

**Annual Report on the Research and Management of  
Florida Panthers: 2007-2008**



**Florida Fish and Wildlife Conservation Commission**

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## **FWC Contributors and Contact Information:**

The compilation of this report was the result of the combined efforts of multiple FWC staff members currently working on the Florida Panther Project in order to meet the reporting requirements of the U.S. Fish and Wildlife Service pursuant to Endangered Species Collection Permit TE051553-2. Further analyses of these data will be conducted and results published in the scientific literature by the FWC and collaborators. Persons interested in obtaining the most current data should contact the FWC at:

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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 2007 through 30 June 2008 related to the Florida panther (*Puma concolor coryi*). In some cases, data (e.g., diagnostic test results) are presented from samples collected in prior fiscal years due to lag times involved with processing samples. Historic data are included as appendices. 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 (EVER) of the National Park Service (NPS). BCNP and EVER have located radiocollared panthers by plane within their respective park boundaries for 19 and 22 years respectively, and resulting data have been incorporated into a 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 radiocollars 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.

During 56 field days, FWC staff captured 7 Florida panthers. These included 6 previously uncollared panthers and one existing radiocollared panther captured for collar replacement.

Telemetry data were collected on 36 radio-collared Florida panthers in southern Florida during the reporting period by FWC, BCNP and EVER staff. Eight panther dens were sampled by FWC and NPS staff during the study period resulting in the documentation of 21 (14♂, 6♀, 1 unknown) neonate kittens. Kittens handled at their natal dens were permanently marked with subcutaneous transponder chips, and tissue samples were collected for genetic analyses. A total of 164 panthers have been radiocollared since 1981, and 273 neonate kittens have been handled at dens since 1992. Twelve adult

free-ranging panthers died during the reporting period including six (4♂, 2♀) radio-collared and 6 (3♂, 3♀) uncollared panthers. Five (3♂, 2♀) panthers died from vehicular trauma and 3 panthers (2♂, 1♀) died from intraspecific aggression. Three panthers (1♂, 2♀) died from undetermined causes and one (1♂) died from pneumonia. Additionally, four neonates from two different litters (2 in each litter) were discovered dead and partially consumed in or near the den. Also, 1 captive adult panther from the captive breeding program was euthanized due to chronic renal failure. Human-panther conflicts included 12 depredations (11 hobby livestock and 1 pet). Five cases of humans interacting with panthers were reported.

## Introduction

Florida panthers are endangered by a combination of small population size, isolation, and loss of habitat (Kautz et al. 2006; 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 exists on approximately 10,000 km<sup>2</sup> (2.5 million acres) of habitat in south Florida (Kautz et al. 2006). A recent population count delineated the presence of 117 adult and subadult panthers (McBride et al. 2008 *in press*). 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). The role of social and genetic factors has only recently been examined as modern techniques from field biology and molecular genetics have become available. Recovery of the Florida panther is a complex goal; nevertheless, panthers face issues that commonly affect rare and endangered species. A unique opportunity exists to implement conservation and management strategies for Florida panthers and evaluate results that will benefit 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. hipolestes* 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 an increased 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 1990s. A plan for genetic introgression 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 initially captured by Roy McBride. Five of the 8 Texas pumas produced litters and a minimum of 20 F<sub>1</sub> intergrade kittens were born in Florida (Land et al. 2004). None of the original Texas females remain in the wild today.

Assessment of the genetic introgression project is an ongoing objective of FWC and our collaborators at BCNP, EVER 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 the genetic introgression project will undoubtedly have ramifications on the implementation of future management strategies for panthers and potentially far reaching implications to varied 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; using GPS data sets to assess prey-selection, kill-rates, and distances traveled; movement patterns of panthers along the urban-wildland interface; evaluating the utility of new GPS collar technology; a collaborative project with the University of Florida to develop a population viability model for panthers; and a compilation of female reproductive

histories. Our overall research goal is to complement historical data sets with ongoing, objective driven research to provide the information necessary to manage and conserve panthers. 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 and recovery of the Florida panther in South Florida.

## **Acknowledgements**

FWC's panther research and management activities are funded entirely 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, Cougar McBride (Livestock Protection Company), and Emmett Blankenship. Collaborators at the National Park Service that provided assistance with aerial telemetry and/or field support include Mario Alvarado, Sonny Bass, Deborah Jansen, Annette Johnson, John Kellam, Lori Oberhofer, and Steve Schulze. We thank the CA Pound Laboratory for consultation on panther necropsies. We would also like to extend our appreciation to the staffs at BCNP, Corkscrew Regional Ecosystem Watershed (CREW), Corkscrew Swamp Sanctuary (CSS), EVER, Florida Panther National Wildlife Refuge (FPNWR), Fakahatchee Strand Preserve State Park (FSPSP), Lee County Port Authority (LCPA), Lee County Solid Waste Department, 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 EVER. The area includes large blocks of low-lying public lands such as CREW, EVER, BCNP, FSPSP, PSSF, 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 EVER. The BCNP AMA encompassed the area within the BCNP boundary south of I-75. The EVER AMA encompassed the area within the EVER boundary.

## **Methods**

### ***Monitoring***

FWC staff was responsible for capturing and fitting panthers with radio-collars, handling neonates at dens, recovering carcasses from the field and roadside within the FWC and EVER 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. EVER staff was responsible for obtaining aerial relocations 3 times per week within the EVER AMA. Responsibility of conducting aerial relocations is coordinated between agencies for those panthers whose home ranges overlap AMAs.

### ***Capture***

Free-ranging Florida panthers were captured using trained hounds. Panthers were either treed or bayed on the ground and were 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 supplement anesthesia 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) were 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, a 4 mm skin biopsy was aseptically collected from the external pinnae of each ear 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 was 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***

Depending on previous vaccine history and titers at previous capture, 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™ 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). Depending on body condition, captured panthers were dewormed with ivermectin (0.1 mg/kg, Ivomec®, Merial Limited, Iselin, New Jersey) and praziquantel (3.75 mg/kg, CestaJect™, 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. A 2 mm biopsy sample was collected from the distal end of each ear. A triple antibiotic ointment was applied to each biopsy collection site. Ear biopsy tissue samples were stored in biopsy transport media.

## ***Radio-instrumentation***

Captured adult and subadult panthers were fitted with a VHF (Advanced Telemetry Solutions, Inc., Isanti, Minnesota) or VHF/GPS (Televilt [Followit], Lindesberg, Sweden) radio-collar and monitored three times weekly (M, W, F) from a Cessna 172 fixed-wing aircraft. Locations collected by FWC were recorded in Universal Transverse Mercator coordinate system using customized software that incorporates positional information from digital orthophotographic quarterquads (geodetic referenced to North American Datum 83) loaded onto a Panasonic Toughbook Tablet PC (Panasonic Corporation of

North America, Secaucus, New Jersey) linked to a hand-held GPS unit. 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). One panther was necropsied at the U.S. Fish and Wildlife Service National Forensic Laboratory (Ashland, Oregon). 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). Tissue 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. Necropsied panthers were tested for rabies by immunofluorescent antibody test 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.

## **Results and Discussion**

### ***2007-2008 Panther Capture Season***

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

Telemetry data were collected on 36 radio-collared Florida panthers in southern Florida during the reporting period by FWC, BCNP and EVER staff (Figure 1). Six new panthers were added to the radiocollared population monitored by FWC during the 2007-2008 capture season. One panther with a GPS radiocollar approaching the end of its battery life was recaptured and fitted with a VHF collar. Radio contact was lost with male panthers FP137 (4 August 2007), FP143 (30 July 2007), FP147 (29 August 2007), FP154 (2 April 2008), FP159 (2 May 2008) due to malfunctioning GPS collars. Additionally, the breakaway mechanisms associated with GPS collars deployed on female panther FP110 and male FP156 were activated and the collars were subsequently recovered by FWC staff on 27 March and 30 June 2008, respectively. Minimum convex polygon home ranges for panthers monitored by FWC

are depicted in Figures 2-3. A complete historical compilation of data associated with the 164 panthers radio-collared since 1981 can be found in Appendix I.

## **Capture Results**

Our capture efforts commenced on 6 November 2007 and continued through 29 February 2008. Fifty-six field days were divided between the PSSF, CREW, FPNWR, OSSF, EVER, LCPA, private lands, and CSS (14, 13, 13, 5, 5, 3.5, 2, and 0.5 days respectively). Seven Florida panthers were captured by FWC staff (Table 1). Six previously uncollared panthers (FP155, FP156, FP157, FP158, FP159, FP160) were added to the study population. A radiocollar was replaced on one panther (FP113) because the battery was nearing exhaustion.

We achieved the following objectives during our capture work in 2007-2008: 1) captured 6 new panthers along the western edge of their range (CREW Wildlife and Environmental Areas, Picayune Strand State Forest and Wildlife Management Area) to evaluate persistence and residency feasibility along the urban-wildland interface; 2) captured a panther along the northern boundary of the breeding population to assess movement patterns and potential corridors utilized by panthers to move north across the Caloosahatchee River; 3) continued testing GPS-GSM technology to monitor panthers in order to help alleviate costs, biases, and hazards associated with aerial telemetry monitoring and to determine the reliability, durability, and cost-efficiency of this technology on Florida panthers; and 4) continued to deploy GPS collars across a large part of the range of panthers to collect locational data throughout the diel period to comprehensively assess resource selection by panthers.

## **Biomedical Summaries of Florida Panthers Handled in 2007-2008**

One female Florida panther (FP160) suffered massive bee-sting envenomation during capture on 6 February 2008. FP160 descended from a tree after initially being darted and subsequently bayed on the ground beneath a bee hive. The panther received approximately 150 stings, primarily to the face and suffered a suspected sting and superficial laceration to the right cornea. Intravascular hemolysis was also noted after centrifugation of blood samples. The panther was treated with antibiotics, parenteral steroids,

antihistamine, and triple antibiotic ophthalmic ointment. Recovery was uneventful and the movements of FP160 appear normal based on radio-telemetry. The eye will be re-examined during the 08-09 capture season. A sample of bees was identified by the Florida Department of Agriculture as 83% Africanized, and the hive was destroyed. No other significant capture-related injuries occurred this capture season. All panthers captured by FWC for radio-instrumentation were in fair to excellent condition, and no panthers tested positive for FeLV.

Significant findings at necropsy included a 5.5 mm atrial septal defect in UCFP106. The defect was not believed to impair the health of the panther.

