

**Environmental Assessment
for the
“Interagency Florida Panther Response Plan”**

**Prepared by:
United States Fish and Wildlife Service
Florida Panther National Wildlife Refuge
3860 Tollgate Blvd., Suite 300
Naples, Florida 34114**

**Prepared for:
United State Fish and Wildlife Service
Southeast Region
1875 Century Blvd.
Atlanta, Georgia 30345**

**In Cooperation with:
National Park Service
100 Alabama St. SW
1924 Building
Atlanta, Georgia 30303**

And

**Florida Fish and Wildlife Conservation Commission
620 South Meridian Street
Tallahassee, Florida 32399**

March 2008

Table of Contents

1.0 Introduction.....	3
1.1 Purpose of the Proposed Action.....	3
1.2 Need for the Proposed Action.....	3
1.3 Proposed Action.....	4
1.4 Coordination and Consultation	4
1.4.1 Relationship to Existing Laws and Statutes.....	5
2.0 Alternatives Including the Propose Action.....	6
2.1 Alternative A: Proposed Action.....	6
2.2 Alternative B: No Action	7
2.3 Alternative C: Frequency/Proximity Management.....	8
2.4 Other Alternatives Considered but Rejected.....	10
3.0 Affected Environment.....	11
3.1 Biological Environment.....	11
3.2 Social Interests	15
3.3 Cultural Resources	16
3.4 Coordination and Permits	17
4.0 Environmental Consequences.....	18
4.1 Alternative A, Proposed Action.....	18
4.1.1 Direct and Indirect Impacts.....	19
4.1.2 Cumulative Impacts	22
4.2 Alternative B, No Action	24
4.2.1 Direct and Indirect Impacts.....	24
4.2.2 Cumulative Impacts	26
4.3 Alternative C, Frequency/Proximity Management.....	26
4.3.1 Direct and Indirect Impacts.....	26
4.3.2 Cumulative Impacts	28
4.4 Summary of Environmental Consequences by Alternatives	28
5.0 List of Preparers.....	31
6.0 Literature Cited/Consulted.....	32
Appendix A (Cooperating Letters)	37
Appendix B (March 5, 2004 FWC Letter to Miccosukee Tribe).....	41
Appendix C (Florida Panther Response Plan)	45
Appendix D (Response to Comments)	77

1.0 Introduction

The Florida panther (*Puma concolor coryi*) is one of the rarest large mammals in the United States. Historically, the panther was distributed from eastern Texas or western Louisiana and the lower Mississippi River Valley, east through the southeastern United States including all of Florida (Young and Goldman 1946). Although occasional sightings and signs were reported throughout the rural southeast between 1950 and 1980, the only confirmed panther population was found in south Florida (Anderson 1983). Geographic isolation of the Florida panther, combined with habitat loss, population decline and associated inbreeding, resulted in significant loss of genetic variability and decline in the overall health of the population. To restore genetic variability, eight female Texas panthers were released in strategic locations within south Florida in 1995. Due to the genetic augmentation, the population grew from less than 50 panthers in 1995 to the current population of 80-100. All offspring of the Texas panthers are considered to be Florida panthers.

The panther is listed as endangered under both the Endangered Species Act and Florida law. Increased development into panther habitat has heightened the potential for human-panther interactions, thereby raising public safety awareness issues. Due to the panther's potential for extinction, conflicts with humans raise issues that require careful consideration and action such that the intent and ability to conserve the species is unaltered while at the same time the safety of the public remains paramount. This document considers alternatives for managing human-panther conflicts that are intended to result in non-significant impacts to the panther, humans, and the environment.

1.1 Purpose of the Proposed Action

The Florida Fish and Wildlife Conservation Commission (FWC), U.S. Fish and Wildlife Service (FWS), and National Park Service (NPS) established the Florida Panther Interagency Response Team (Response Team) in June 2004 to manage human-panther interactions while promoting human safety and assuring the continued existence and recovery of this endangered animal. The Response Team, comprised of panther experts and agency representatives, was tasked with developing the Interagency Florida Panther Response Plan (Response Plan) to provide guidance for the agencies so that interactions will be handled consistently and quickly while addressing the primary objective of public safety, balanced with the need to recover an endangered species. Because appropriate human behavior is a key to coexisting with wildlife, the Proposed Action also addresses public education and outreach focusing on living and recreating in panther habitat. The Proposed Action establishes the Florida Panther Outreach Working Group to help increase people's understanding of panthers which is essential to the successful conservation and recovery of this animal.

1.2 Need for the Proposed Action

Florida panthers occur primarily in southern Florida and most individuals reside south of Lake Okeechobee. Recovery actions over the past 25 years, particularly genetic augmentation initiated in 1995, enabled the population to grow from 30-50 to 80-100 panthers. During this same period, the Florida human population has grown 260%, from about 5 million to nearly 18 million people. Because of increases in numbers of people and panthers, urban/suburban areas now interface with panther habitat, increasing the possibility

of human-panther interactions. Since 2002, there has been an increase in human-panther interactions in south Florida including instances of depredation on livestock/pets. In two of these instances, due to repeated depredations that presented a serious threat to public safety (compounded by health issues with one of the two panthers), the respective panthers were permanently removed from the population and placed in captivity. Also contributing to the depredations by these two panthers were issues related to inadequate livestock husbandry practices that facilitated the panthers' access to the domestic animals. From 2004-2006, public complaints generated by repeated sightings of a female panther and her offspring in a sparsely populated rural community within the Big Cypress National Preserve also increased the agencies' awareness of the need for a management plan to provide more definitive guidance to respond to and manage human-panther interactions. In this situation, the panthers were attracted to a high concentration of white-tailed deer and hogs that frequented the upland habitat in the community, including a NPS environmental education center. Local residents and Miccosukee tribal representatives voiced concerns about the frequent sightings of the panther family group. In 2004, one of the sub-adult kittens was removed from a tribal ceremonial site to a state forest (60 miles away) out of respect for tribal concerns. These interactions, combined with the lack of established agency guidance for managing human-panther interactions and depredations, demonstrated the need for the development of an interagency response plan. The agencies also recognized a need to educate the public about panther life history and behavior and how to safely live and recreate in panther habitat.

1.3 Proposed Action

The proposed action is to manage human-panther interactions and domestic animal depredations in a manner that will promote both public safety and the conservation of an endangered species.

1.4 Coordination and Consultation

The National Environmental Policy Act of 1969 (NEPA), 42 USC § 4321-4347, and its implementing regulations at 40 CFR Parts 1500-1508, require early and continuous communication with the public, early consideration of significant environmental consequences, considerations of all reasonable alternatives, and the use of all practicable means to avoid or minimize any possible adverse effect of the action on the quality of the human environment (40 CFR § 1500.2[f]). Section 1506.6 of the regulations requires Federal agencies to make diligent efforts to involve the public in preparing and implementing NEPA procedures.

Under Secretarial Order 3206 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act) and Executive Order 13175 (Consultation and Coordination with Indian Tribal Government) the FWS and NPS consulted with the Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida to solicit their comments and input while drafting the plan and Environmental Assessment. The FWS, NPS, and FWC cooperated with the development of the plan and the Environmental Assessment (EA) (Appendix A). Public comment on the draft EA was solicited through a notice in the Federal Register for 60 days from May 25 through July 24, 2006. Additionally, to improve the quality and credibility of the scientific information, the FWS conducted a formal "peer review" process for the draft Interagency Florida Panther Response Plan at the same time.

Six peer reviewers were selected from lists provided by the FWC, NPS, Miccosukee Tribe of Indians of Florida, Seminole Indian Tribe and the FWS. Five of the six peer reviewers provided comments on the Interagency Florida Panther Response Plan. Five letters were received from the public and/or environmental community and one letter was received from a tribe. Responses to specific comments were included in the revised Environmental Assessment. The availability of the revised Environmental Assessment was announced in the November 2, 2007 *Federal Register*. Written public comments were accepted until December 3, 2007. One email and one letter were received from the public and one letter was received from a tribe. Responses to these comments are included in Appendix D.

The Response Plan was discussed at two public forums. The first town hall meeting was held in November 2006 in Golden Gate Estates (Collier County). The second meeting was conducted in February 2007 in the Everglades City (Collier County). No public comments were taken at these meetings.

1.4.1 Relationship to Existing Laws and Statutes

The FWS, NPS, and FWC prepared this EA in accordance with NEPA, which requires assessments to be conducted which describe the environmental consequences of proposed actions and various alternatives.

