Unknown
12/2/2001	FP97	M	2	E of Gopher Ridge Grove N of Immokalee	Intraspecific Aggression
1/3/2002	FP49	F	12	BCNP Addition Lands	Intraspecific Aggression- killed by uncollared male
1/15/2002	FP96	M	1.75	N end Big Corkscrew Island	Intraspecific Aggression
1/16/2002	FP105	F	~7	FPNWR, SW corner of clear-cut	Unknown
4/5/2002	UCFP45	M	3	3.4 miles N of Palmdale, Glades County	Vehicle
4/10/2002	UCFP46	M	6 mos.	1/2 mile N of Deep Lake, Collier County	Vehicle
7/1/2002	FP98	M	4 to 5	1 km north of Pistol Pond on SR 29	Vehicle
9/5/2002	FP111	M	9 to 10	OK Slough N of CR832	Intraspecific Aggression
9/11/2002	FP112	F	4	BCNP - Bear Island	Intraspecific Aggression
9/12/2002	FP32	F	15	FPNWR - Rock Island	Malnutrition (old-age)
10/16/2002	FP78	F	6	FPNWR - Fire Tower	Intraspecific Aggression
11/10/2002	UCFP48	F	8 to 9 mos.	CR846; 5-6 miles east of Immokalee	Vehicle
11/16/2002	FP108	M	22 mos.	BCNP Raccoon Pt.	Traumatic Neck Injury
11/25/2002	UCFP49 (K98)	F	19 mos.	CR846; 3-4 miles east of Immokalee	Vehicle
11/28/2002	FP99	M	33 mos.	CR846; 1/4 mile N of Collier County Fairgrounds	Vehicle
1/15/2003	FP67	F	5.5	Hendry County; Gum Slough	Intraspecific Aggression- killed by FP65
1/26/2003	UCFP50 (K33)	M	3 to 4	CR846; 3.4 miles E Everglades Boulevard	Vehicle
02/20/2003	FP106	F	3	SR29 at Sunniland Mine entrance	Vehicle
2/22/2003	FP109	M	10+	OSSF north of CR832	Intraspecific Aggression
3/10/2003	UCFP51	M	1.5 to 2.0	I-4; 0.25 miles E of I-75, near Tampa	Vehicle
3/20/2003	UCFP52	M	2 to 3	CR833; 2 miles S CR832, Hendry County	Vehicle
4/4/2003	FP118	F	1	BCSIR; Game Pen	Unknown

Date	Panther ID	Sex	Age	Location	Cause
5/10/2003	FP82	F	6	OSSF	Intraspecific Aggression
5/11/2003	UCFP55	M	1 to 1.5	BCSIR Safari Pen	Unknown
5/12/2003	UCFP56	M	1 to 1.5	BCSIR Safari Pen	Unknown
5/15/2003	UCFP57	F	4 to 6	BCSIR Safari Pen	Unknown
5/17/2003	FP115	F	4 to 5	OSSF - Sick Island	FeLV
5/25/2003	UCFP53	F	2 to 3	SR29; 1.4 miles N CR858, Collier County	Vehicle
6/3/2003	UCFP54	M	8 to 10 mos.	SR29; 1.7 miles N CR858, Collier County	Vehicle
6/19/2003	FP87	F	4	BCNP; 7 miles NNE of Oasis	Intraspecific Aggression
6/28/2003	FP73F1	F	7 yr 10 mos.	BCSIR; Game Pen	Unknown
6/30/2003	UCFP58	F	~1	CR846; 3/4 mile E of Everglades Boulevard	Vehicle
7/12/2003	FP77	F	6	BCSIR Game Pen	Unknown
10/17/2003	FP114	M	1.5	FPNWR; S of Oil Pad Rd. SR29	Intraspecific Aggression
11/2/2003	UCFP59	F	3 to 4 mos.	CR 858; 1.2 miles west of SR 29	Vehicle
11/7/2003	FP86	F	4.5	University of Florida, Gainesville	Euthanasia
12/9/2003	UCFP60	M	~2 to 3	US41; ~ 1 mile east of CR92	Vehicle
12/12/2003	FP91	F	4.5	BCNP; Turner River Unit	Intraspecific Aggression
12/25/2003	UCFP61	F	~2 to 3	CR833; 1.7 miles N CR846 intersection	Vehicle
1/11/2004	UCFP62	F	~7 to 8 mos.	US41 near 40 Mile Bend	Vehicle
2/13/2004	FP122	F	2 to 3	OSSF; NW Wild Cow Island	FeLV
2/26/2004	UCFP63	M	~3.5	I-75; eastbound lane, MM99	Vehicle
3/1/2004	FP85	M	5	ENP	Unknown
3/3/2004	UCFP64	?	?	SR66; ~0.75 miles W of SR635	Vehicle – Injured
4/6/2004	UCFP65	M	~2	SR29; 200 yards N of Bear Island Grade	Vehicle
6/27/2004	UCFP66	M	~3	I-75; 0.5 miles W of Everglades Boulevard, MM93	Vehicle
7/7/2004	FP55	F	~11.5	BCNP	Intraspecific Aggression
7/11/2004	FP120	F	~4	US41, ~750 m W of Turner River Road	Vehicle – Injured
7/22/2004	FP132	M	3 to 3.5	OSSF	FeLV
7/28/2004	FP117	M	27 mos.	0.75 miles S of CR832, ~0.2 miles E. of Wild Cow Grade	Unknown
8/2/2004	K156	M	6 mos.	US41 at Turner River Road	Vehicle
8/17/2004	K94	M	3 yr 3 mos.	I-75; eastbound lane near MM98	Vehicle
9/2/2004	UCFP67	F	< 7 days	FPNWR; Ridge Road	Unknown
9/30/2004	UCFP68	F	3 to 6	SBCNP; N of Oasis Ranger Station	Unknown
10/25/2004	UCFP69	F	2	SR 29; 2.5 miles N of CR 858	Vehicle
11/22/2004	FP59	M	9.4	Just east of Ford Test Track, Collier County	Intraspecific Aggression
12/1/2004	UCFP70	F	1	SR 29 at Owl Hammock Curve	Vehicle