Archived fat samples were tested for PCB (congeners PCB 8, PCB 18, PCB 28, PCB 44, PCB 52, PCB 66, PCB 77, PCB 101, PCB 105, PCB 118, PCB 126, PCB 128, PCB 138, PCB 153, PCB 170, PCB 180, PCB 187, PCB 195, PCB 206) and organochlorine (Aldrin, Alpha-BHC, Beta-BHC, Delta-BHC, Gamma-BHC (Lindane), Cis-Chlordane, Cis-Nonachlor, Trans-Chlordane, Trans- Nonachlor, DDD-o,p, DDD-p,p', DDE-o,p, DDE-p,p', DDT-o,p, DDT-p,p', Dieldrin, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Heptachlor, Heptachlor Epoxide, Hexachlorobenzene, Mirex, Methoxychlor, Toxaphene) and elevated levels (up to 50 ppm) of total PCBs and DDE (up to 130 ppm) were seen in several Florida panthers from the Everglades region.

## **Captive Florida Panthers**

FP207, a 16 year-old male, was euthanized at Lowry Park Zoo on 10 September 2007 due to chronic renal failure. One orphaned kitten (K255) was brought into captivity at Lowry Park Zoo by the BCNP Capture Team (NPS) on 5 August 2007. Other panthers currently in captivity include: FP79 (12 year old male) at Busch Gardens, FP60 (14 year-old male) at the Tallahassee Museum, FP204 (18 year-old female) at White Oak Conservation Center, and K180 and K181 (3.5 year-old female siblings) and FP210 (17 year-old male) at Jacksonville Zoo.

## Reproduction

FWC and NPS staff handled 21 kittens (14 males, 6 females, and 1 unknown) from 7 females at 8 dens from 1 July 2007 to 30 June 2008 (Table 2). This includes 2 failed dens that contained 4 dead kittens (2 males, 1 female, and 1 unknown). FP110 denned twice during the fiscal year; kittens produced during her August 2007 denning probably died as evidenced by her subsequent den in December 2007. We were unable to handle FP110's December litter. Mean litter size for these dens was 2.6 (SE = 0.32,  $n = 8$ , range = 2- 4). A historical compilation of data collected by FWC and NPS on Florida panther kittens handled at dens (1992-2008) and known dens of radio-collared females (1985-2008) can be found in Appendix II and III, respectively.

## Florida Panther Mortality

A total of 12 free-ranging panther mortalities, including 6 (4♂, 2♀) radio-collared and 6 (3♂, 3♀,) uncollared panthers, were documented between 1 July 2007 and 30 June 2008 (Table 3). Vehicular trauma accounted for 5 (3♂, 2♀) panther mortalities while intraspecific aggression resulted in 3 (2♂, 1♀) mortalities. Three panthers (1♂, 2♀) died from undetermined causes. Male panther FP131 died of pneumonia.

As previously mentioned, 4 kittens from 2 different litters were found dead at their respective den sites. Two kittens (♂K259 and K260-sex unknown) of female panther FP151 appeared to have been killed and partially consumed by a black bear. Kittens ♀K268 and ♂K269 also were found dead at their den and partially consumed. Trauma documented on these two kittens resulted from predation and was potentially associated with intraspecific aggression. A historical compilation of all recorded panther mortalities can be found in Appendix IV.

## Human-Panther Conflicts

Dealing with human-panther conflicts and depredations is a multi-agency (FWC, NPS, USFWS) effort that has led to the creation of a protocol entitled "[\*Guidelines for Living with Florida Panthers and the Interagency Florida Panther Response Plan\*](#)" which is scheduled to be published in the Federal Register in the latter half of 2008. Once published, this will be the official guiding document when

dealing with human-panther conflicts. Panther depredations on hobby livestock and pets and panther-human interactions have risen in South Florida due to a combination of an increase in the human population, particularly along the expanding urban-wildland interface, and a coinciding increase in the Florida panther population.

A depredation event is classified as when domestic livestock or pets are preyed upon by a panther. Twelve depredation events were reported between 1 July 2007 and 30 June 2008. All depredation events were investigated and a panther was confirmed as being involved in 10 of the 12 events. Although mitigating circumstances prevented confirmation in two cases, a panther was suspected in both instances based on strong circumstantial evidence. Eight of the 12 reports sustained hobby livestock loss while the remaining 4 were non-fatal attacks. Repeat depredations occurred at two residences before changes in husbandry practices were implemented. Uncollared panthers were responsible for all depredations except one. Male FP146 is suspected in one case because he was resting <400 m from where a goat was killed and he was photographed returning to the same pasture the following night. Animals preyed upon by panthers included goats, sheep, and a fallow deer. Animals that were attacked but survived included a goat, a shepherd-mix dog, a llama, and a 1-month-old calf.

Four “encounters”, which are defined as the unexpected direct meeting between a human and a panther, were reported. The first involved a 1.5-year-old kitten of a radiocollared female in EVER that was discovered resting in an oak tree next to a popular hiking trail. The trail was temporarily closed and the panther left the area without incident. Similarly, a panther was treed by neighborhood dogs in a rural residential area in Golden Gate Estates. The area was cleared of people and dogs and the panther came down on its own and left the area. The other two encounters involved people meeting panthers while walking on boardwalks. In EVER, a couple rounded a junction at the Mahogany Hammock boardwalk and witnessed a panther staring off across the sawgrass. The couple moved away from the boardwalk intersection and the panther ran by. At the CREW Corkscrew Marsh Unit, a lone hiker sighted a panther as they unwittingly walked towards each other on a boardwalk. The individual slowly retreated in the direction from which he entered the boardwalk while the panther retreated in the opposite direction.

An “incident” is defined as an unexpected direct interaction between a human and a panther that includes additional risk criteria. This can include instances when the panther does not retreat when humans take aggressive or offensive actions or if the panther shows signs of excessive curiosity and following behavior. One situation met these criteria. An individual was conducting a song bird survey on the FPNWR when he noticed a panther approaching to within 8 meters. The researcher banged on a clipboard, yelled, and hit the ground with a palm frond and the panther retreated 3-4 meters and hid behind some brush. The panther was subsequently noticed following the person for about 30-50 meters as he walked away. After several minutes the panther was no longer observed.

## **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 Drs. Steve O’Brien, Warren Johnson, and Melody Roelke at the National Cancer Institute (NCI) in Frederick, Maryland. DNA from tissue samples collected from panthers captured during the 2007-2008 capture season have been extracted and are currently being amplified with the assistance of a laboratory technician at NCI. These genotypes 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. We expect to complete analyses and submit our findings to peer-reviewed journals in the upcoming fiscal year. Manuscripts will focus on tracking differences between pre and post-introgression cohorts of panthers. Topics will include, but are not limited to: 1) an overall assessment of genetic introgression; 2) delineation of pedigrees; 3) accounts of female reproductive histories; and 4) estimation of demographic parameters (survival, cause-specific mortality, fecundity).

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\* Authors in bold represent current FWC panther staff.

**Table 1. Florida panther captures during the 2007-2008 Florida Fish and Wildlife Conservation Commission’s capture season (6 November 2007 to 29 February 2008).**

<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>
FP155	M	29 Nov 2007	Private land	2.5 <sup>b</sup>	115 <sup>b</sup>	GPS – Televilt Tellus GSM	Initial collaring
FP156	M	7 Dec 2007	PSSF	2.5 <sup>b</sup>	122 <sup>b</sup>	GPS – Televilt Tellus GSM	Initial collaring
FP157	M	19 Dec 2007	LCPA	3 <sup>b</sup>	130 <sup>b</sup>	GPS – Televilt Tellus GSM	Initial collaring
FP158	F	21 Jan 2008	PSSF	2.5 <sup>b</sup>	72	VHF - ATS	Initial collaring
FP159	M	29 Jan 2008	CREW Flint Pen Strand Unit	5-6 <sup>b</sup>	140	GPS – Televilt Tellus	Initial collaring
FP160	F	5 Feb 2008	CREW Corkscrew Marsh Unit	5 <sup>b</sup>	102	GPS – Televilt Tellus GSM	Initial collaring
FP113	F	20 Feb 2008	FPNWR	5 yr. 10 mo.	80	VHF - ATS	Recollar

<sup>a</sup>CREW=Corkscrew Regional Ecosystem Watershed, FPNWR=Florida Panther National Wildlife Refuge; LCPA=Lee County Port Authority Mitigation Area; PSSF=Picayune Strand State Forest/Wildlife Management Area.

<sup>b</sup> Age or weight estimated.

**Table 2. Neonate kittens handled at Florida panther dens by the Florida Fish and Wildlife Conservation Commission and the National Park Service from 1 July 2007 to 30 June 2008.**

<b>Dam ID</b>	<b>Kitten ID</b>	<b>Sex<sup>a</sup></b>	<b>Den location<sup>b</sup></b>	<b>Date handled</b>	<b>Estimate age in days</b>	<b>Actual weight (grams)<sup>c</sup></b>	<b>Kinked tail<sup>a</sup></b>
FP150	K253	M	SBCNP	7/20/2007	18	1589	Y
	K254	F	SBCNP	7/20/2007	18	1220	N
	K255	F	SBCNP	7/20/2007	18	1334	N
	K256	F	SBCNP	7/20/2007	18	624	N
FP110	K257	M	OSSF	8/10/2007	13-15	1200	N
	K258	M	OSSF	8/10/2007	13-15	1050	N
FP151	K259	M	SBCNP	8/27/2007	17-20	NR	U
	K260	U	SBCNP	8/27/2007	17-20	NR	N
FP107	K261	M	FPNWR	9/25/2007	10-14	750	Y
	K262	M	FPNWR	9/25/2007	10-14	890	Y
	K263	M	FPNWR	9/25/2007	10-14	750	Y
FP151	K264	F	SBCNP	3/4/2008	21	1844	N
	K265	M	SBCNP	3/4/2008	21	1816	N
FP140	K266	M	FPNWR	5/2/2008	7	580	N
	K267	M	FPNWR	5/2/2008	7	580	N
FP162	K268	F	SBCNP	5/23/2008	14	NR	N
	K269	M	SBCNP	5/23/2008	14	NR	N
FP158	K270	F	CSSP	6/7/2008	14-17	790	N
	K271	M	CSSP	6/7/2008	14-17	850	N
	K272	M	CSSP	6/7/2008	14-17	950	N
	K273	M	CSSP	6/7/2008	14-17	660	N

<sup>a</sup> U = status undetermined

<sup>b</sup> CSSP = Collier-Seminole State Park; FPNWR = Florida Panther National Wildlife Refuge; OSSF = Okaloacoochee Slough State Forest; SBCNP = Southern Big Cypress National Preserve (south of I-75 and east of SR29).