Other statutes and regulations related to this EA are described below:

1. Endangered Species Act of 1973 (16 USC 1531-1544) (ESA) – ESA’s implementing regulations at 50 CFR, Subpart C, administers prohibitions on taking endangered wildlife and exemptions therein (§17.21(c) *Take*) through harassment, killing, injuring or other means in defense of human lives or in response to a threat to human safety. This is consistent with the requirements of NEPA and the Council of Environmental Quality NEPA regulations.
2. American Indian Religious Freedom Act of 1978 - Public Law 95-341 (42 U.S.C. 1966) establishes as policy of the United States the protection and preservation for American Indians of their inherent right to freedom to believe, express, and practice their traditional religions. This act directs Federal agencies to evaluate their policies and procedures, in consultation with native traditional religious leaders, in order to determine changes required to protect and preserve Native American religious cultural rights and practices.
3. Florida Administrative Code (FAC) 68A-4.001 - FAC 68A-4.001 provides prohibitions to intentionally feeding black bears, foxes, raccoons, or sandhill cranes and thereby creating a public nuisance.
4. Florida Administrative Code (FAC) 68A-27 - FAC 68A-27 establishes rules relating to threatened and endangered species under Florida law.
5. National Park Service Organic Act (16 USC 1, 2-4) and General Authorities Act (16 USC 1a-1) - These acts direct NPS to conserve the scenery, the natural and

historic objects, and the wildlife, and to provide for the enjoyment of those resources in such a manner as to leave them unimpaired for future generations.

6. National Wildlife Refuge System Act (USC 460k, 664, 668dd) - This act governs the general administration of national wildlife refuges. All national wildlife refuges are maintained for the primary purpose of wildlife and ecological conservation and, where appropriate, restoration.

2.0 Alternatives Including the Proposed Action

In accordance with mandates established under NEPA, the FWS and NPS are required to consider a full range of reasonable alternatives for addressing and responding to major public issues, management concerns, and resource conservation opportunities associated with issues arising from human-panther interactions. In determining whether these alternatives provided a satisfactory range of options, the FWS, NPS, and FWC evaluated the following information:

- < Biological requirements of panthers and other protected fauna and flora potentially affected by administration of the plan;
- < Social, economic, environmental, cultural and other relevant issues and concerns identified during both internal and public review of the proposed plan; and
- < Legal mandates of the FWS under NEPA and the ESA.

Three alternatives were analyzed using these criteria. All of these alternatives have been used by the FWS, NPS, and FWC in managing human-panther interactions. Alternative B (No Action) was used prior to March 2004 to manage interactions. Alternative C was utilized from March 2004 until February 2005 and was based on guidance outlined in a letter from the FWC to the Miccosukee Tribe of Indians of Florida on March 5, 2004 (Appendix B). Alternative A, although only a draft, became the guiding document for human-panther interactions in February 2005.

2.1 Alternative A: Proposed Action

This alternative includes the *Interagency Florida Panther Response Plan* (Appendix C), along with the establishment of an interagency Response Team to implement necessary actions as prescribed by the Response Plan. The Response Team includes law enforcement officers, wildlife biologists, public information officers, and other agency officials from FWS, NPS, and FWC. This alternative has been utilized since February 2005 by the interagency team and provides management guidelines based on the best available science and information. This plan prioritizes public safety, while managing human-panther interactions and domestic animal depredations through analysis of human activity and panther behavior. This alternative is based on western states' cougar management protocols for managing depredations and human-cougar interactions. The Cougar Management Guidelines (Cougar Management Working Group 2005) were used to develop the risk assessment and response for each classification (the Guidelines were written by 13 experts in mountain lion management). This alternative is based on the best science available and is in compliance with the scientific requirements of the NEPA.

Under this alternative, the Response Team's responsibility will be to review information related to depredations and human-panther interactions, classify these situations based on the documented behavior of the panther, provide an action plan to the responsible agencies, and take approved and appropriate action.

There are five human-panther interaction classifications: Sighting(s); Encounter(s); Incident; Threat; and Attack. Panther depredation on domestic animals is discussed separately. Factors including the panthers' behavior, attractants in the area (e.g. native prey concentrations, free-ranging pets or livestock), and/or human activity, will be considered during the evaluation of the interaction to determine the level of human risk. Management options may include all or some of the following: outreach and education; aversive conditioning; and/or removal of cached panther prey. If a panther's behavior indicates a high risk to human safety, it will be permanently removed from the population (captivity or euthanasia). Relocation is an option only if the panther's location presents a possible threat to human safety (e.g. a dispersing male panther wanders into an urban neighborhood and cannot find its way out) or there is a threat to the survival of the panther (e.g. a panther wanders into an area that contains numerous physical hazards). Depending on specific circumstances, the panther may be captured and relocated to suitable habitat, if available, or to an approved captive facility, if necessary. This alternative also includes guidelines for developing an outreach and education program to help people understand panther behavior and actions that should be taken when living or recreating in panther habitat.

2.2 Alternative B: No Action

In this alternative, human-panther interactions and depredations are managed on a case-by-case basis depending on location and public safety concerns. This alternative was utilized by FWC, NPS, and FWS prior to March 2004. This alternative has the potential to have agencies working at cross-purposes, thereby providing less protection for people. Furthermore, the lack of guidelines could lead to the unjustified removal or relocation of a panther.

On state and private lands the FWC is the lead agency in consultation with the FWS. NPS and the FWS are the leads on lands administered by their respective agencies. The Florida panther is protected under both the ESA and Florida law. Under State and Federal laws and regulations, panther management and protection are the primary responsibility of the FWS and FWC. The NPS is responsible for coordinating panther management on its lands. Panther captures and handling activities by the NPS and the FWC are permitted by the FWS through section 10 of the ESA and by the FWC under Title 68A of the FAC.

Under this alternative, none of the agencies have established guidelines or policies to manage human-panther issues. There are no set criteria for interagency coordination. Human-panther interactions are reported to the various agency offices. These reports may or may not generate a response from an agency, depending on location of the interaction and credibility of the report. If initially thought to be credible, law enforcement officers normally respond to the complaint if the observation of a panther (or sign) is in close proximity to a human or human-occupied structure or area, or involves suspected depredation of livestock or pets. Based on the officer's judgment of the situation, agency biologists may be asked to respond

to the scene to confirm that a panther is involved and to work with the law enforcement officers and the agency's chain-of-command to determine the appropriate response. The immediate response of agency personnel is dependent on exigent circumstances related to public safety and the safety of the panther. If considered warranted, coordination is conducted with the FWS to insure that the ESA is enforced.

Management actions may include increased monitoring of the situation, closure of an area, coordination with the private landowner to modify livestock husbandry practices, aversive conditioning or removal of the panther. Removal of the animal may be done to protect the animal, for public safety concerns, or in deference to perceived danger from the public. An analysis of panther behavior and related human activities might not be taken into consideration during development of a management action. Relocation of a panther outside of its established home range may be used to alleviate a human safety concern. When removal is determined as an appropriate action, coordination is initiated between the FWC, the FWS, and if necessary, the NPS, to determine if the animal is to be removed from the population permanently (including captivity or possible euthanasia) or relocated to other suitable habitat, if available. Capture and removal of a panther may be done by either the FWC's or NPS's panther capture teams, depending on location or other extenuating circumstances.

The agencies do not have an outreach or media plan for panther management. Brochures and handouts are not available to the public; however, the public can access extensive information on the Florida panther through the FWC's PantherNet (www.myfwc.com/panther).

2.3 Alternative C: Frequency/Proximity Management

This alternative includes a Response Team and Response Plan and is similar to Alternative A except in the classification and response to human-panther interactions and depredations. The Sighting, Encounter/Multiple Encounters, and Incident sections included in Alternative A are replaced with one section (Frequenting/Loitering) and the Depredation section is modified. The Threat and Attack sections are the same as Alternative A. This alternative provides rigid protocols based on frequency of sightings and proximity to human-occupied structures without considering panther behavior or influences of human activity on panther behavior. Human risk is not the primary decision-making factor with this alternative. Panthers may be radio-collared inappropriately for non-research purposes to allow agency personnel to detect the animal's proximity to human-occupied areas. This plan could lead to the unjustified removal of a panther that is merely in close proximity to a human-occupied structure but has not demonstrated any aggression or threatening behavior toward people. Relocation of panthers outside of their established home ranges may be used to alleviate a human-panther proximity concern.

Management protocol related to panther proximity to human-occupied structures and frequency of occurrence were utilized by the interagency Response Team from March 2004 to February 2005, based on guidelines outlined in the March 5, 2004, letter from the FWC to the Miccosukee Tribe of Indians of Florida (Appendix B).

Classification of and Response to Human-Panther Interactions and Depredations

Under this alternative the classification section includes responses related to frequency of sightings and encounters, occurrences of predation, and proximity of a panther to human-occupied structures. Responses to threatening and attack behaviors are the same as in Alternative A.