Date	Panther ID	Sex	Age	Location	Cause
12/6/2004	K128	M	2.5	CR 832; 1 mile east of RR grade	Vehicle
1/1/2005	FP126	M	1.6	1/2 mile S CR 846; Sadie Cypress	Intraspecific Aggression
2/4/2005	UCFP71	M	2 to 3	US 41; just east of 11 Mile Road	Vehicle
2/25/2005	UCFP72	M	2	SR 29 near Jerome	Vehicle
4/7/2005	UCFP73	M	7 mos.	CR951 S of Rattlesnake Hammock Road	Vehicle
5/7/2005	FP120	F	5	US41 near Turner River	Vehicle
6/4/2005	UCFP74	M	3	I-95; St. John's/Flagler County line	Vehicle
6/14/2005	FP136	F	4	2 miles NE Burns Lake, BCNP	Spinal trauma
6/19/2005	UCFP75	M	2	SR 29 at Owl Hammock Curve	Vehicle
8/29/2005	K153	M	2 yr 1 mos.	CR951, 1.2 miles south of Davis Blvd.	Vehicle
9/12/2005	FP69	F	8 yr 4 mos.	BCNP – Addition Lands	Septicemia, underlying cause unknown
9/18/2005	UCFP76	M	1	US 41; 1.4 M east of CR 951	Vehicle
12/2/2005	K49	F	7 yr 10 mos.	SR 29; 1 mile N Wagon Wheel Road	Vehicle
1/14/2006	FP70	F	8 yr 7 mos.	US 41 near Turner River	Vehicle
1/15/2006	UCFP77	F	2 to 3	BCSIR; west of Swamp Safari	Intraspecific Aggression
1/25/2006	UCFP78	M	9 mos.	CR846; 1 mile W of CR858	Vehicle
1/26/2006	UCFP79	F	2	CR846; 2 miles N of CR858 - near Collier County Fairgrounds	Vehicle
2/2/2006	UCFP80	F	2	Card Sound Road, Dade County	Vehicle
2/27/2006	UCFP81	M	2	I-75; Ft. Myers, between exits 137-138	Vehicle
2/27/2006	UCFP82	U	?	0.2 M west of SR 29, Hendry County	Unknown - skeletal remains
3/9/2006	FP104	M	5.5	BCNP	Septicemia, underlying cause unknown
3/11/2006	UCFP83	M	3	1 M south of Corkscrew Rd., Flint Pen Strand	Unconfirmed Intraspecific Aggression
3/22/2006	FP129	F	5	BCNP	Unknown
4/14/2006	UCFP84	M	3 to 4	I-4, SW of Orlando	Vehicle
6/5/2006	UCFP85	M	3 to 4	CR 832; 3 miles east of OK Slough SF	Vehicle

<sup>a</sup> BCNP=Big Cypress National Preserve; BCSIR = Big Cypress Seminole Indian Reservation; ENP = Everglades National Park; FPNWR = Florida Panther National Wildlife Refuge; FSSP = Fakahatchee Strand State Preserve; OSSF = Okaloacoochee Slough State Forest; PSSF = Picayune Strand State Forest/Wildlife Management Area.