<sup>c</sup> NR = not recorded

**Table 3. Verified free-ranging Florida panther mortalities recorded between 1 July 2007 and 30 June 2008. Data collected by FWC and BCNP staff. Causes of death include hit-by-car (HBC), intraspecific aggression (ISA), natural (NAT), and unknown (UNK). The presence of atrial septal defects (ASD) and other biomedical and morphometric data are also noted. Ages are in years or weeks (wk). Some characteristics were not determined (nd) or not applicable (NA) to specific panthers.**

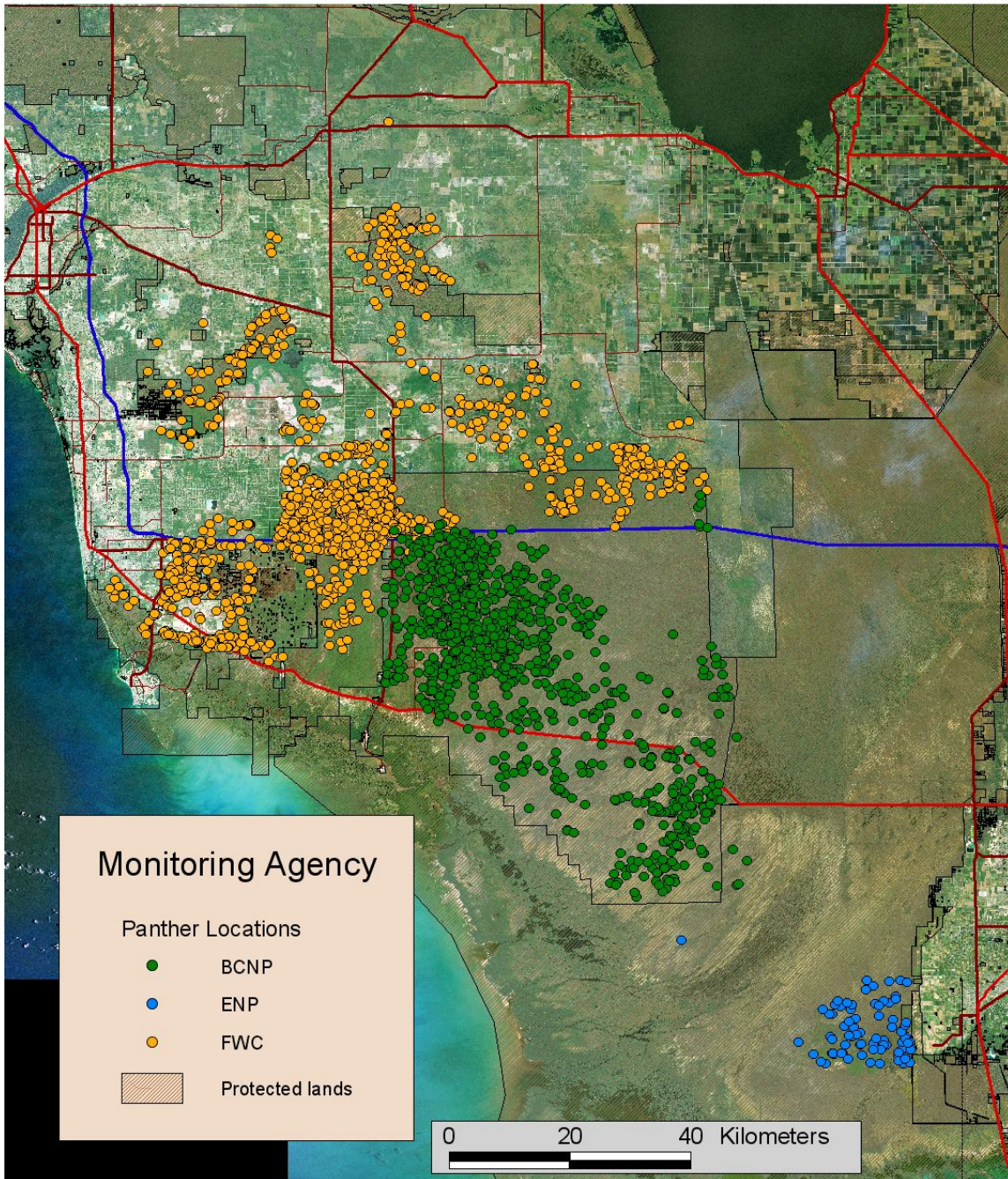
Panther ID	Sex	Date deceased	Cause	Location <sup>a</sup>	Age <sup>b</sup> (yr)	Weight (lbs.)	Kinked tail	Cowlick	ASD	Splenic cleft	Testes	Rabies IFA <sup>c</sup>	Significant necropsy results
FP103	F	8/2/2007	ISA	BCNP-TR	7	UNK	No	No	UNK	UNK	NA	Nt	Skeletal remains recovered.
FP127	M	3/14/2008	ISA	BCNP-AL	6	104	No	No	No	Yes	2	U	Bullet fragments embedded in occipital crest of skull and in subcutaneous tissues of the neck and shoulders. Determined to be an old injury and not associated with the cause of death.
FP128	F	9/27/2007	UNK	BCSIR-Game Pen	7.25	UNK	No	Yes	UNK	UNK	NA	Nt	Carcass heavily scavenged. Necropsied by USFWS lab.
FP131	M	4/16/2008	NAT	Golden Gate, Collier Co.	9	121	Yes	No	No	Yes	2	Nt	Pneumonia likely secondary to idiopathic tracheal polyps. Necropsied at Disney's Animal Kingdom.
FP138	M	5/12/2008	UNK	BCNP	7	65	Yes	No	No	UNK	2	Nt	Bullet fragments embedded in the right 7 <sup>th</sup> rib and adjacent tissues and chronic fractures of ribs 4-6 were found. The injuries occurred months to years earlier and were not believed to be associated with the cause of death.
FP157	M	4/9/2008	ISA	CREW	3	Nd	Yes	No	UNK	UNK	UNK	Nt	Carcass heavily scavenged, autolyzed.
K259	M	8/27/2007	NAT	BCNP	3 wk	UNK	UNK	UNK	UNK	UNK	NA	Nt	Suspected black bear predation at den, sibling of K260. Partial remains recovered.
K260	UNK	8/27/2007	NAT	BCNP	3 wk	UNK	No	UNK	UNK	UNK	NA	Nt	Suspected black bear predation at den, sibling of K260. Partial remains recovered.
K268	F	5/23/2008	NAT	BCNP	2 wk	2.18	No	UNK	No	UNK	NA	Nt	Predation or ISA at den site, sibling of K269.
K269	M	5/23/2008	NAT	BCNP	2 wk	UNK	No	UNK	UNK	UNK	NA	Nt	Predation or ISA at den site, sibling of K268. Missing ½ body (thorax).
UCFP102	M	9/12/2007	HBC	I-75, Collier Co.	2	71	Yes	Yes	No	UNK	2	Nt	Hit inside of fencing on I-75 east of SR 29.
UCFP103	M	3/9/2008	HBC	Pine Ridge Rd, Collier Co.	2-3	105	No	Yes	No	Yes	2	N	Domestic cat remains found in stomach.

<b>Panther ID</b>	<b>Sex</b>	<b>Date deceased</b>	<b>Cause</b>	<b>Location<sup>a</sup></b>	<b>Age<sup>b</sup> (yr)</b>	<b>Weight (lbs.)</b>	<b>Kinked tail</b>	<b>Cowlick</b>	<b>ASD</b>	<b>Splenic cleft</b>	<b>Testes</b>	<b>Rabies IFA<sup>c</sup></b>	<b>Significant necropsy results</b>
UCFP104	F	4/12/2008	HBC	SR29, Collier Co.	1.5	62	No	Yes	No?	UNK	NA	?	Necropsied at VMTH, University of Florida
UCFP105	F	UNK	NAT	FSPSP	5-6	UNK	UNK	UNK	UNK	UNK	NA	Nt	Skeletal remains were found wedged between two trees. Panther likely fell, suffered spinal trauma, and eventually died.
UCFP106	M	5/4/2008	HBC	Lehigh Acres, Lee Co.	2	84	Yes	No	Yes	Yes	1	N	A 5.5 mm diameter ASD was present, the right testis was in inguinal canal.
UCFP107	F	5/22/2008	HBC	CR951, Collier Co.	2	64	No	No	No	Yes	NA	N	Hit while crossing CR951 from east to west towards Rookery Bay

<sup>a</sup>BCNP-AL = Big Cypress National Preserve Addition Lands; BCNP-TR = Big Cypress National Preserve-Turner River Unit; BCSIR = Big Cypress Seminole Indian Reservation; FPNWR = Florida Panther National Wildlife Refuge; FSPSP = Fakahatchee Strand Preserve State Park.

<sup>b</sup>Ages of panthers followed by \* were of known age due to initial handling and marking at the natal den.

<sup>c</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 2007 to 30 June 2008. Data collected by FWC and NPS.**