Frequenting/Loitering: *The same panther is sighted repeatedly in or near a residential area, school, campground or similar human-occupied structure.*

If management actions are warranted, the Response Team shall coordinate resources among all affected agencies and will develop an action plan that will include some or all of the following steps:

Action:

- Provide informational material to residents, landowners and recreational users.
- Post areas with signs where repeated, verified sightings have occurred. Signs will include information on precautions and contact information.
- Offer recommendations to the affected landowner and residents regarding improvements to domestic pet/livestock husbandry practices (e.g., wire fencing, electric fence, night enclosure).
- Offer recommendations to the affected landowner and residents on landscape modifications to reduce attractiveness to panthers and prey species.
- Remove any panther prey items cached nearby, and encourage local public to cease all wildlife feeding that may attract panthers or panther prey (deer, hogs, raccoons).
- If a panther continues to remain in the area, capture and radio-collar panther or mark it with paint projectile. Paint marking is temporary.
- Monitor location of panthers and document distance from occupied structures and number of sightings of individual panthers, if possible.
- If panther is located within 100 yards (90 meters) of a human-occupied structure, apply aversive conditioning.
- If the same panther is documented within 100 yards (90 meters) of a human-occupied structure three times and aversive conditioning has been applied at least twice, then the panther will be relocated within its home range or elsewhere or removed from the population as determined by the Response Team.

Depredation: *Panther that preys upon domestic pets (e.g. dogs, cats) or domestic livestock (e.g. goats, pigs).*

If management actions are warranted, the Response Team shall coordinate resources among all affected agencies and will develop an action plan that will include some or all of the following steps:

Action:

- Provide informational material to residents and landowners.
- Offer recommendations to the affected landowner and residents regarding improvements to domestic pet/livestock husbandry practices (e.g., wire fencing, electric fence, night enclosure, etc).
- Offer recommendations to the affected landowner and residents on landscape modifications to reduce attractiveness to panthers and prey species.
- Remove any panther prey items cached nearby, and encourage local public to cease all wildlife feeding that may attract panthers or panther prey (deer, hogs, raccoons)
- If panther continues to remain in the area, capture and radio-collar panther or mark panther with paint projectile. Paint projectile marking is temporary.
- Monitor location of panthers and document distance from occupied structures and number of sightings of individual panthers, if possible.
- If the same panther continues to prey on livestock or pets and/or is documented within 100 yards (90 meters) of a human-occupied structure three times and aversive conditioning has been applied at least twice, then the panther will be relocated within its home range or elsewhere or removed from the population as determined by the Response Team.

2.4 Other Alternatives Considered But Rejected

The option of utilizing primarily law enforcement officers on the Response Team and eliminating or curtailing the involvement of biologists, to put a higher emphasis on public safety, was considered but rejected. Utilizing only law enforcement officers as the primary responders and excluding biologists from the Response Team would make it more difficult to determine if the interaction or depredation involved a panther as opposed to another species. In addition, the expertise to determine if a panther's behavior is non-threatening and/or indicates normal activity related to curiosity or attraction to prey animals, may be lacking if only law enforcement personnel are involved. Panther field biologists are experts in the biology, ecology, and behavior of this species. Although integral to assuring public safety as part of the Response Team, law enforcement officers may or may not have biological science backgrounds or the extensive level of experience needed to evaluate a situation involving a panther. Even with training, to differentiate between large dog and panther tracks requires a

level of expertise and experience. For most people it is impossible to determine if one or multiple panthers are frequenting an area based on tracks, fleeting glimpses and/or other sign. It would be difficult for an individual lacking experience in panther field sign to evaluate a human-panther interaction or depredation; consequently, to thoroughly evaluate human-panther interactions in a timely and appropriate manner, biologists must be involved with the evaluation and management of the situation.

Another option, capturing and radio-collaring every panther, was considered to increase the ability of the agencies to track panthers when they are in close proximity to humans. This option was also rejected. There is no practical way to capture every animal, nor have capture teams been allowed to conduct activities on many private lands that have panthers inhabiting them. Under section 10(a)(1)(a) of the ESA, the FWS permits panther captures for specific purposes related to research. Only trained biologists and trackers are permitted to capture panthers. These individuals must follow specific protocols that are directly tied to capture activities. These activities involve significant risk to panthers and the capture team. Additionally, this option would not provide any additional public safety due to the fact that the agencies cannot guarantee that every panther in an area is radio-collared. This alternative would also divert personnel and funding from other agency work.

3.0 Affected Environment

This section of the EA describes the portions of the human environment potentially affected by the proposed and alternative actions. In reviewing a proposed activity for NEPA compliance, the Council on Environmental Quality generally considers the following elements of the human environment:

- Physical Environment (topography, wetlands, floodplains, coastal zones, subsurface conditions, hydrology, soils, energy and mineral resources, toxic substances, and air);
- Land Use (zoning, existing land uses, proposed long-range plans, farmland, and timberland);
- Biological Environment (vegetation, fisheries, wildlife, and threatened/endangered species);
- Cultural Resources (historical sites and standing structures, architectural issues, archaeological sites, and Native American issues)
- Social Interests (human population, human health/safety, and public services);
- Economy (employment, income sources, and economic uses of affected environment);
- Aesthetics (scenic value, noise and odor).

From the list of requisite elements, the **Biological Environment, Social and Economic Interests** and **Cultural Resources**, apply to the proposed action because actions relating to one element will have a consequential effect on the other, and vice versa. The proposed action will not adversely or beneficially affect the remaining requisite elements; therefore, no further discussion of these elements is required.

3.1 Biological Environment

This section presents a general description of the biological environment that could be affected by the three alternatives. Management of human-panther interactions primarily will

affect individual panthers, but also could affect the panther's primary prey species (white-tailed deer and feral hogs), and competing predators (black bears, bobcats, and coyotes).

South Florida represents a unique combination of geological history, climate, geography, and environmental forces to make it an important reservoir of landscape, community, and species diversity. The only known breeding population remaining for the Florida panther occurs in and around the south Florida counties of Collier, Lee, Miami-Dade, Hendry, and Monroe. The Big Cypress Swamp physiographic region comprises much of the presently occupied area. Water is the dominant natural resource of this region. Because of the relatively flat limestone underlain topography, 50-75 percent of the area may be flooded during the wet season. These conditions typically last for several months. Extensive sawgrass marshes, prairies, forested swamps, shallow sloughs and upland hammocks, and ridges characterize the region. Public lands comprise 73 percent of the known panther habitats in this region (Kautz et al. 2006). The habitats include upland communities of rockland pine forests and hardwood hammocks. Wetlands are forested swamps of cypress and mixed hardwoods, marshes, prairies, and sloughs.

Florida Panthers

Historically, the panther occurred throughout the southeastern United States, but today occupies less than 5 percent of its historic range. Habitat loss, degradation, and fragmentation are the most significant threats to the continued survival of the panther throughout its range. In addition, human-related disturbance and mortality (including road kill), disease, genetic problems, intraspecific aggression and contaminants are adversely affecting the panther population.

Survey reports and more than 70,000 locations of radio-collared panthers recorded between 1981 and 2004 found that reproduction is known only in the Big Cypress Swamp/Everglades physiographic region in Collier, Lee, Hendry, Miami-Dade, and Monroe Counties south of the Caloosahatchee River (Belden et al. 1991). Although confirmed panther signs, male radio-collared panthers, and uncollared males killed by vehicles have been recorded outside of south Florida, no female panthers have been documented north of the Caloosahatchee River since 1973 (Nowak and McBride 1974, Belden et al. 1991., Land and Taylor 1998, FWC 2000, McBride 2002, Belden and McBride 2005).

Panthers are wide ranging, secretive, and occur at low densities. Average home range sizes of adult male panthers have been estimated from 128,000 ac (51,900 ha) to 161,000 ac (65,000 ha) and from 47,700 ac (19,300 ha) to 98,000 ac (40,000 ha) for adult females. Transient male home range sizes have averaged 150,000 ac (61,000 ha) (Maehr et al. 1991a, Comiskey et al. 2002). Numerous factors influence panther home range size and the reproductive success of females, including habitat quality, prey density, and landscape configuration (Belden et al. 1988, Comiskey et al. 2002).

Primary panther prey are feral hog and white-tailed deer (Maehr et al. 1990, Dalrymple and Bass 1996). In Everglades National Park, where feral hogs are scarce, the primary food source is white-tailed deer (Dalrymple and Bass 1996). Generally, feral hogs constitute the greatest biomass consumed by panthers north of the Alligator Alley section of Interstate 75,

while white-tailed deer are the greatest biomass consumed to the south (Maehr et al. 1990). Secondary prey species include raccoons, nine-banded armadillos, marsh rabbits, and alligators (Maehr et al. 1990, Dalrymple and Bass 1996). No seasonal variation in diet has been detected. Adult panthers generally consume one deer or hog per week, supplemented by opportunistic kills of smaller prey (Ackerman et al. 1986). A female with kittens may need two such kills per week. Maehr et al. (1990) documented domestic livestock infrequently in scats or kills, although cattle were readily available on their study area. The distribution of panthers is primarily dependent on the availability of habitat that provides adequate cover and sufficient large prey items such as deer and hogs. As large predators, habitats that accommodate panthers are also generally appropriate for black bears, coyotes and bobcats. In rural communities where houses are dispersed among parcels larger than one acre, panthers as well as their prey and other large mammals are likely to occur.