# Florida Panther Research and Management Trust Fund

## **Florida Panther License Plate Annual Use Fee**

The Florida Panther specialty license plate is one of many options available to Florida residents when registering vehicles & trailers for street use. Section 320.08056(4)(e), Florida Statutes sets the specialty plate annual use fee collected for the Florida panther license plate to be \$25. The law goes on to specify how the annual use fee is to be distributed in section 320.08058(5)(b), Florida Statutes:

1. **Eighty-five percent must be deposited in the Florida Panther Research and Management Trust Fund (FPRMTF) in the Fish and Wildlife Conservation Commission to be used for education and programs to protect the endangered Florida panther.**
2. Fifteen percent, but no less than \$300,000, must be deposited in the Florida Communities Trust Fund to be used pursuant to the Florida Communities Trust Act. The Legislature further specifies funds deposited in the Florida Panther Research and Management Trust Fund be spent only for the following purposes (s. 372.672(2), F.S.):
  - a. To manage and protect existing Florida panther populations by increasing panther food sources where food is a limiting factor, determining conflicts between public use and panther survival, maintaining sufficient genetic variability in existing populations, and undertaking management and enforcement activities that protect panther habitat.
  - b. To educate the public concerning the value of the panther and the necessity for panther management.
  - c. To reestablish Florida panthers into areas of suitable habitat, where feasible, by assessing the necessity of a captive breeding program for purposes of reintroduction of the panthers into the suitable habitat; selecting potential sites for reintroduction and investigating associated human sociological aspects; and assessing the potential for panther habitat acquisition.

## **Research and Management Objectives Funded Via the FPRMTF**

### Division of Habitat and Species Conservation and Fish and Wildlife Research Institute

Funds deposited in the Florida Panther Research and Management Trust Fund (FPRMTF) are appropriated by the Legislature to support a number of ongoing panther projects within the FWC's Division of Habitat & Species Conservation (HSC) and within the Fish and Wildlife Research Institute (FWRI). HSC and FWRI have positions dedicated to panther work, and these staffs work cooperatively as an integrated team. The following projects currently receive monies from the trust fund:

**Florida Panther Genetic Restoration and Management** - Restore historical levels of genetic diversity by imitating natural population processes, and develop a long-term management plan for maintaining a healthy population of Florida panthers. In the spring of 1995, the FWC released eight female puma (*Puma concolor*) from Texas into areas occupied by Florida panthers in order to offset the potential deleterious effects of inbreeding and to diversify the panther population's genetic composition. None of these female Texas puma remain in the population today, but FWC continues to monitor the effects of this genetic infusion and its impact on the panther population.

- Take genetic samples from all panthers encountered (live capture, recovery of panther carcasses, kittens handled at dens) for on-going assessments of the panther population genetic structure;
- Work closely with our partners at the National Cancer Institute to process and analyze results of genetic work;
- Track occurrence of cryptorchidism, kinked tails, atrial septal defects, and male reproductive fitness measures as measures of genetic restoration success;
- Monitor demographic parameters such as survivorship, mortality, and fecundity.

**Florida Panther Biomedical Research and Management** – The objectives of Biomedical Research and Management are to monitor for and manage infectious, toxic, genetic, and other disease threats of population significance, and to provide for the emergency treatment and care of individual free-ranging panthers at capture. Biomedical Research and Management also coordinates with cooperating institutions to rehabilitate injured and orphaned panthers as well as care for panthers permanently in captivity.

- Provide high quality veterinary medical care during capture and immobilization of free-ranging Florida panthers;
- Research, monitor, and evaluate the health of free-ranging panthers and provide medical care when indicated;
- Collect biomedical data to assist with the evaluation of the genetic restoration program;
- Oversee the care of panthers held in captivity;
- Act as liaison with other resource agencies, universities, and private individuals involved with panther biomedical research;
- Make recommendations concerning appropriate management strategies that may ensure the health and survival of the

Florida panther;

- Conduct or coordinate necropsies of dead panthers.

**Florida Panther Research and Management** - FWC is committed to using the best scientific information available to advance Florida panther conservation. Following are current FWC activities that will help advance that knowledge base, identify gaps in the knowledge base that need to be addressed, or to apply that knowledge to deal with management issues:

- Capture Florida panthers throughout their range to deploy Global Positioning System (GPS) radio-collars that will lead to a more complete assessment of spatial and habitat needs;
- Initiate analyses that will incorporate current and historical survival data to quantify adult and kitten survival of panthers pre and post genetic restoration;
- Continue to assess current innovations in GPS radio-collar technology to determine battery life, dependability, and durability of varied brands. Additionally, determine the utility and reliability of remote data download of GPS data from collars in order to obtain "realtime" data that may reduce our dependency on aerial telemetry data collection;
- Assess the accuracy of ageing panthers in the field via comparisons with data collected from cementum annuli analyses of teeth collected from known aged panthers. Accurate ageing of panthers will allow for more rigorous delineations of animals into appropriate age groups for demographic analyses.
- Conduct a research prioritization process using recommendations we received from a Florida Panther Scientific Review Team commissioned by FWC and the United States Fish and Wildlife Service (USFWS) in 2002;
- Complete a study entitled "Use of least cost pathways to identify key highway segments for Florida panther conservation" that will benefit panther conservation planning as current road networks are improved or new roads are constructed;
- Complete a study entitled "Feasibility of using remote cameras to survey Florida panthers" that would benefit panther conservation via the development of non-invasive monitoring techniques that may provide population trend data.
- Continue work with USFWS and the National Park Service to finalize the "Guidelines for Living with Florida Panthers and Interagency Florida Panther Response Plan";
- Assess the utility of organizing an FWC panther genetics group responsible for analyzing panther samples that require immediate examination. This group would be based out of FWRI in St. Petersburg and would be capable of species identification, sex identification, sequencing analysis, and individual identification via microsatellite genotyping. An FWRI facility would provide a backup repository for tissue samples stored elsewhere.

**Protected Species Coordination** - Coordinate the protected species program and serve as the Commission's principle representative in protected and endangered species matters. This includes administering the Section 6 Cooperative Agreement and the required reporting of emergency handlings of panthers.

**Wildlife Disease Risk Assessment** - Collect and analyze biomedical data to ascertain population risk when disease, parasites, or environmental contaminants are suspected of causing mortality, morbidity, or low production in wildlife populations in Florida, and to make recommendations on actions to alleviate the problem or for further research.

**Wildlife Research Laboratory Operations** - Administer a portion of the operations of the Wildlife Research Laboratory in Gainesville that support panther staff.

### ***FPRMTF Allocations to the Division of Law Enforcement***

The 1996 Florida Legislature appropriated \$1.35 million from the Florida Panther Research and Management Trust Fund for Division of Law Enforcement activities. This continuation funding supports law enforcement protection of panther habitat and assistance in panther research and management.

The division dedicates a portion of the time and resources of approximately 30 wildlife officers in the nine-county core of existing and potential panther habitat to their panther protection program. The counties included are Charlotte, Collier, DeSoto, Glades, Hardee, Hendry, Highlands, Lee and Sarasota. The panther protection program provides targeted law enforcement patrol, intensified landowner coordination, statewide investigation of panther sightings, panther/vehicle collisions and depredation reports, landowner interviews in proposed panther reintroduction areas, assistance to Division of Habitat and Species Conservation for panther research and management, education and training, and aviation support.

### ***FPRMTF Allocations to Administrative Overhead***

A share of administrative overhead is assessed the Florida Panther Research and Management Trust Fund to support agency central administrative activities such as: executive direction, budgeting, purchasing, property management, accounting,

information technology support and central services. An additional service charge assessment is required by statute which transfers 7.3% of the license plate annual use fee to General Revenue for statewide governmental services.

### ***FPRMTF Allocations to the Florida Communities Trust***

The Florida Communities Trust (FCT) is a non-regulatory agency housed within the Department of Community Affairs. It was established to assist local governments in bringing local comprehensive plans to compliance and implementing the goals, objectives, and policies of the conservation, recreation and open space, and coastal elements of local comprehensive plans. It also assists local governments in conserving natural resources and resolving land use conflicts (s. 380.502, F.S.).

The Florida Communities Trust was originally funded through its own license plate annual use fee. In 1990, the FCT license plate statute was amended to become the Florida Panther license plate. Fifteen percent of the fee was retained for the FCT to continue funding for its operations. Inquiries for further information of FCT funding and accomplishments may be directed to the Department of Community Affairs at 850/922-2207.

## FPRMTF: FUNDING INFORMATION AS OF 30 JUNE 2006

<b>Fund Balance July 1, 2005</b>	<b>\$358,382</b>
 <b>Fiscal Year 2005-2006 Actual Revenue</b>	
Panther License Plate Annual Use Fees	\$ 1,889,489
Interest Earnings	3,080
Miscellaneous	57,815
<b>Total Actual Revenue</b>	<b><u>\$ 1,950,385</u></b>
 <b>Fiscal Year 2005-2006 Appropriations</b>	
Panther Management	\$546,210
Panther Research	320,742
Law Enforcement	1,422,832
Administration	0
Service Charge to General Revenue	147,652
Reversions	(213,859)
<b>Total Appropriations</b>	<b><u>\$2,223,577</u></b>
 <b>Projected Fund Balance June 30, 2006</b>	
	<b>\$ 85,190</b>