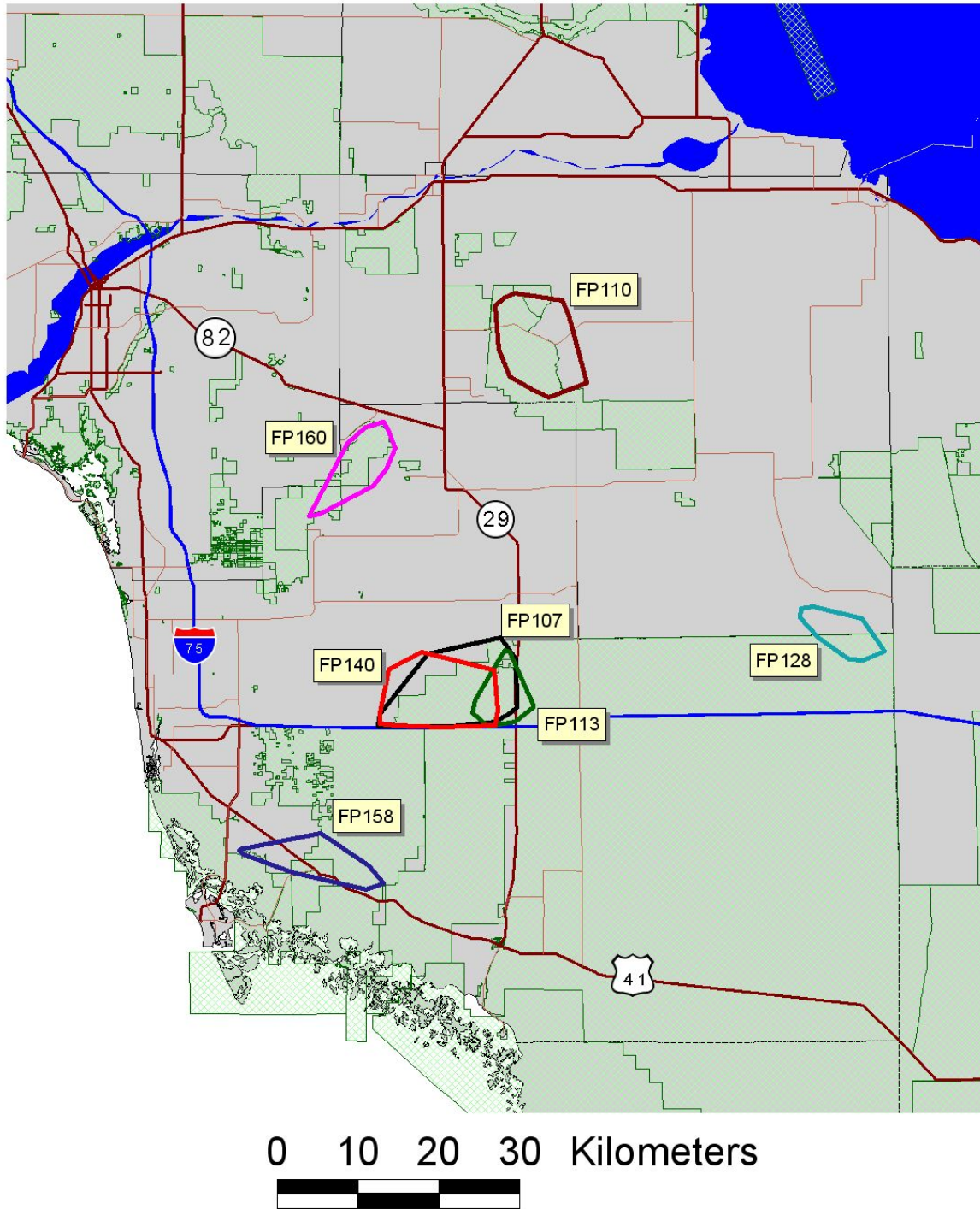
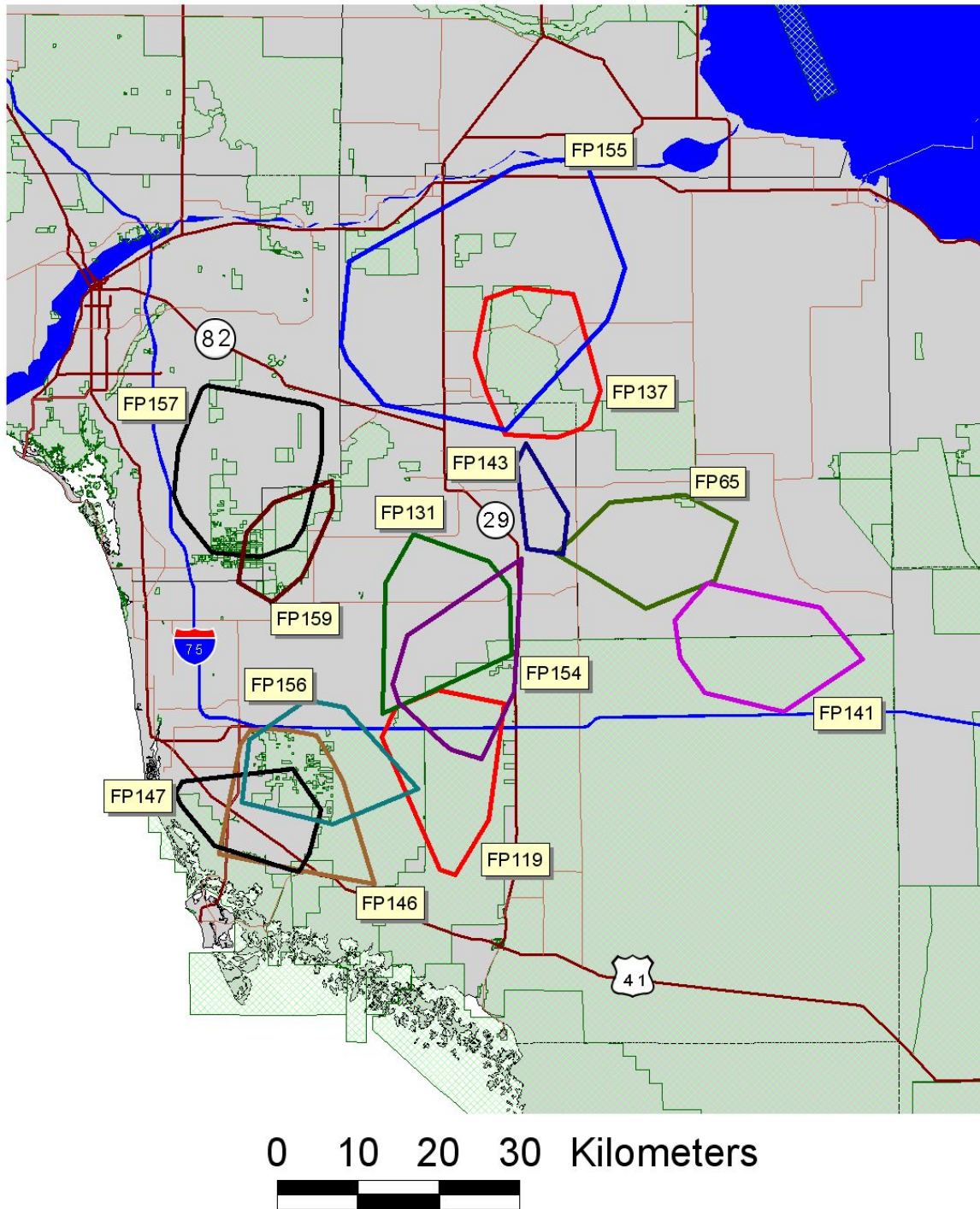


Figure 2. Depiction of the 100% minimum convex polygon home ranges for adult female Florida panthers monitored by FWC from 1 July 2007 to 30 June 2008.



**Figure 3. Depiction of the 100% minimum convex polygon home ranges for adult male Florida panthers monitored by FWC from 1 July 2007 to 30 June 2008.**

**Appendix I. List of radio-instrumented Florida panthers and Texas pumas in southern Florida from 10 February 1981 to 30 June 2008.**

**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, FSPSP	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	-	-	-	EVER	21 Jun 1991	Unknown
FP15	F	13 Dec 1986	5-6	-	-	-	EVER	10 Jun 1988	Intraspecific aggression
FP16	M	12 Jan 1987	12-14 mo.	-	FP14	-	EVER 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	-	EVER /White Oak	26 Dec 1997	Vehicle/Captivity/Old age
FP22	F	18 Mar 1987	5-6 mo.	-	FP15	-	EVER	20 Jul 1991	Infection
FP23	F	18 Mar 1987	5-6 mo.	-	FP15	-	EVER, 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	-	-	-	EVER	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, FSPSP	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	-	-	-	FSPSP, 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	-	-	-	EVER	18 May 1990	Pyothorax
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	EVER, 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, EVER, 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, FSPSP	19 Feb 1993	Intraspecific aggression
FP48	F	24 Feb 1992	4 mo.	Oct 1991	FP31	FP12	NBCNP	23 Oct 2006	Unknown
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	-	-	-	FSPSP, 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.	Mar 1992	FP40	-	FSPSP, FPNWR	♦	-
FP55	F	25 Jan 1994	1.1 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, FSPSP	♦	-
FP58	M	08 Feb 1995	8 mo.	Apr 1994	FP56	-	NBCNP, FPNWR, FSPSP	30 Mar 1997	Intraspecific aggression
FP59	M	04 Jan 1996	6 mo.	Jun 1995	FP48	-	NBCNP, FPNWR, FSPSP	22 Nov 2004	Intraspecific aggression
FP60	M	06 Mar 1996	5 mo.	Oct 1995	FP40	-	NBCNP, FSPSP, 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	Metabolic complications from pregnancy
TX104	F	24 Mar 1995	-	-	-	-	Fakahatchee Strand, Belle Meade	18 Apr 1998	Gunshot
TX105	F	05 Jul 1995	-	-	-	-	EVER	-	Removed from wild 1/27/2003
TX106	F	09 Apr 1995	-	-	-	-	PSSF, FPNWR, FSPSP	-	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	-	-	-	-	EVER	-	Removed from wild 11/18/2002
FP61	F	04 Mar 1997	8 mo.	Jul 1996	TX108	FP16	EVER	◆	-
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	OSSF – Collier Enterprise	-	-
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	12 Sep 2005	Unknown
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	-	SBCNP	-	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	-	-	-	OSSF	9 May 2003	Unknown (possible IA)
FP83	F	08 Feb 2000	8 mo.	Jun 1999	TX106	FP54	FSPSP	◆	-
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	EVER	1 Mar 2004	Unknown
FP86	F	21 Feb 2000	8 mo.	Jun 1999	FP71	FP79	SBCNP	7 Nov 2003	Spinal trauma
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, Belle Meade, CREW	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	EVER	◆	-
FP95	F	07 Nov 2000	2.8 yrs.	Jan 1998	TX108	FP16	EVER	◆	-
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	25 Jan 2007	Unknown
FP101	F	5 Feb 2001	2	-	-	-	NBCNP, BCSIR	◆	-
FP102	F	20 Feb 2001	3	Feb 1998	FP55	-	Turner River	◆	-
FP103	F	13 Mar 2001	8 mo.	Aug 2000	FP102	-	SBCNP-Sandy Road	8 Aug 2007	Intraspecific aggression
FP104	M	2 Apr 2001	6-7 mo.	-	-	-	Turner River	9 Mar 2006	Unknown