Intraspecific aggression accounts for 42 percent of all mortalities among radio-collared panthers (Jansen et al. 2005, Land et al. 2005). Unknown causes and collisions with vehicles account for 24 and 19 percent of mortalities, respectively. From 1990-2004, mean annual survivorship of radio-collared adult panthers was greater for females than males (Land et al. 2005). Most intraspecific aggression occurs between male panthers; but, aggressive encounters between males and females, resulting in the death of the female, have occurred. Defense of kittens and/or a kill is suspected in half (5 of 10) of the instances through 2003 (FWC 2003).

Rapid development in southwest Florida has compromised the ability of landscapes to support a self-sustaining panther population (Maehr 1990, 1992). Kautz et al (2006) reported that there are approximately 3,548 mi² (9,189 km²) of occupied panther range in south Florida and that approximately 27 percent is comprised of landscapes under private ownership. Although the panther population has grown from 30-50 to approximately 80-100 since 1995, habitat continues to decline in quantity and quality. Consequently, less vacant habitat is available for panthers in south Florida. The potential for human-panther interactions on public or private land exists and is likely to increase as development spreads into panther habitat and as more people live and recreate within public lands.

White-tailed Deer

There are approximately 700,000 white-tailed deer (*Odocoileus virginianus*) in Florida (Schaefer and Main 2001). White-tailed deer are the most economically important big game mammal in North America and Florida. White-tailed deer preferred habitat consists of a mixture of forest, open grasslands, agricultural fields, and riparian areas. Deer are browsers and feed upon a mixture of vegetation, depending on the season of the year. They eat the fresh shoots of woody shrubs and vines, succulent green plants, grasses, acorns, mushrooms, and aquatic plants, in addition to many other types of plants. Natural predators of white-tailed deer in Florida are limited to Florida panthers, bobcats, coyotes and occasionally, black bear.

Feral Hog

The wild hog (*Sus scrofa*) population in Florida consists of free-ranging swine that are descendants of domestic herds that have ranged the Florida landscape since the 1500's. The

wild population of hogs in Florida has been supplemented through the years by deliberate releases to increase hunting opportunities (Giuliano and Tanner 2005). Wild hogs are found in every county in Florida. The estimated population of free-ranging hogs in Florida is 500,000.

Hogs use a variety of habitats. They can be found in pine flatwoods, bottomland hardwood forests, marshes, swamps and agricultural lands. Water availability is a limiting factor for hogs. Wet soil conditions are necessary for hogs because of their need to wallow, which is used as a cooling mechanism and as a way to reduce ectoparasites (Giuliano and Tanner 2005). Seasonal changes in habitat use are related to food availability. Food preferences include hard mast (acorns and hickory nuts) and soft mast (plums, soft fruit). Wild hogs are omnivorous and prefer plant material, but will consume carrion. Wild hogs can cause significant losses to agricultural crops through foraging. Their rooting also can destroy wildlife food plots and gardens.

According to Giuliano and Tanner (2005), humans are the main predator of adult hogs, but alligators, black bears, and Florida panthers also prey on them. Young hogs may be preyed upon by smaller predators including foxes, coyotes, and bobcats. Feral hogs are a major prey item of Florida panthers in southwest Florida (Maehr, et al 1990).

Bobcat

The bobcat (*Lynx rufus*) occurs throughout Florida, as far south as Matecumbe Key. The bobcat is solitary and occupies primarily swamps and forests. They prey on small mammals, birds, and, infrequently, white-tailed deer. Bobcats frequently live within close proximity to humans, although they seldom prey on domestic livestock or pets (Cryer and Mazzotti 2002). The bobcat is an economically-valuable furbearer in Florida.

Black Bear

Florida has only one species of wild bear, the Florida black bear (*Ursus americanus floridanus*). Black bears are solitary with the size of their home range dependent upon the availability of food, the sex, age, and reproductive status of the individual, and population density. The Florida black bear has experienced a significant population reduction due to habitat loss (Schaefer and Sargent 2001) and is restricted to a few large areas of relatively undisturbed habitat. Dense forested areas are their preferred habitat. Black bears are omnivorous and feed on a large variety of vegetation, including tubers, seeds, fruits and young shoots. Black bears occasionally eat small mammals.

Coyote

The coyote (*Canis lutrans*) recently has expanded its range into Florida and is now found throughout the state (Maehr et al. 1996). Coyotes are extremely adaptable and use a wide variety of upland and wetland habitat including urban/suburban areas (Coates, et al 2002), but prefer open terrain (Young and Jackson 1951; Parker 1995). Food includes small mammals, reptiles, fruit, and grass. They are also significant predators of white-tailed deer fawns. In addition to native prey, coyotes also take domestic pets and livestock, including sheep, calves, poultry, hogs, and goats.

3.2 Social and Economic Interests

The region's economy is heavily dependent upon the tourist industry, which has contributed to the rapid growth of the area. Tourism is an important part of Florida's economy. Clean air, a subtropical climate, extensive natural resource amenities and diverse recreational opportunities make the south Florida area extremely attractive to tourists, retirees, and year-round residents. A 2002 survey stated that 66 percent of visitors from other mainland states were likely to participate in a nature-based activity during their vacation (Visit Florida.org 2005). Between the 1990 and 2000 census, the State of Florida's population grew by over 23.5 percent, nearly twice as fast as that of the country (13.1 percent). The three southwestern Florida counties that support the majority of the panther population, Collier, Lee and Hendry Counties, grew 65.3 percent, 31.6 percent and 40.5 percent respectively, during the same period (U.S. Bureau of the Census, 2000). The human population of Collier County, where most panthers reside, more than doubled in 14 years (1990-2004), from 152,000 to 306,000 (U.S. Census Bureau, 2004).

Because peninsular southwest Florida is bounded by the Gulf of Mexico, urban and agricultural growth has naturally expanded to the east into habitats where panthers occur. Relatively isolated towns and communities have been experiencing surging human population growth in recent years. The northern Golden Gate Estates (approximately 100 mi²) was established in the 1960s as part of a 173 mi² subdivision, yet only now is it nearing build-out (Derr 1989). Still, these areas of development maintain a rural setting for homes on lots from one- to five-acre homesteads. Around many homes, trees and shrubs provide ample buffers and visual barriers between home sites and provide cover and seclusion for larger wild animals, including panthers. Shopping centers and other businesses are largely absent in these communities, offering residents a relatively secluded and somewhat isolated lifestyle that attract many people. Here, people are able to raise livestock such as chickens and goats, and maintain acreage for horses. Outside of these rural communities several campgrounds dot the interior portions of south Florida, including camping and RV facilities on state and federal lands, providing wilderness experiences to hikers and campers. In contrast, over the past 10 years, large landowners have sold, donated or bartered agricultural lands and wilderness for large-scale intensive development. Florida Gulf Coast University, built on 760 acres just east of Interstate 75 in Lee County, broke ground in 1995. Since then, intensive housing and infrastructure development has occurred around the university. Despite the intensive development, panthers, bears and various prey species continue to be sighted within these areas. In 2005, groundbreaking began on the Ave Maria University and the town of Ave Maria on 5,000 acres of rural lands, approximately 20 miles northeast of Naples. The University will have an eventual enrollment of 5,000 students. Additionally, construction of 11,000 residences is planned within the Town of Ave Maria (U.S. Fish and Wildlife Service 2005).

Human encroachment into interior southern Florida is placing growing constraints on wilderness-quality lands currently in private ownership. Furthermore, infrastructure development, such as roads, is encumbering panther distributions throughout their ranges. Continued human population growth is expected to increase road mortalities and injuries and potentially increase the likelihood of human interactions with panthers.

3.3 Cultural Resources

Native American tradition and culture have a long, established history in south Florida. The south Florida area spans five counties consisting of three discrete cultural regions – the Okeechobee, Caloosahatchee, and Glades. The Florida Keys, Big Cypress Swamp and the Ten Thousand Islands are considered as either separate regions or subregions associated with the Glades region. These regions were initially delineated by John Goggins in his unpublished monograph on the archaeology of South Florida and augmented by John Griffin's 1988 "The Archeology of Everglades National Park: A Synthesis." Multidisciplinary archaeological investigations undertaken by the University of Florida's Institute of Archaeology and Paleoenvironmental Studies in Charlotte Harbor (Marquardt 1992) and Widmer's (1983) pivotal work on and around Marco Island illuminated the emergence and history of the Calusa. Berialt, et al (2003) and Weisman and Collins (2003) assessed a range of site types located within the Rookery Bay Reserve and the Ten Thousand Islands National Wildlife Refuge. In 2004, Margo Schwadron (2006) initiated archaeological investigations of tree islands scattered across the Everglades National Park's Eastern Expansion Area and along the eastern edge of the Shark River Slough. The discovery and subsequent investigations of the Miami Circle in 1998 led to Wheeler's 2004 National Historic Landmark/ National Register of Historic Places Theme Study of the Tequesta. Weisman (1999, 2000) and Kersey (1975, 1987) provide thoughtful discussions of the history and land use patterns of the Seminole and Miccosukee Tribes. The Everglades National Park's website provides an excellent thumbnail historic sketch of the region and the park. Charlton Tebeau (1957, 1968) authored several useful histories of southwest Florida and the Everglades. His works were based upon an extensive documentary record accumulated by David Graham Copeland and oral histories garnered from a number of early American settlers and their descendents.

The earliest human activity in the area, particularly the Everglades, dates to ca. 6500 years ago. This period is followed by establishment of modern sea level and the transformation from xeric to more mesic and wetter habitat types. By the early 15th century, the first Europeans encountered the Calusa chiefdom in southwest Florida and the Tequesta in southeast Florida. Both of these groups were completely decimated by the mid-18th century by European-introduced diseases and conflict. The remaining Calusa and Tequesta populations immigrated to Cuba during the 1760s, became part of the Spanish fishing "ranchos" system along the southwestern Florida coast, or possibly incorporated into Seminole and Miccosukee groups. The Seminoles and Miccosukees are Creek-affiliated groups, who first appear in northern Florida during the late 1700s. European and American encroachments forced these groups into the Big Cypress and the Everglades by the 1830s. By the end of the Third Seminole War, also known as the Billy Bowlegs War [1855-1858], only about 200 Seminoles and Miccosukees remained in southern Florida. Approximately 4,000 Seminoles and Miccosukees were deported to the Indian Territory in Oklahoma between 1821-1858. Today, the Oklahoma groups are the federally recognized Seminole Tribe of Oklahoma. From those groups that remained in Florida, two federally recognized tribes have arisen. The Seminole Tribe of Florida has reservations at Hollywood, Brighton, Big Cypress, Immokalee, Tampa, and Fort Pierce. The Miccosukee Tribe of Indians achieved formal recognition in the 1950s. The Miccosukee tribe has three reservations: Tamiami, Alligator Alley, and Krome Avenue (Miccosukee Tribe of Indians 2002).

Following the Civil War, Americans began filtering into primarily the coastal regions of Florida. Like the earlier populations, the new arrivals exploited the rich maritime and estuarine resources, as well as establishing small farms and groves. Two historic events profoundly altered the Seminole, Miccosukee, and American land use patterns in south Florida: the creation of Everglades National Park in the late 1940s and Congress's authorization of the Central and Southern Florida Flood Control Project in 1948. Establishment of Everglades National Park effectively eliminated access by the Miccosukees to much of the lands that they consider as their ancestral homelands. Beginning in the late 1940s, the U.S. Army Corps of Engineers and the Central and Southern Florida Flood Control District (now known as the South Florida Water Management District) constructed an extensive and elaborate network of roads, canals, levees, and impoundments throughout south Florida. The project largely sought to provide a consistent water source for urban and agricultural lands and to protect these areas from periodic flooding. This project, although bringing economic growth to the urban and agricultural areas, also substantially degraded the Everglades ecosystem (National Park Service 2007). This ecosystem is vital to the culture and history of the Seminoles and Miccosukee tribes.

Native Americans are an important partner in Florida panther conservation. The tribes and the Florida panther have lived in relative harmony through the centuries. Seminole and Miccosukee families are organized by matrilineal clans, including the Bear, Panther, Wind or Snake clans. The tribes call the panther "Coo-wah-chobee". Members of the Panther Clan hold the role of medicine man within the tribe. The Panther Clan has one of the strongest lines of continuity: over half of the Seminole Indians are members of the Panther Clan (Weisman 1999). In tribal culture, panther tails and claws are thought to alleviate muscle disease and to increase strength and endurance. Also, panthers are an important part of the oral legends that are passed down through the generations. For instance, Seminoles warn their children to be quiet in the early evening when the panther is hunting so as not to scare away the panther's prey. They believe that scaring away the prey would bring illness to their village. Tribal members believe that panthers are sacred and honor them through cultural traditions. The tribes are very concerned about the panther because of its cultural ties to their history (Gallagher 1994).

This action poses no threat to historical structures.

3.4 Coordination and Permits

Under State and Federal laws and regulations, Florida panther management and protection are the primary responsibility of the FWC and the FWS. The Florida panther is protected under the ESA and FAC 68A-27. The NPS is responsible for coordinating panther management on its lands. These three agencies are integral to the management, conservation, and recovery of the Florida panther and are committed to enforcing all applicable Federal and State laws. Florida panther capture and handling activities are permitted by the FWS through section 10 of the ESA and by the FWC under Title 68A of the FAC. Panther management activities on Seminole and Miccosukee Tribal lands will be closely coordinated with Tribal members and designated Tribal employees. The three agencies are committed to working with the Tribes to mitigate any impacts associated with management responses to human-

panther interactions. Necessary management actions will not exclude either Tribe from exercising their customary use and occupancy rights where they exist on NPS lands (Public Law 93-440 and Public Law 100-301).

4.0 Environmental Consequences

This section discusses and evaluates potential impacts of the three alternatives on the biological, social, economic and cultural components of the area. Alternative A, the proposed action, provides a plan that analyzes human activities and panther behavior and bases management actions on guidelines that provide for human safety and protection and conservation of the panther. With Alternative B, human-panther interactions are managed on a case-by-case basis with no established interagency guidelines or protocols. Alternative C bases the level of response to panther proximity to human-occupied structures and frequency of occurrences.

Executive Order 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” was signed by President Bill Clinton on February 11, 1994, to focus federal attention on the environmental and human health conditions of minority and low-income populations with the goal of achieving environmental protection for all communities. The Order directed federal agencies to develop environmental justice strategies to aid in identifying and addressing disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. The Order is also intended to promote nondiscrimination in federal programs substantially affecting human health and the environment, and to provide minority and low-income community’s access to public information and participation in matters relating to human health or the environment. This assessment has not identified any adverse or beneficial effects for the alternatives unique to minority or low-income populations in the south Florida area. The alternatives will not disproportionately place any adverse environmental, economic, cultural, social, nor health impacts on minority or low-income populations.

4.1 Alternative A – Proposed Action

This alternative includes an interagency Florida panther response team and plan. The plan provides guidelines for evaluating domestic animal depredations and human-panther interactions and determining the appropriate management responses based on panther behavior and analysis of human activity. Because understanding panther behavior and modifying human activity will help reduce depredations and negative human-panther interactions, this alternative also includes the development of a public outreach strategy for living and recreating in panther habitat. This action prioritizes public safety. It also minimizes impacts to the biological, social, economic and cultural resources by utilizing a science-based strategy for managing human-panther interactions while promoting socially-responsible human responses to panther interactions and depredations through outreach and education. This action provides flexibility to adjust management actions as needed for public safety concerns and panther population changes into the future.

4.1.1 Direct and Indirect Impacts

Biological Impacts: Under this alternative, relocation or removal would only be allowed under very limited circumstances. When authorized, relocation would be within the animal's home range, if known, or to an appropriate release site. The level of impact caused by removing an individual from the panther population would be affected by the sex and or age of the animal removed, the status of the panther population in the area from which it was removed, and the size and demographics of the panther population at the release site (unless the animal is transferred to captivity or euthanized). For instance, removing a female panther and her dependent kittens could have a much greater adverse effect on the panther population than removing a young dispersing male. Additionally, if the local panther population consists of few breeding females, and the animal removed is a breeding female, then the action could reduce the number of kittens born within the area for several years. Kautz et al. (2006) estimated that existing panther habitat could support 79-94 panthers. Based on the 2002-2003 field count by McBride (2003) of 87 panthers, the existing habitat south of the Caloosahatchee River may be at carrying capacity. Currently, there are no approved plans to relocate panthers north of the Caloosahatchee. Consequently, any panther relocated outside of its home range most likely would be released within the home range(s) of resident panthers south of the Caloosahatchee River, which could cause a disruption in the social structure of the local panther population, and increase the likelihood of intraspecific aggression between panthers. Intraspecific aggression is the leading cause of mortality with panthers and relocation could increase the likelihood of this occurrence resulting in a higher than normal mortality rate for relocated animals. Ruth et al. (1998) conducted research on relocated cougars in New Mexico and documented low survival rates and unpredictable movements.

Intraspecific aggression was responsible for the death of a relocated Florida panther in 2005. This 10-month old male panther was removed from the Big Cypress National Preserve in May 2004 because it had been utilizing an area near a Native American ceremonial site. The panther was removed out of respect for the cultural and religious significance of the site to the Miccosukee Tribe of Indians of Florida. The panther was relocated 60 miles north to a state forest. In January 2005, the relocated panther was killed by another panther.

Removal to captivity effectively eliminates the animal from the breeding population. These animals potentially could become part of a captive breeding program, but currently, there is no established program to breed panthers in captivity for future releases into the wild. Obviously, euthanasia permanently removes the animal from the population, eliminating any breeding potential. Euthanasia would only be done in cases where there is an immediate threat to humans that require a panther to be killed for public safety. In other circumstances euthanasia could be used due to the poor health of the panther, or if there is lack of approved captive facilities available and the agencies have exhausted all efforts to find such a facility. Guidelines are being developed to determine qualified captive facilities.