<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	SBCNP-N of Oasis	16 Nov 2002	Intraspecific aggression
FP109	M	10 Feb 2002	10+	-	-	-	OSSF	~23 Feb 2003	Intraspecific aggression
FP110	F	13 Feb 2002	13 mo.	Dec 2000	FP82	FP65	OSSF	♦	-
FP111	M	14 Feb 2002	10	-	-	-	OSSF	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	-	-	-	OSSF	17 May 2003	Pneumonia (FeLV positive)
FP116	F	20 Jan 2003	7 mo.	Jun 2002	FP67	-	Hendry Co. private lands	10 Jan 2007	Intraspecific aggression
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	NBCNP/FPNWR	-	-
FP120	F	8 Apr 2003	3	-	-	-	SBCNP – 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	-	-	-	OSSF	13 Feb 2004	Pneumonia/feline leukemia
FP123	M	2 Feb 2004	3.5	-	-	-	OSSF	15 Mar 2004	Intraspecific aggression
FP124	F	13 Feb 2004	3-4	-	-	-	Loop Road, SBCNP	-	-
FP125	M	13 Feb 2004	8 mo.	-	FP124	-	Loop Road, SBCNP, EVER	♦	Collar found, final fate unknown
FP126	M	13 Feb 2004	8 mo.	-	FP124	-	Loop Road, SBCNP, OSSF	1 Jan 2005	Intraspecific aggression
FP127	M	16 Feb 2004	2	-	-	-	Turner River Rd., SBCNP	14 Mar 2008	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>
FP128	F	18 Feb 2004	3.7	Jun 2000	FP77	-	BCSIR/Add Lands	27 Sept 2007	Unknown
FP129	F	20 Feb 2004	3	Jan 2001	FP87	FP79	Raccoon Point, SBCNP	22 Mar 2006	Intraspecific aggression
FP130	M	4 Mar 2004	9.5 mo.	May 2003	FP110	-	OSSF	21 Mar 2007	Vehicle (I-4 Reedy Creek)
FP131	M	10 Mar 2004	5	-	-	-	FPNWR	16 Apr 2008	Pneumonia
FP132	M	17 Mar 2004	3	-	-	-	OSSF/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	29 Jan 2007	Intraspecific aggression
FP135	M	17 Dec 2004	1.7	Apr 2003	FP101	FP65	FPNWR/private lands	10/27/2006	Intraspecific aggression/Euthanized
FP136	F	13 Jan 2005	3.5	-	-	-	SBCNP	13 Jun 2005	Spinal fracture
FP137	M	25 Jan 2005	2.5	-	-	-	OSSF/private lands	♦	-
FP138	M	31 Jan 2005	4	-	-	-	SBCNP/BCSIR/NBCNP	12 May 2008	Unknown
FP139	M	31 Mar 2005	2.9	May 2002	FP75	FP100	OSSF/private lands	♦	-
FP140	F	14 Nov 2005	3.5	-	-	-	FPNWR	-	-
FP141	M	30 Nov 2005	3.5	-	-	-	BCSIR, NBCNP	-	-
FP142	F	14 Dec 2005	2.5	-	-	-	EVER	♦	-
FP143	M	9 Jan 2006	1.5	-	-	-	BCSIR/private lands	♦	-
FP144	M	8 Feb 2006	2	-	-	-	NBCNP -Bear Island	♦	-
FP145	F	16 Feb 2006	1.7	-	-	-	SBCNP	♦	-
FP146	M	27 Feb 2006	3	-	-	-	PSSF	♦	-
FP147	M	3 Mar 2006	11 mos.	Mar 2005	FP129	-	SBCNP/FSPSP/PSSF/Rookery Bay	♦	-
FP148	F	24 Mar 2006	2.5	-	-	-	PSSF	♦	-
FP149	F	17 Jan 2007	2	-	-	-	PSSF	♦	-
FP150	F	8 Feb 2007	3.6	Jul 2003	FP93	FP60	SBCNP	♦	-

<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>
FP151	F	10 Feb 2007	4.9	Apr 2002	FP93	FP79	SBCNP	◆	-
FP152	M	16 Feb 2007	4-5	-	-	-	SBCNP	-	-
FP153	F	19 Feb 2007	6	-	-	-	SBCNP	-	-
FP154	M	21 Feb 2007	3	-	-	-	FPNWR	◆	-
FP155	M	29 Nov 2007	2.5	-	-	-	OSSF-adjoining private lands	-	-
FP156	M	7 Dec 2007	2.5	-	-	-	PSSF – North Belle Meade	◆	-
FP157	M	19 Dec 2007	3	-	-	-	LCPA – CREW (Flint Pen)	14 Apr 2008	Intraspecific Aggression
FP158	F	21 Jan 2008	2.5	-	-	-	PSSF - CSSP	-	-
FP159	M	29 Jan 2008	5-6	-	-	-	CREW (Flint Pen, Bird Rookery) - CSS	◆	-
FP160	F	5 Feb 2008	5	-	-	-	CREW (Marsh) - CSS	-	-
FP161	F	10 Feb 2008	3 yr 8 mo	May 2004	FP70	-	SBCNP	-	-
FP162	F	18 Feb 2008	3	-	-	-	SBCNP	-	-
FP163	M	21 Feb 2008	1	Feb 2007	FP93	-	SBCNP	◆	-
FP164	M	24 Feb 2008	2	-	-	-	SBCNP	-	-

<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>BCSIR = Big Cypress Seminole Indian Reservation; CSS = Corkscrew Swamp Sanctuary; CSSP = Collier Seminole State Park; EVER = Everglades National Park; FPNWR = Florida Panther National Wildlife Refuge; FSPSP = Fakahatchee Strand Preserve State Park; LCPA = Lee County Port Authority Mitigation Area; 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.

◆ Telemetry collar either failed or was released (via timed or remote release mechanisms) prior to the death of the animal.

**Appendix II. List of Florida panther kittens handled at natal dens in southern Florida by FWC and BCNP staff from 7 April 1992 through 30 June 2008. Litters are sorted chronologically.**

<b>Kitten ID</b>	<b>Dam ID</b>	<b>Date marked</b>	<b>Sex</b>	<b>Transponder ID</b>	<b>Estimate age in days</b>	<b>Field Sire</b>	<b>Date Collared</b>	<b>Eventual panther ID</b>
K1	FP40	4/7/1992	M	None	14-21	FP28	2/10/1993	FP54
K2	FP40	4/7/1992	M	None	14-21	FP28		
K3	FP40	6/18/1993	M	None	21	FP26		
K4	FP40	6/18/1993	F	None	21	FP26		
K5	FP40	6/18/1993	F	None	21	FP26		
K6	FP48	10/30/1993	M	None	8	FP12		
K7	FP48	10/30/1993	F	None	8	FP12		
K8	FP48	10/30/1993	F	None	8	FP12		
K9	FP56	4/21/1994	M	None	14	unknown		
K10	FP56	4/21/1994	F	None	14	unknown		
K11	FP56	4/21/1994	M	None	14	unknown		
K12	FP19	5/17/1994	F	None	14-17	FP51		
K13	FP19	5/17/1994	F	None	14-17	FP51		
K14	FP55	4/8/1995	F	None	12	FP42		
K15	FP55	4/8/1995	F	None	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		

Kitten ID	Dam ID	Date marked	Sex	Transponder ID	Estimate age in days	Field Sire	Date Collared	Eventual panther ID
K25	FP36	2/6/1996	M	1147C9B	14	FP45		
K26	FP36	2/6/1996	M	11DF0DA	14	FP45		
UCFP44	FP36	2/6/1996	U	None	U	0		
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	U	11EAB72T	14	FP45		
K30	FP56	8/14/1996	U	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		
unmarked1 <sup>a</sup>	FP40	2/5/1998	F	None	270	0	2/5/1998	FP69
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		

<b>Kitten ID</b>	<b>Dam ID</b>	<b>Date marked</b>	<b>Sex</b>	<b>Transponder ID</b>	<b>Estimate age in days</b>	<b>Field Sire</b>	<b>Date Collared</b>	<b>Eventual panther ID</b>
unmarked3 <sup>b</sup>	FP48	1/11/1999	F	None	7 months	0	1/11/1999	FP75
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+	FP79F1?		
K57	TX107	3/11/1999	M	14245FOT	21+	FP79F1?		
K58	TX107	3/11/1999	F	12A9FE5T	21+	FP79F1?	4/10/2000	FP93
K59	FP61	4/6/1999	M	1EFF6EFT	14	FP16	2/17/2000	FP85
K60	FP55	5/10/1999	F	1EFFA75T	24-26	FP79F1?	2/28/2000	FP87
K61	FP55	5/10/1999	M	1EFF978T	24-26	FP79F1?		
K62	TX106	6/18/1999	F	114C9D7T	14	FP54/FP60		
K63	TX106	6/18/1999	F	12AFC11T	14	FP54/FP60	2/8/2000	FP83
K64	FP70	6/23/1999	F	1E2EB33T	10-12	FP79F1	3/2/2000	FP88
K65	FP70	6/23/1999	M	703A4AT	10-12	FP79F1	4/6/2000	FP92
K66	FP70	6/23/1999	F	1EFFF55T	10-12	FP79F1	3/17/2000	FP91
K67	FP71	7/4/1999	M	1E2EBFET	17	FP79F1	3/8/2000	FP90
K68	FP71	7/4/1999	F	20509A9T	17	FP79F1	2/21/2000	FP86
K69	FP71	7/4/1999	M	1E2F6B7T	17	FP79F1		
K70	FP71	7/4/1999	F	1E2DF2BT	17	FP79F1		
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

<b>Kitten ID</b>	<b>Dam ID</b>	<b>Date marked</b>	<b>Sex</b>	<b>Transponder ID</b>	<b>Estimate age in days</b>	<b>Field Sire</b>	<b>Date Collared</b>	<b>Eventual panther ID</b>
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	FP65F1	2/13/2002	FP110
K87	FP82	1/3/2001	F	1E2EFB7T	14	FP65F1		
K88	FP82	1/3/2001	M	1F00D57T	14	FP65F1		
K89	FP87	2/7/2001	F	20501C5T	14-21	FP79F1	2/20/2004	FP129
K90	FP87	2/7/2001	M	1E2F06B	14-21	FP79F1	11/3/2001	FP108
K91	FP87	2/7/2001	M	1F071F4T	14-21	FP79F1		
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		
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	FP79F1		
K106	FP102	7/12/2001	M	600E036	21	FP79F1		
K107	FP49	8/27/2001	M	000600F828	21	unknown		
K108	FP77	8/30/2001	M	000600F0EA	30	unknown		

<b>Kitten ID</b>	<b>Dam ID</b>	<b>Date marked</b>	<b>Sex</b>	<b>Transponder ID</b>	<b>Estimate age in days</b>	<b>Field Sire</b>	<b>Date Collared</b>	<b>Eventual panther ID</b>
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	FP85B-FL		
unmarked2 <sup>c</sup>	FP95	?	U	None	0	unknown		
K113	FP93	4/23/2002	F	0001EFF813T	18	FP79F1	2/10/2007	FP151
K114	FP93	4/23/2002	F	000600CC53	18	FP79F1		
K115	FP93	4/23/2002	M	0001F071E4T	18	FP79F1	4/2/2003	FP119
K116	FP93	4/23/2002	F	0001F01C76T	18	FP79F1		
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		
K127	FP55	5/30/2002	F	000600EAD2	10	FP79F1		
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		

<b>Kitten ID</b>	<b>Dam ID</b>	<b>Date marked</b>	<b>Sex</b>	<b>Transponder ID</b>	<b>Estimate age in days</b>	<b>Field Sire</b>	<b>Date Collared</b>	<b>Eventual panther ID</b>
K137	FP102	7/19/2002	F	0006318229	15	FP79F1		
K138	FP102	7/19/2002	M	000630E287	15	FP79F1		
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	2/8/2007	FP150
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		
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		

<b>Kitten ID</b>	<b>Dam ID</b>	<b>Date marked</b>	<b>Sex</b>	<b>Transponder ID</b>	<b>Estimate age in days</b>	<b>Field Sire</b>	<b>Date Collared</b>	<b>Eventual panther ID</b>
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		
UCFP67	FP113	9/2/2004	U	dead not marked	5	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	000647AEBB	15	FP131/FP133		
K187	FP116	6/19/2005	M	00064D6A85	22	unknown		
K188	FP116	6/19/2005	F	000647AEEEE6	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		

<b>Kitten ID</b>	<b>Dam ID</b>	<b>Date marked</b>	<b>Sex</b>	<b>Transponder ID</b>	<b>Estimate age in days</b>	<b>Field Sire</b>	<b>Date Collared</b>	<b>Eventual panther ID</b>
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		
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	0006009668	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	18	unknown		
K206	FP94	6/22/2006	M	00063D8B9D	18	unknown		
K207	FP94	6/22/2006	F	00063DD7D8	18	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		
K211	FP93	7/1/2006	F	0064068FF	18	FP133		
K212	FP93	7/1/2006	F	00647879D	18	FP133		
K213	FP93	7/1/2006	F	0064D988C	18	FP133		
K214	FP95	7/3/2006	F	00064D852D	10	unknown		
K215	FP95	7/3/2006	F	00064D5EDC	10	unknown		
K216	FP95	7/3/2006	M	000647C887	10	unknown		
K217	FP102	7/12/2006	M	000672358E	18	FP138		
K218	FP102	7/12/2006	M	000671CA33	18	FP138		
K219	FP140	11/15/2006	F	006435A2B	9-11	FP119		
K220	FP140	11/15/2006	M	0006436824	9-11	FP119		
K221	FP148	1/18/2007	F	000647D2EE	21	FP146?		
K222	FP148	1/18/2007	M	00064DC433	21	FP146?		

<b>Kitten ID</b>	<b>Dam ID</b>	<b>Date marked</b>	<b>Sex</b>	<b>Transponder ID</b>	<b>Estimate age in days</b>	<b>Field Sire</b>	<b>Date Collared</b>	<b>Eventual panther ID</b>
K223	FP148	1/18/2007	F	00064E23C	21	FP146?		
K224	FP124	2/17/2007	M	64EED68	9	unknown		
K225	FP124	2/17/2007	M	64E00C9	9	unknown		
K226	FP93	3/8/2007	M	6712488	16	unknown		
K227	FP93	3/8/2007	M	64DF113	16	unknown		
K228	FP93	3/8/2007	F	64EO84F	16	unknown		
K229	FP110	3/20/2007	F	0006327849	10-12	FP137		
K230	FP110	3/20/2007	M	00063DD906	10-12	FP137		
K231	FP110	3/20/2007	F	00063DC6F3	10-12	FP137		
K232	FP110	3/20/2007	M	00063218EB	10-12	FP137		
K233	FP113	3/25/2007	F	00063DC1F0	7	FP119		
K234	FP113	3/25/2007	M	00063DC585	7	FP119		
K235	FP113	3/25/2007	M	0006439B7	7	FP119		
K236	FP103	4/4/2007	F	0006722801	24	FP127		
K237	FP103	4/4/2007	F	00067142C6	24	FP127		
K238	FP103	4/4/2007	M	000671D047	24	FP127		
K239	FP149	4/13/2007	F	00063DCBCC	11-13	unknown		
K240	FP149	4/13/2007	F	000631A816	11-13	unknown		
K241	FP151	4/21/2007	M	67245C4	16	unknown		
K242	FP151	4/21/2007	F	67216AA	16	unknown		
K243	FP151	4/21/2007	F	64E6E50	16	unknown		
K244	FP145	4/26/2007	M	6718E19	16	FP133		
K245	FP145	4/26/2007	M	6718AEE	16	FP133		
K246	FP145	4/26/2007	F	6722453	16	FP133		
K247	FP107	4/27/2007	F	0006437F96	10-12	unknown		
K248	FP107	4/27/2007	M	0006435576	10-12	unknown		
K249	FP107	4/27/2007	F	dead not marked	10-12	unknown		
K250	FP128	5/12/2007	M	0006435419	10-12	unknown		
K251	FP128	5/12/2007	M	0006434A69	10-12	unknown		

<b>Kitten ID</b>	<b>Dam ID</b>	<b>Date marked</b>	<b>Sex</b>	<b>Transponder ID</b>	<b>Estimate age in days</b>	<b>Field Sire</b>	<b>Date Collared</b>	<b>Eventual panther ID</b>
K252	FP128	5/12/2007	F	0006433EFA	10-12	unknown		
K253	FP150	7/20/2007	M	672F07	18	unknown		
K254	FP150	7/20/2007	F	671F6F3	18	unknown		
K255	FP150	7/20/2007	F	67231E8	18	unknown		
K256	FP150	7/20/2007	F	671E895	18	unknown		
K257	FP110	8/10/2007	M	0006439E20	13-15	unknown		
K258	FP110	8/10/2007	M	000643422C	13-15	unknown		
K259	FP151	8/27/2007	M	dead not marked	17-20	unknown		
K260	FP151	8/27/2007	?	dead not marked	17-20	unknown		
K261	FP107	9/25/2007	M	000643530F	10-14	unknown		
K262	FP107	9/25/2007	M	0006435247	10-14	unknown		
K263	FP107	9/25/2007	M	00063DC5C2	10-14	unknown		
K264	FP151	3/4/2008	F	6957DE2	21	unknown		
K265	FP151	3/4/2008	M	695B244	21	unknown		
K266	FP140	5/2/2008	M	00063DF3C8	7	FP154		
K267	FP140	5/2/2008	M	00063DEAA1	7	FP154		
K268	FP162	5/23/2008	F	dead not marked	14	FP138		
K269	FP162	5/23/2008	M	dead not marked	14	FP138		
K270	FP158	6/7/2008	F	6435FEC	14-17	FP146		
K271	FP158	6/7/2008	M	6435381	14-17	FP146		
K272	FP158	6/7/2008	M	642652B	14-17	FP146		
K273	FP158	6/7/2008	M	643824C	14-17	FP146		

<sup>a</sup> This kitten was not observed or marked at the den, but was captured at the carcass of the dam on 2/5/1998. Eventually released into the wild as FP69.

<sup>b</sup> This kitten was not observed or marked at the den, but was captured near FP48 and collared as FP75 on 1/11/1999. Reunited with FP48 the following day.

<sup>c</sup> FP95 was observed with 2 kittens from the air, verifying that at least 1 littermate of K112 was not recorded on 4/21/2002

**Appendix III. List of all known dens of radio-instrumented female Florida panthers and Texas pumas in southern Florida from June 1985 to June 2008. 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<sup>b</sup></b>	<b>Kittens handled</b>	<b>Purported sire</b>
FP009	Jun-85	S Golden Gate Estates	?	1?	FP10♂ den not visited	Unknown
FP009	Jun-87	FSPSP	Hardwood hammock	1?	den not visited	FP12
FP009	May-89	FSPSP	Mixed swamp	?	den not visited	Unknown
FP009	Jul-90	FSPSP	Mixed swamp	2?	FP202♂, FP203♂ den not visited	FP37
FP009	Jun-93	FSPSP	Hardwood hammock	Unsuccessful?	den not visited	FP51
FP011	May-86	BCNP - Bear Island	Pine/palmetto	3?	FP19♀ den not visited	FP12
FP011	May-88	BCNP - Bear Island	Pine/palmetto	1?	FP29♂ den not visited	FP20
FP011	Apr-90	BCNP - Bear Island	Palmetto/oaks	1?	♀(roadkill) den not visited	FP12
FP011	Jul-91	Price's	Unknown	1?	FP47♂ den not visited	FP12
FP011	Mar-93	BCNP - Bear Island	Unknown	?	den not visited	FP12?
FP014	Apr-89	Long Pine Key	Pine/palmetto	2?	FP42♂, den not visited	FP16
FP014	Mar-91	Long Pine Key	Pine/palmetto	Unsuccessful	den not visited	FP16
FP015	May-88	Long Pine Key	Vines/ferns	Unsuccessful	den not visited	FP16
FP019	Mar-88	Price's	Pine/palmetto	4?	FP30♂ den not visited	FP13
FP019	Jul-89	FPNWR	Palmetto, myrtle	1?	FP43♂ den not visited	FP12
FP019	Nov-90	Rock Spring Island	Pine/palmetto	2?	FP205♀, FP45♂ den not visited	FP12
FP019	Mar-92	NE Hog Pond	Pine/palmetto	2?	UCFP21♀, FP53♂ den not visited	FP12
FP019	May-94	FPNWR	Mixed swamp	2	K12♀, K13♀	FP51?
FP019	Mar-96	Barfield's	Cypress swamp	2	K27♀, K28♀	FP54, FP51?
FP023	Aug-92	Raccoon Point	Pine/palmetto	2	FP209♀, FP210♂	FP42
FP023	Dec-92	Raccoon Point	Pine/palmetto	1?	FP55♀ den not visited	FP42
FP031	Mar-89	Catherine Island	Pine/palmetto	3?	FP34♂, FP35♂ den not visited	FP12
FP031	Jul-90	Regency Farms	Palmetto/myrtle	2?	FP201♂, FP204♀ den not visited	FP12
FP031	Sep-91	Barfield's	Palmetto	2?	FP48♀, FP52♀ den not visited	FP12
FP032	Mar-89	Catherine Island	Pine/palmetto	unsuccessful?	den not visited	Unknown
FP032	May-92	FPNWR		1	FP208♀	FP12
FP032	Mar-96	FPNWR	Pine/palmetto	1	UCFP24 (Dead ♀)	
FP036	Mar-90	BCSIR	Pine/palmetto	?	den not visited	Unknown
FP036	May-91	BCNP - Add Lands	Palmetto	2?	FP207♂, FP50♂ den not visited	FP26