Aversive conditioning is an experimental management technique. Aversive conditioning, by definition, causes disturbance to a panther and may result in take as defined in the ESA in the form of harassment and possibly harm. The need for aversive conditioning has been

relatively low in the past, and it is not known what effect increased use of aversive conditioning could have on the panther population. Aversive conditioning's goal is to cause the panther to associate humans with an unpleasant experience. Aversive conditioning causes the targeted individual to immediately leave the area where the conditioning was conducted. If the panther is a female with young kittens, this harassment could cause temporary, and possibly permanent, abandonment of the kittens. If the kittens are older, they may become confused and get separated from their mother, causing additional stress to both mother and kittens. If roads or other hazards are located nearby, the panther(s) may be exposed to vehicular collisions. Also, if the panther had just made a kill, the harassment associated with aversive conditioning may cause the animal to abandon its kill. If the prey item is found in close proximity to a human-occupied structure and removed by the agency personnel to further reduce the panther's attraction to the site, then the animal will need to expend additional energy to hunt and capture more food. This extra energy expenditure could be detrimental to the health and survival of the animal, depending on its current health status. Agencies will minimize the extent of take associated with capture, handling, and aversive conditioning and ensure that any such take is authorized, pursuant to section 7 and section 10 of the ESA. Because aversive conditioning is experimental, it must be applied uniformly to collect and update data concerning panther behavior in response to the application of this technique.

If a panther is removed or relocated, prey species in that area may be impacted. As panthers are one of the primary predators of white-tailed deer and feral hogs, removal of a panther could cause a very limited increase in the prey population in that area. Conversely, the area receiving the panther may see a minor decrease in prey species due to increased predation pressure. This change in prey densities due to the removal or relocation of a panther may affect prey availability for other predators. Although bobcats and bear occasionally take deer and hogs, these predators will not likely be adversely affected by the presence of a panther. However coyotes can be a major predator on fawns. Consequently, the effect of the removal or relocation of a panther on the local white-tailed deer population could affect the prey availability (either positively or negatively) for coyotes (which are not native to south Florida).

Public education and outreach are important components to the Response Plan and are essential to the successful conservation and recovery of the panther. An outreach team consisting of various government agencies and private organizations has been created to develop various outreach materials. Signage, brochures, leaflets, and other outreach/educational material will be provided to the members of the public that live, recreate or work in panther habitat. Meetings will be held with local communities to educate residents about panthers and how to live with them. The goal of the outreach section of the response plan is to change people's behavior to reduce the probability of a negative human-panther interaction. The direct effect on panthers may include the reduction of available native prey near human-occupied structures due to the elimination of wildlife feeding. Exclusionary fencing may change a panther's behavior by preventing prey from entering an area and forcing the panther to hunt elsewhere. Livestock that are properly secured would become unavailable to panthers, forcing them to look elsewhere for prey. By reducing panther attractants and teaching people how to live and recreate safely in panther habitat,

negative interactions between panther and humans will be reduced, which will reduce the likelihood of a threatening situation occurring that could result in harm to a human or the removal of a panther.

Social and Economic Impacts: The first priority of Alternative A is public safety. Implementation of this proposed action should reduce negative interactions between humans and panthers due to the outreach and education component. Teaching people how to live and recreate in panther habitat will enhance their safety and increase their tolerance of living with all wildlife species. A “Living with Florida Panthers” brochure will be used as one of the primary tools in distributing information to the public.

Florida panthers and their habitat are an important component of the local and state economy. At least one economic study estimates that 78 percent of tourists engage in activities supported by natural resources found in Collier and Lee Counties, both strongholds for the Florida panther (Bell 2002). Perhaps more compelling is the fact that Floridians are willing to pay to conserve panthers. To date, more than 1.3 million Florida panther specialty license plates have been issued, generating nearly \$42 million dollars for panther research and management ([http://www.hsmv.state.fl.us/specialty tags/ProtectPanthres.html](http://www.hsmv.state.fl.us/specialty_tags/ProtectPanthres.html)).

When living in areas known to be utilized by panthers, residents should provide shelters or fencing for livestock or pets to prevent depredation by panthers or other predators (bobcats, coyotes, etc). Additional safety-related improvements might include outdoor lighting or fencing to exclude native prey from the area, thereby reducing attractants for panthers. Although these improvements will improve safety for the residents and their domestic animals, the costs of these improvements could have a negative impact on the homeowners. Adults will need to more closely supervise children and keep them inside between dusk and dawn to reduce the likelihood of a negative human-panther encounter. This could change the time, duration and quality of the children’s outdoor play time. However, empowering citizens by providing them knowledge and skills on how they can keep their children, livestock and pets, safe will decrease risk and fear, increasing the quality of life for many people living in panther habitat.

Individuals that recreate in panther habitat will be encouraged by land management agencies to take precautions that may impact their outdoor experience. Children will need to be closely supervised and kept close to adults. Pets will need to be leashed. Outdoor activities may need to be restricted during dawn and dusk to reduce human activity when panthers are most active. Although these restrictions will increase public safety, the quality of the outdoor experience for some individuals may be negatively impacted, but for many, it will be enhanced as they will enjoy their outdoor experience much more due to their knowledge of how to stay safe.

There is a very small chance that prey abundance for hunters may be affected by the removal or relocation of panthers. Although the effect that one panther has on a local prey population is minimal, removal of a panther may cause a slight increase in prey abundance. Conversely, the relocation of a panther to an area may cause a slight decrease in prey abundance. In

general, removing or adding one panther to an area would have little effect on available prey for hunters.

As more people move into panther habitat, they will need to be educated about the presence of panthers and how to live with these large predators and other species of wildlife. Local governments and community leaders will need to implement outreach activities for local residents to increase awareness of safety precautions. Officials responsible for schools located in panther habitat will have to take precautions to ensure the safety of their students. The presence of panthers and other predators (bobcats, coyotes, bears) may deter some individuals from moving into these areas; however, the rate of development in the rural areas of southwest Florida over the past decade has demonstrated that the presence of panthers is not currently deterring people from moving into panther habitat. By educating the public about panthers and where they live, people are more likely to make informed decisions of whether or not to move into panther habitat.

Through education, the public can have a better understanding of panther biology and behavior, can proactively manage their livestock, pets and residential and work areas to reduce attracting panthers and other predators, and can learn to behave appropriately during a panther interaction to reduce the risk of an attack.

Cultural Resources Impacts: This action does not impact or pose any threat to historic properties under criteria delineated in 36 CFR Part 800 and is in compliance with Section 106 of the National Historic Preservation Act.

Members of the Seminole Tribe of Florida and Miccosukee Tribe of Indians of Florida live within panther habitat. Potential interactions between panthers and humans could interfere with the Tribes' historic, cultural and religious rights. The presence of panthers near tribal ceremonial grounds, housing, and traditional activity areas could adversely affect tribal members and their ability to continue cultural traditions. Tribal members should practice recommended animal husbandry practices to protect livestock and pets from depredation by various predators, including panthers. Additionally, by following basic safety precautions about living and recreating in panther habitat, the possibility of negative human-panther interactions can be greatly reduced. Because of historic cultural traditions involving panthers, the tribal members already have much experience and knowledge about these large predators. This knowledge will aid in the tribes' ability to respond to human-panther interactions that may occur on tribal lands and use-areas. The response mechanisms outlined in the proposed action are consistent for all Americans and do not place a disproportionate burden on Native Americans. The FWS, NPS, and FWC are committed to working with both Tribes to reduce negative human-panther interactions so that tribal members can live in harmony, rather than fear, with Florida panthers, as they have since time immemorial. FWS, NPS and FWC will continue to consult with the tribes, government-to-government, to ensure that implementation of Alternative A takes into consideration tribal religious and cultural practices.

4.1.2 Cumulative Impacts

A cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonable foreseeable future actions (40 CFR § 1508.7).

Habitat loss, fragmentation, and degradation, and associated human disturbance are the greatest threats to the survival and recovery of the panther. As privately-owned land is converted to agriculture, residential and commercial development, panther habitat becomes more limited and fragmented. Panther habitat loss has been estimated at 0.8 percent per year using three different methodologies (R. Kautz, FWC, pers. com. 2003). However, Kautz (Breedlove, Dennis, and Associates, pers. com. 2005) believes that the rate of loss may be higher than previously estimated. This continued loss limits habitat for dispersal and possible relocation sites, as well as forces panthers into less desirable habitat.

Death due to vehicle-caused mortality has risen from 15 reported deaths between 1987 and 1996, to 61 between 1997 and 2006 (FWC. 2006). This increase could be due to several factors. The panther population increased after 1995 due to the introgression of Texas genes into the population. At the same time, from 1990-2004, the human population in Collier County increased from 152,099 to 296,678 (U.S. Census Bureau 2002, 2004) and in Lee County, from 335,113 to 514,295 (U.S. Census Bureau 2002, 2004). With an increase in human population, came an increase in vehicle-use of roads and an increase in construction of roads. Consequently, there were more panthers moving across more roads that were filled with more people and vehicles.