Panther ID	Den date	Location <sup>a</sup>	Habitat	No. of kittens <sup>b</sup>	Kittens handled	Purported sire
FP036	Oct-93	N of BCSIR	Pine/palmetto	1?	den not visited	FP26, FP34
FP036	Jun-95	Canoe Lake Strand	Mixed swamp	?	den not visited	FP45?
FP036	Jan-96	Wilson Cypress	Hardwood hammock	4	K24♀,K25♂,K26♂,UCFP44	FP45
FP040	Nov-90	Baker's Grade	Hardwood/Schinus	2	FP206♀, FP44♂ den not visited	FP26
FP040	Mar-92	Baker's Grade	Pine/palmetto	2	FP54♂, K02♂	FP28?
FP040	May-93	Baker's Grade	Cypress, cabbage	3	K03♂,K04♀,K05♀	FP26
FP040	Apr-97	BCNP - Add Lands	Pine/palmetto	2	FP69♀, K37♂	FP45
FP040	? <sup>c</sup>	?	?	2?	FP60♂, ♀ tracks, den not visited	Unknown
FP048	Oct-93	BCNP - Bear Island	Palmetto	3	K06♂,K07♀,K08♀	FP12
FP048	Jun-95	Dozier Hammock	Palmetto	2	FP59♂,K17♀	Unknown
FP048	Sep-96	NE Doctor's Ham.	Pine/palmetto	3	FP62♂,FP64♂,UCFP50♂	Unknown
FP048	Jun-98	BCNP - Bear Island	Pine/palmetto	2	K51♂, FP75♀	FP68 or FP45
FP048	Oct-99	BCNP - Bear Island	Pine/palmetto	2	K74♀, K75♀ ( abandoned)	FP63 or FP68
FP049	Jan-99	BCNP - Add Lands	?	1	K55♂	Unknown
FP049	Jul-01	BCNP - Add Lands	?	1	K107♂	Unknown
FP052	Jul-93	Sadie Cypress	Palmetto	2?	1♂ (roadkill) den not visited	FP46
FP052	Jul-94	Sadie Cypress	Hardwood hammock	?	den not visited	Unknown
FP055	Apr-95	BCNP	Pine/palmetto	2	K14♀,K15♀	FP42
FP055	Sep-97	BCNP - N Burns Lake	Palmetto	1	K44♂	Unknown
FP055	Feb-98	BCNP - N Monument Lake	Palmetto	3	FP102♀,K49♀,K50♂	Unknown
FP055	Apr-99	BCNP	Palmetto	2	FP87♀, K61♂	Unknown
FP055	Jun-01	BCNP - NE Airplane Prairie	Palmetto	1	K104♂	FP79
FP055	May-02	BCNP	Pine/palmetto	1	K127♀	FP79
FP055	Sep-03	BCNP	Pine/cabbage		den not visited	Unknown
FP056	Apr-94	Baker's Grade	Pine/palmetto	3	K09♂,K10♀,K11♂	Unknown
FP056	Oct-95	North BCSIR	Sawgrass marsh	3	K20♂,K21♂,K22♂	FP45
FP056	Jul-96	North BCSIR	Fern bed	2	K29♀?,K30♀?	FP45
FP056	May-97	Bakers Grade	?	4	K40♂,K41♀,K43♂, FP67♀	FP45
FP057	Jun-98	FSPSP	Palmetto	?	den not visited	FP54
FP061	Mar-99	Long Pine Key	Pine/palm	1	FP85♂	FP16
FP061	Sep-02	EVER - East	Sawgrass marsh	4	K139♀, K140♂, K141♂, K142♀	Unknown
FP066	Sep-98	Belle Meade	Palmetto	3	K52♂,K53♀,K54♂	FP72
FP066	Dec-99	Private lands	Hardwood hammock	3	K76♂,K77♀,K78♀	FP60
FP067	Aug-00	Private lands	Pine palmetto	2	K84♂, K85♀	Unknown
FP067	May-01	Private lands	Hardwood hammock	4	K98♀,K99♂,K100♂, K101♂	Unknown

Panther ID	Den date	Location <sup>a</sup>	Habitat	No. of kittens <sup>b</sup>	Kittens handled	Purported sire
FP067	Jun-02	Private lands	Brazilian pepper	3	FP116♀, K133♂, K134♂	Unknown
FP069	Jul-99	BCNP - NE of Baker's Camp	Hardwood hammock	3	K71♂, K72♀, K73♀	Unknown
FP070	Jun-99	BCNP - NE of Monument Lake	Pine/palmetto	3	FP88♀, FP92♂, FP91♀	FP79
FP070	May-04	BCNP - Turner River Unit	Palmetto/vines	3	K167♀, K168♂, K169♀	Unknown
FP071	Jun-99	BCNP	Mixed swamp	4	FP90♂, FP86♀, K69♂, K70♀	FP79
FP073	Feb-99	BCSIR	Pine palmetto	1?	FP84♂ den not visited	-
FP073	Feb-02	BCNP - Addition Lands	Pine palmetto	3	K109♂, K110♂, K111♀	Unknown
FP073	? <sup>d</sup>	?	?	1?	FP74♂ den not visited	-
FP075	Apr-00	Private lands	Hardwood hammock	Unsuccessful	den not visited	
FP075	Jun-01	BCNP - Bear Island	Pine palmetto	2	K102♂, K103♂	FP59
FP075	May-02	BCNP - Bear Island	Pine/palmetto	2	K128♂, K129♂	FP98, FP100
FP075	Mar-04	BCNP - Bear Island	Pine palmetto	3	K157♂, K158♂, K159♀	Unknown
FP075	Aug-05	BCNP - Bear Island	Hardwood hammock	4	K192♂, K193♀, K194♀, K195♂	FP135
FP077	May-00	BCNP - Addition Lands	Palmetto/vines	3	K81♂, K82♀, K83♂	Unknown
FP077	Aug-01	BCNP - Addition Lands	Pine palmetto	1	K108♂	Unknown
FP078	Apr-00	FPNWR	Palmetto/oak	2	FP107♀d, FP96♂	FP59
FP078	Apr-02	FPNWR	Palmetto	4	K117♀, K118♀, K119♀, K120♂	FP59
FP082	Dec-00	OK Slough	?	3	K86♀, K87♀, K88♂	FP65
FP083	Apr-02	FSPSP	Pine palmetto	1	K123♂	Unknown
FP083	Jun-04	FSPSP	Pine/palmetto	?	den not visited	Unknown
FP087	Jan-01	BCNP	Pine palmetto	3	K89♀, FP108♂, K91♂	FP79
FP087	Mar-03	BCNP - N of Oasis	Pine/palmetto	3	K143♀, K144♂, K145♀	FP79
FP088	May-01	BCNP - Loop Unit	Cypress/ferns	4	K94♂, K95♀, K96♂, K97♀	Unknown
FP093	Apr-02	BCNP - Turner River Unit	Pine/palmetto	4	K113♀, K114♀, FP119♂, K116♀	FP79
FP093	Jul-03	BCNP - Turner River Unit	Hardwood hammock	3	K152♀, K153♂, K154♂	FP60
FP093	Jun-06	BCNP - Turner River Unit	Tropical hardwood	3	K211♀, K212♀, K213♀	FP133
FP094	Jun-06	EVER - CIA hammock	Hardwood hammock	3	K205♀, K206♂, K207♀	Unknown
FP095	Mar-02	EVER - Long Pine Key	Pine/palmetto	1	K112♀	FP85
FP095	Jun-06	EVER - Long Pine Key	Hardwood/palmetto	3	K214♀, K215♀, K216♂	Unknown
FP101	Apr-02	BCSIR	Pine/palmetto	2	K121♂, K122♀	Unknown
FP101	Apr-03	Private lands	Pine/palmetto	3	K146♀, K147♂, K148♀	FP65/FP100
FP102	Jun-01	BCNP - Monument Lake	Pine/palmetto	2	K105♂, K106♂	FP79
FP102	Jul-02	BCNP - Monument Lake	Hardwood hammock	2	K137♀, K138♂	FP79
FP102	Jul-04	BCNP - Burns Lake	Hardwood hammock	3	K170♀, K171♂, K172♀	FP79
FP102	Jun-06	BCNP - Turner River Unit	Hardwood hammock	2	K217♂, K218♂	FP138

Panther ID	Den date	Location <sup>a</sup>	Habitat	No. of kittens <sup>b</sup>	Kittens handled	Purported sire
FP103	Apr-07	BCNP - Corn Dance	Hardwood hammock	3	K236♀, K237♀, K238♂	FP127
FP106	May-02	FPNWR	Hardwood hammock	3	K124♀, K125♂, K126♂	Unknown
FP107	Jun-02	FPNWR	Hardwood hammock	2	K135♂, K136♀	Unknown
FP107	May-04	FPNWR	Hardwood hammock	4	K163♂, K164♂, K165♀, K166♀	Unknown
FP107	Mar-05	FPNWR	Hardwood hammock	2	K180♀, K181♀	FP119, FP131
FP107	Feb-06	FPNWR	Pine/palmetto	2	K200♀, K201♂	FP131
FP107	Apr-07	FPNWR - Rock Island	pine palmetto	3	K247♀, K248♂, K249♀	Unknown
FP107	Sep-07	FPNWR	pine palmetto	3	K261♂, K262♂, K263♂	Unknown
FP110	May-03	OSSF	Pine/palmetto	3	K149♀, K150♂, K151♀	Unknown
FP110	Feb-05	OSSF	Pine/palmetto	2	K178♂, K179♀	Unknown
FP110	Nov-05	OSSF	Hardwood hammock	4	K196♂, K197♂, K198♂, K199♀	Unknown
FP110	Mar-07	OSSF	Pine/palmetto	4	K229♀, K230♂, K231♀, K232♂	FP137
FP110	Aug-07	OSSF	Hardwood hammock	2	K257♂, K258♂	Unknown
FP110	Nov-08	OSSF -Dog Island	Palmetto	?	den not visited	Unknown
FP112	Jun-02	BCNP - Bear Island	Pine/palmetto	2	K130♂, K131♂	FP98, FP100
FP113	Aug-04	FPNWR	Pine/palmetto	1?	UCFP67	Unknown
FP113	Apr-05	FPNWR	Pine/palmetto	2	K185♂, K186♀	FP131, FP133
FP113	Mar-07	FPNWR	Hardwood hammock	3	K233♀, K234♂, K235♂	FP119
FP116	Apr-04	Hendry Co. Gum Swamp	Hardwood hammock	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	Pine/palmetto	1	K173♀	Unknown
FP121	Feb-06	BCSIR	Pine/palmetto	3	K202♀, K203♂, K204♂	Unknown
FP124	Sep-04	BCNP - Stairsteps	Pine/palmetto	1	K174♂	Unknown
FP124	Jan-05	BCNP - Pinecrest	Pine/palmetto	3	K175♂, K176♂, K177♀	Unknown
FP128	Jun-05	BCSIR	Pine/palmetto	2	K190♂, K191♂	Unknown
FP128	May-07	Stirelli property -Additionlands	Palmetto/fern	3	K250♂, K252♂, K252♀	Unknown
FP129	Apr-05	BCNP- Corn Dance	?	3	K182♀, K183♂, K184♂	Unknown
FP140	Nov-06	FPNWR	Hardwood hammock	2	K219♀, K220♂	FP119
FP140	May-08	FPNWR	Cypress/ferns	2	K266♂, K267♂	FP154
FP145	Jun-06	BCNP -Deep Lake	Pine/palmetto	3	K208♀, K209♀, K210♀	FP138
FP145	Apr-07	BCNP - Deep Lake	Hardwood hammock	3	K244♂, K245♂, K246♀	FP133
FP148	Jan-07	Belle Meade	Palmetto	3	K221♀, K222♂, K223♀	FP146
FP149	Apr-07	PSSF	Bracken fern	2	K239♀, K240♀	Unknown
FP150	Jul-07	SBCNP	Palmetto	4	K253♂, K254♀, K255♀, K256♀	Unknown