Although disease and parasites have not been documented to be a major mortality factor in the panther population (Maehr et al. 1991b, Taylor et al. 2002), the panther population was exposed to feline leukemia in the late 1990s and several cats succumbed between 2002-2004 (Cunningham 2005).

In addition to disease, the panther population is threatened by environmental contaminants. Some individual panthers have been shown to be at risk from exposure to mercury in the food chain (Newman et al. 2004). Mercury bioaccumulates through the aquatic food chain reaching high concentrations in higher trophic level carnivores such as raccoons and alligators. Panthers preying on these species are at risk for accumulating high tissue mercury concentrations. Other environmental contaminants found in panthers include polychlorinated biphenyls (Arochlor 1260) and organochlorines (p, p'-DDE) (Dunbar 1995, FWC. 2004).

Aggression between males is the most common cause of male mortality and an important determinant of male spatial and recruitment patterns based on radio-collared panthers (Maehr et al. 1991b, FWC 2003). Aggressive encounters between radio-collared males and females also have been documented (FWC 2003, Jansen et al. 2005). Intraspecific aggression, and the associated mortality, could increase as habitat decreases and interactions increase between panthers as they are forced into smaller areas. Intraspecific aggression is also a major cause of concern when relocating panthers into new territories (Ruth et al. 1998).

Any loss from the population of healthy panthers due to relocation or removal will increase the threats to survival of the species that is already threatened by loss of habitat, increased mortality from vehicle collisions, increased occurrence of intraspecific aggression and disease, and environmental contaminants.

Additionally, panthers serve as a keystone species in south Florida. The protection of panthers and their habitat benefits all the wildlife and plants that are found in the same area. Watersheds that are vital to the health of local wetlands and serve as recharge areas for aquifers also benefit from this protection. These aquifers are essential to providing drinking water for the local residents. Consequently, the loss of panthers from the ecosystem can adversely affect all the plants, animals, and people that depend on that ecosystem's resources.

Humans have historically feared large predators including panthers. Because of this fear, humans persecuted panthers almost to extinction. As humans continue to encroach on the remaining panther habitat, related development, including houses, roads, schools, and businesses, will further limit population growth of the panther, and may cause the population to decline. Additionally, negative human-panther interactions may increase as the interface between urban environments and wilderness becomes more densely populated with humans.

Because panthers are an important element in the tribal traditions and cultural history of the Miccosukee and Seminole tribes, the continued existence of the south Florida panther population is extremely important to them (Gallagher 1994). The preferred alternative would reduce the frequency of negative human-panther interactions, thereby increasing human safety, while eliminating the unjustified removal of panthers from the wild and assuring the continued existence of the panther.

The proposed alternative protects human life and limits the adverse impacts to the panther population through a coordinated response that analyzes panther behavior and human activities and removes only those panthers that pose a demonstrable threat to human life. Additionally, it provides an outreach strategy that will help reduce the negative human-panther interactions through public education, and help build public support for the continued protection and recovery of the Florida panther.

4.2 Alternative B – No Action

Under this alternative, management of human-panther interactions is not conducted following any protocol or guidelines and is not based on the best available science or management protocols. Public outreach and education occur in a limited, sporadic or haphazard manner under Alternative B. The lack of an established interagency panther response plan could lead to unjustified removal or relocation of panthers due to perceived or nonexistent threats, adversely affecting the population and potential recovery of the species. Additionally, human safety could be jeopardized due to failure to recognize a threatening situation and act accordingly. Without an outreach, education and media plan, the public is more likely to adversely react to the presence of a panther. Modifying human behavior is much easier than modifying panther behavior.

4.2.1 Direct and Indirect Impacts

Biological Impacts: The lack of guidelines or established plans for the agencies to follow could lead to an agency decision to relocate or remove a panther without justification based on a perceived or nonexistent threat or public pressure to alleviate a panther situation. Additionally, the lack of an interagency plan could cause confusion regarding federal and state authorities, permits, and regulations. This confusion could lead to an improper decision to relocate, remove to captivity, or euthanize a panther. Consequently, more panthers may be removed or relocated under this alternative, increasing the chance for panther mortality, creating a greater negative biological impact on the population, although removal of individuals from an area would provide vacant habitat for dispersing adults, thereby possibly reducing intraspecific mortality. Unfortunately, the new arrivals could face removal or relocation if they begin to utilize areas near human-occupied structures.

The biological impacts under Alternative B are nearly the same as Alternative A. However without established guidelines, management actions such as relocation, removal, euthanasia and aversive conditioning could be applied inappropriately due to the lack of established guidelines, increasing chances of panther mortality, adversely affecting the panther population and future opportunities for recovery of the population. Because this alternative promotes the removal of panthers that have not posed a demonstrable threat to humans, the agencies involved in the removal could be in violation of the ESA.

Social and Economic Impacts: The lack of interagency guidelines or protocols could lead to potentially dangerous situations if the behavior of a panther is misinterpreted by the responding agency personnel and the situation is not properly handled in a timely manner. This could leave humans in a situation where they could experience increasingly serious interactions with a panther. These potentially dangerous situations could lead to loss of livestock and pets, or worse, human life.

Negative encounters between humans and panthers can be reduced through education (Cougar Management Guidelines Working Group 2005). Without outreach through educational materials and the media, the public may not be effectively warned about a potential problem panther in the area. Additionally, the public will not know how to behave when encountering a panther or how to modify their residential landscape or animal husbandry practices to reduce the likelihood of attracting panthers. Without a multi-agency outreach plan, agency personnel are unable to effectively educate residents and visitors on how to modify their behavior to reduce the risk of encountering a panther. Through analysis and modification of human activities, interactions with panthers can be reduced, which increases human safety and reduces the likelihood of panthers having to be removed, relocated or destroyed. The public is more likely to hurt or kill a panther, regardless of the threat level, if not informed about panther behavior and how to react to an interaction or manage their pets and livestock. Under this alternative, the removal of a panther for an unjustified reason can cause confusion to the public and undermine any proactive education and outreach work because the removal will reduce the need for the public to protect their livestock or act in a responsible manner.

Cultural Resources Impacts: Members of the Seminole Tribe of Florida and Miccosukee Tribe of Indians of Florida live within panther habitat. Potential interactions between panthers and humans could occur that would interfere with the Tribes' historic, cultural and religious rights. The presence of panthers near tribal ceremonial grounds, housing, and traditional activity areas could adversely affect tribal members and their ability to continue cultural traditions. However, under this alternative, panthers can be removed without clear justification. If this removal takes place on tribal grounds, a panther, which is a species that has cultural significance to the tribes, could be erroneously removed, adversely affecting tribal traditions, without necessarily increasing public safety. Conversely, a panther that may be a threat to tribal members may not be removed in a timely manner because of the lack of clear guidelines. Both of these scenarios could adversely affect the relationship between the tribal governments and the agencies involved in responding to the human-panther interaction. Additionally, the panther population on the tribal land would not be managed based on the best available science.

4.2.2 Cumulative Impacts

Cumulative impacts for Alternative B are similar to Alternative A, except that there is a lack of established management guidelines for the responding agencies which increases the likelihood of unjustified removal of panthers. This potential for increased take of panthers, could, over time, adversely impact the recovery, if not survival, of the species by adding to the current annual mortality rates. Additionally, a lack of proper response to human-panther interactions could result in a threatening situation not being handled in a timely and proper manner, leading to a potentially hazardous situation for the humans in the area and reducing public support for future panther protection and recovery. The lack of a public outreach and education program also could lead to increased negative human-panther interactions, increasing the public's negative attitude toward panthers. All of these factors have potential to negatively impact the panther population and its future recovery. Additionally, the impact of the unjustified removal of panthers to local tribes could be negative due to the significance of panthers to their tradition and culture.

4.3 Alternative C – Frequency/Proximity Management

Under this alternative, the responses to human-panther interactions are based on frequency of sightings and encounters, occurrences of predation, and proximity of a panther to human-occupied structures and not on the best available science or management protocols. Due to this structured, quantitative response, panthers that may not be a public safety threat could be removed or relocated, increasing chances of panther mortality and adversely affecting the panther population while failing to provide any significant increased public safety. Neither human nor panther behavior is taken into consideration under this alternative. However, the outreach section of this plan should somewhat facilitate the reduction in negative human-panther interactions.

4.3.1 Direct and Indirect Impacts

Biological Impacts: The biological impacts under Alternative C are similar to Alternative B. However, the trigger for removal or relocation is distance to a human-occupied structure and the number of times the animal is documented within this proximity. Due to this structured, quantitative response, panthers that may not be a public safety threat could be inappropriately

removed or relocated merely due to their proximity to a human-occupied facility. Consequently, more panthers may be removed or relocated under this alternative, thus increasing the chance for panther mortality or creating a greater negative biological impact on the population. Removal, however, of individuals from an area would provide vacant habitat for dispersing adults, thereby possibly reducing intraspecific mortality. Unfortunately, the new arrivals could face removal or relocation if they begin to utilize areas near human-occupied structures. Because this alternative promotes the removal of panthers that have not posed a demonstrable threat to humans, the agencies involved in the removal could be in violation of the ESA.