Panther ID	Den date	Location <sup>a</sup>	Habitat	No. of kittens <sup>b</sup>	Kittens handled	Purported sire
FP151	Apr-07	BCNP- Turner River	Palmetto	3	K241♂, K242♀, K243♀	Unknown
FP151	Aug-07	SBCNP	Palmetto	2	K259♂, K260 unknown sex	Unknown
FP151	Mar-08	BCNP-Turner River	Palmetto	2	K264♀, K265♂	Unknown
FP158	Jun-08	CSSP	Pepper/climbing fern	4	K270♀, K271♂, K272♂, K273♂	FP146
FP162	May-08	BCNP-Turner River	Hardwood hammock	2	K268♀, K269♂ (both dead)	FP138
TX101	Sep-95	BCSIR	Pine/palmetto	2	FP73♀, FP79♂	Unknown
TX101	Dec-96	BCSIR	Palmetto/oak	2	FP65♂, FP66♀	FP45
TX105	Aug-96	EVER - 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	Apr-97	BCNP - N of Oasis	Pine/palmetto	2	FP70♀, FP71♀	Unknown
TX107	Feb-99	BCNP - N of Buckskin Prairie	Pine/palmetto	3	K56♀, K57♂ <sup>d</sup> , FP93♀	FP79
TX108	Jun-96	ENP - Long Pine Key	Tropical hardwood	1?	FP61♀ den not visited	FP16
TX108	Jan-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; CSSP = Collier-Seminole State Park; EVER = Everglades National Park; FPNWR = Florida Panther National Wildlife Refuge; FSPSP = 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

<sup>b</sup>Unsuccessful = failed den; ? = uncertainty

<sup>c</sup>FP40 had lost her collar when her kitten FP60 was captured at 6 months of age on 3/6/96. Den is assumed to have dated to 1995

<sup>d</sup>FP73 was marked as a kitten then captured with her 15month old kitten FP74 on 11/12/98. Den is assumed to have dated to 1997

**Appendix IV. Florida panther and Texas puma mortalities and injuries sorted by year through 30 June 2008. 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.**

Date	Panther ID	Sex	Age	Location	Cause
Circa 1940s	UCFP01	?	?	Immokalee, Collier County	Preserved skin, skull and bones
1954	UCFP47	?	?	Rocky Lake, Hendry County	Taxidermy pelt from hunted specimen
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, Gannet 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+	FSPSP	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 Conservation 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+	FSPSP	Intraspecific Aggression
10/30/1984	UCFP11	F	2 to 3	Corbett WMA, Palm Bch. Co. (Elmer Brooker)	Shooting
11/2/1984	BIG GUY	M	2 to 4	US 41	Vehicle - <b>Injured</b>
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	Unknown	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	4 to 5	Golden Gate Estates, S of SR 84	Shooting ( <b>not fatal</b> )
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 - <b>Injured</b>
12/14/1987	FP13	M	6 to 8	SR 29 Sunniland	Vehicle
12/19/1987	UCFP17	M	~10	Crane Swamp, Framton WMA, Volusia Co.	Unknown- only skeletal remains found
6/10/1988	FP15	F	7 to 8	EVER	Intraspecific Aggression

Date	Panther ID	Sex	Age	Location	Cause
7/23/1988	FP21	F	2.5	1 mile east of US1 on Palm Drive	Vehicle - <b>Injured</b>
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 - <b>Injured</b>
1/25/1989	UCFP18-(RK-850)	M	3	CR 850 1.5 miles south of SR 82	Vehicle
7/23/1989	FP27	M	3 to 4	EVER	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.	FSPSP	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	EVER	Pyothorax
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	EVER	Unknown
7/20/1991	FP22	F	5	EVER	Infection
11/1/1991	FP43	M	2	BCSIR, Hendry Co.	Intraspecific Aggression- killed by FP26
4/7/1992	NONE	M	Unknown	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.	FSPSP	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

Date	Panther ID	Sex	Age	Location	Cause
11/8/1994	FP12	M	13 to 14	Private lands, Hendry County	Intraspecific Aggression- infected bite wounds from FP46
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, S. Lostman's Pines 1mi. N of EVER bound	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	FSPSP; 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 EVER	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	FP84	M	14 mos.	Fisheating Crk. WMA, N. of creek, 5 mi W of US 27	Unknown
6/23/2000	UCFP35	M	1.5 to 2	CR846; 2 miles east of Immokalee	Vehicle

Date	Panther ID	Sex	Age	Location	Cause
8/13/2000	UCFP36	F	1.7	CR 846; East of Immokalee near power lines	Vehicle
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	OSSF, 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	6.3	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

Date	Panther ID	Sex	Age	Location	Cause
4/4/2003	FP118	F	1	BCSIR; Game Pen	Unknown
5/10/2003	FP82	F	6	OSSF	Intraspecific Aggression
6/13/2003	UCFP55	M	1 to 1.5	BCSIR Safari Pen	Unknown
6/14/2003	UCFP56	M	1 to 1.5	BCSIR Safari Pen	Unknown
6/16/2003	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	M	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	EVER	Unknown
3/3/2004	UCFP64	?	?	SR66; ~0.75 miles W of SR635	Vehicle collision; DNA sample collected from bumper
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 – <b>Injured</b>
7/22/2004	FP132	M	3 to 3.5	OSSF 0.75 miles S of CR832, ~0.2 miles E. of Wild Cow Grade	FeLV
7/28/2004	FP117	M	27 mos.	US41 at Turner River Road	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	Trauma/Lacerations
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

Date	Panther ID	Sex	Age	Location	Cause
12/1/2004	UCFP70	F	1	SR 29 at Owl Hammock Curve	Vehicle
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 CR846; 2 miles N of CR858 - near Collier County	Vehicle
1/26/2006	UCFP79	F	2	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	Intraspecific Aggression
3/22/2006	FP129	F	5	BCNP	Unknown
4/6/2006	K203	M	1 mo.	BCSIR	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
7/6/2006	UCFP86	U	Unknown	SR29 0.6 mi south of Sunniland	Vehicle - carcass not found (gator?)
8/24/2006	UCFP87	M	3	Corkscrew Rd. near Alico, Lee County	Vehicle
10/27/2006	FP135	M	3.5	University of Florida, Vet School	Intraspecific Aggression/euthanasia
10/23/2006	FP48	F	15	Sunniland, Collier County	Unknown
11/26/2006	UCFP88	F	2	US 41 between Manatee Rd and CR951	Vehicle
12/12/2006	UCFP89	M	3-5	County Line Road, Collier/Hendry	Vehicle
1/10/2007	FP116	F	4.5	Williams Ranch, Hendry County	Intraspecific Aggression
1/24/2007	UCFP90	F	4-6 mos.	CR 832 1mile W of Forestry tower	Vehicle

Date	Panther ID	Sex	Age	Location	Cause
1/25/2007	FP100	M	10	Micosukee Res N of I-75	Unknown
1/29/2007	FP134	M	5.5	Addition Lands W of L-28, S of pipeline	Intraspecific Aggression
3/9/2007	UCFP91	M	5 mos.	CR 832 west of Keri tower, OK Slough SF	Vehicle
3/21/2007	FP130	M	4	I-4 near Osceola, Orange county line	Vehicle
3/29/2007	UCFP92	M	1.5	US 41 1.2 mi W of SR 29	Vehicle
3/30/2007	UCFP93	M	2	I-75 .5 mi N Corkscrew Road, Lee County	Vehicle
4/3/2007	UCFP94	M	2-3	I-75 2 mi E of toll booth MM98, Collier County	Vehicle
4/18/2007	UCFP95	M	2-3	Walk-in-Water road, Polk County	Vehicle
4/27/2007	K249	F	10-12 days	FPNWR Unit12	Septicemia
5/3/2007	K247	F	16-18 days	FPNWR Unit12	Complications related to dermatophytosis
5/3/2007	K248	M	16-18 days	FPNWR Unit12	Unknown
5/9/2007	UCFP96	F	3	US1 1/2 mile south of Card Sound Rd., Dade Co.	Vehicle
5/14/2007	UCFP97	F	4-5	Corkscrew Rd. near Alico, Lee County	Vehicle
6/11/2007	UCFP98	M	20-24 mos.	SR29 at Jerome wildlife crossing	Vehicle
6/14/2007	UCFP99	M	12-15 mos.	0.7 miles west of Sunshine Blvd on SR82	Vehicle
6/23/2007	UCFP100	M	2-3	SR 29 3 mi S of Immokalee	Vehicle
6/23/2007	K199	F	20 mos.	CR832 0.6 mi W of Forestry tower	Vehicle
6/26/2007	UCFP101	M	4	US41, 1 mile east of Krome Ave	Vehicle
8/2/2007	FP103	F	7	SBCNP	Intraspecific Aggression
8/27/207	K259	M	3 wks	SBCNP	Suspected black bear predation at den
8/27/2007	K260	Unk	3 wks	SBCNP	Suspected black bear predation at den
9/12/2007	UCFP102	M	2	I-75, 1.5 miles east of SR29	Vehicle
9/27/2007	FP128	F	7.5	BCSIR Game pen	Unknown
3/9/2008	UCFP103	M	2-3	Pine Ridge Rd, half way between CR951, Logan	Vehicle
3/14/2008	FP127	M	5	NBCNP -Addition Lands	Intraspecific Aggression
4/12/2008	UCFP104	F	1-2	SR 29 2.6 km north of US 41	Vehicle
4/9/2008	FP157	M	3	CREW	Intraspecific Aggression
4/16/2008	FP131	M	9	Horse Trial grounds, N of CR 858, W of SR 29	Pneumonia
4/23/2008	UCFP105	F	5-6	0.24 miles west of Janes Scenic, N side of Mud Tram	Unknown or Accidental
5/4/2008	UCFP106	M	2	4736 Leonard Boulevard, Lehigh Acres, Lee Co.	Vehicle
5/12/2008	FP138	M	7	5.5 km north of Monument Lake Campground BCNP	Unknown
5/22/2008	UCFP107	F	2-3	2.4km south of US41 on CR951, moving east to west	Vehicle
5/23/2008	K268	F	2 weeks	SBCNP	Consumed (Intraspecific Aggression?)
5/23/2008	K269	M	2 weeks	SBCNP	Consumed (Intraspecific Aggression?)

<sup>a</sup> BCNP=Big Cypress National Preserve; BCSIR = Big Cypress Seminole Indian Reservation; EVER = Everglades National Park; FPNWR = Florida Panther National Wildlife Refuge; FSPSP = 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.

# 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;
- Continue a collaborative study with the University of Florida to complete a population viability analysis for panthers using current and historic data;
- 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;
- Initiate research assessing predation rates, prey selection, and movement patterns of Florida panthers using GPS 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 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 2008

Beginning Balance July 1, 2007	\$121,161
Fiscal Year 2006-2007 Actual Revenue	
Panther License Plate Annual Use Fees	\$ 1,954,491
Interest Earnings	32,702
Miscellaneous	925
Total Actual Revenue	\$ 1,988,118
Fiscal Year 2006-2007 Appropriations	
Panther Management	\$566,005
Panther Research	337,571
Law Enforcement	0
Administration	13,362
Service Charge to General Revenue	144,992
Reversions	(172,210)
Total Appropriations	\$889,720
Projected Fund Balance June 30, 2008	\$1,219,559

July 2008  
 Office of Finance & Budget  
 Florida Fish and Wildlife Conservation Commission