Under this alternative, panthers may be radio-collared to facilitate the ability of agency personnel to closely monitor a panther's proximity to humans instead of for research purposes. Direct impacts from this activity include risks associated with the capture and monitoring of panthers or utilizing non-lethal methods (loud noises, trained dogs, capture, marking, etc.) to cause an animal to leave the area and to associate humans with an unpleasant experience. Capturing, radio-collaring, marking, and otherwise chasing panthers may result in unintentional take. Mortality or injury may result from a capture event because of capture-induced trauma or an adverse reaction to immobilizing chemicals. Routine capture activities include the use of trained hounds to pursue and tree the panther and the subsequent anesthetization of the animal with remotely-injected immobilizing drugs. These activities may result in hyperthermia, hypothermia, dog bite wounds, drowning, fractures, lacerations, seizures, head and spinal trauma, penetration of the abdomen or thorax with dart, vomiting, aspiration, pneumothorax, respiratory depression or arrest, shock, cardiac arrest, or complications associated with treatment of the above conditions. In addition, capture and handling events can result in abandonment of kittens, other disruptions of family structure, or injury to a kitten that requires its removal from the wild for rehabilitation. Further, the injury or death of an adult female with dependent-aged kittens (those less than 1 year of age) could result in the death of the kittens or the need to raise them in captivity.

The incidence of injuries, especially serious injuries and mortalities, has been low over the last 25 years of panther capture work in part because of stringent capture and handling protocols developed by FWC, NPS, and FWS. Between 1981-2004, the FWC has captured and immobilized 133 panthers over 296 times with only one fatality, two panthers suffering broken legs that resulted in their temporary removal to captivity for rehabilitation and the successful return to the wild, and the holding of one other panther for 24 hours to treat an injury involving a needle embedded in bone (D. Land, FWC, pers. comm. 2004). NPS staff in BCNP have been capturing adult panthers and handling kittens at dens since 2003. Between 2003 and 2005, the NPS handled 19 adult or dependent juvenile panthers with no injury or mortality (Jansen et al. 2005).

If stringent capture and handling protocols continue to be followed and refined, injury levels are expected to remain low and are not expected to significantly affect important demographic parameters at the population level, including mortality and reproductive rates or recruitment of juveniles. Handling panthers is important for research, management, and monitoring of the population, and overall the risks are low

Social and Economic Impacts: The social, economic and human safety impacts are nearly the same as Alternative A. This alternative limits the effectiveness of proactive educational and outreach programs because the public assumes that any panther that frequents an area near humans will be removed, negating their need to be proactive in their actions to protect themselves and their livestock. This complacency could increase public safety risks, as the public has little incentive to modify their behavior or their animal husbandry practices, which could increase opportunities for negative human-panther interactions. Members of the public that do not want to alter their lifestyles or livestock husbandry practices will benefit from this alternative because any panther that frequents the area around their property or livestock will be removed. If there are enough captive facilities, the panthers that are removed could be used in zoos to educate citizens about panther ecology and life history, assuming they could acclimate to a captive situation.

Cultural Resources Impacts

The cultural resource impacts are nearly the same as Alternative B. As discussed under social impacts, this alternative limits the effectiveness of proactive communication, education and outreach programs with the tribes because tribal members will assume that any panther that frequents an area near humans will be removed, negating their need to be proactive in their actions to protect themselves and their livestock. This alternative would result in the unjustified removal of panthers that did not present a human safety concern. Under this alternative, the panther population would not be managed using the best available science. Consequently, a species important to the cultural history of the tribes could be greatly reduced in numbers.

4.3.2 Cumulative Impacts

Cumulative impacts for Alternative C are similar to Alternative B, except that the rigid protocols for removal increase the likelihood of unjustified removal of a panther that is not a demonstrable threat to the public. This potential for increased take of panthers, could, over time, adversely impact the recovery, if not survival, of the species by adding to the current annual mortality rate, and may cause the agencies removing the panther to be in violation of the ESA. However, this alternative does provide an outreach plan that will help reduce the negative human-panther interactions through public education, and will help build public and political support for the continued protection and recovery of the Florida panther. Also, unjustified removal of panthers could adversely affect any proactive outreach and education programs to the public by sending conflicting messages. The public would have little reason to use best management practices for animal husbandry when they know that any panther in close frequent proximity to their home will be removed. As with Alternative B, this alternative could adversely affect tribal cultural traditions due to the significance of panthers to the tribes.

4.4 Summary of Environmental Consequences by Alternative

Table 1 provides a matrix to compare impacts of the three alternatives on the biological and social and human safety consequences.

TABLE 1. Summary of Alternative Effects			
IMPACTS	Alternative A – Proposed Action Behavior-based plan, includes outreach plan	Alternative B – No Action No established interagency plan or guidelines	Alternative C – Frequency/Proximity Management Response based on frequency and proximity of interactions, includes outreach plan
Biological Impacts	Response to human-panther interactions is based on evaluating panther behavior and modifying human activity when appropriate. Only those panthers that are a public threat are removed. Aversive conditioning is only conducted when appropriate. Plan minimizes adverse effects to panther population.	Due to lack of an interagency plan, panthers could be removed without proper justification. Such removal/relocation could adversely affect panther survival and recovery	Panther proximity to human-occupied structures and frequency of occurrence dictate the level of response. Plan could lead to unjustified removal of panthers which could adversely affect panther survival and recovery.
Social and Economic Impacts	Implementation of plan would help protect human health and safety and reduce negative interactions between humans and panthers due to the outreach and education component. Humans living in panther habitat may have to modify their yards and daily routines to protect livestock, pets, and children which may have a financial and quality of life impact. Recreational users in panther habitat may need to modify the way they recreate to increase their safety, which may affect the quality of the outdoor experience.	Lack of guidance or plan could lead to lack of proper response to a dangerous situation, potentially leading to loss of livestock, pets or human life. Lack of outreach plan hinders ability of agencies to educate public about risks of living in panther habitat and how to mitigate those risks.	Implementation of plan would help protect human health and safety and reduce negative interactions between humans and panthers due to the outreach and education component. Humans living in panther habitat may have to modify their yards and daily routines to protect livestock, pets, and children which may have a financial and quality of life impact. Recreational users in panther habitat may need to modify the way they recreate to increase their safety, which may affect the quality of the outdoor experience.
Cultural Resource Impacts	By utilizing tribal knowledge of panther natural history and practicing good animal husbandry and basic safety precautions related to living and recreating in panther habitat, the use of tribal lands and cultural sites should not be affected by the presence of panthers. This alternative calls for close coordination between FWS, FWC, NPS and tribes to foster respect and understanding of cultural resources.	Lack of established guidelines could result in the unnecessary removal of panthers, which could adversely affect the tribal traditions without necessarily increasing public safety. A panther that may be threat to tribal members may not be removed in a timely manner due to the lack of clear guidelines. There are limited mechanisms to increase communication and cooperation with the tribes.	This alternative limits the effectiveness of proactive communication, education and outreach programs with the tribes because tribal members will assume that any panther that frequents an area near humans will be removed. Unjustified removal of panthers would compromise the success of the recovery program, adversely impacting a species important to the cultural history of the tribes.

TABLE 1. cont. Summary of Alternative Effects			
IMPACTS	Alternative A – Proposed Action Behavior-based plan, includes outreach plan	Alternative B – No Action No established interagency plan or guidelines	Alternative C – Frequency/Proximity Management Response based on frequency and proximity of interactions, includes outreach plan
Cumulative Impacts	Cumulative impacts to the panther population include habitat loss, vehicle-caused mortality, disease, environmental contaminants and intra-specific aggression. This alternative should limit the removal of panthers to those that pose a demonstrable threat to humans. This alternative provides an outreach plan that will reduce the negative human-panther interactions through public education, and will help build public and political support for the continued protection and recovery of the Florida panther. This alternative increases communication and cooperation with the local Tribes, which will facilitate human safety and the successful management of Florida panthers on tribal lands.	Cumulative impacts to the panther population include habitat loss, vehicle-caused mortality, disease, environmental contaminants and intra-specific aggression. This alternative could add to the annual mortality rate due to increase unjustified take of Florida panthers. The lack of a public outreach and education program also could lead to increase negative human-panther interactions, increasing the public’s negative attitude toward panthers. The unjustified removal of panthers could negatively impact tribal tradition and culture due to the significance of panthers to tribal customs. Also, the failure to remove a threatening animal could adversely impact tribal use of religious sites or residential areas.	Cumulative impacts to the panther population include habitat loss, vehicle-caused mortality, disease, environmental contaminants and intra-specific aggression. This alternative could add to the annual mortality rate due to increase unjustified take of Florida panthers. This alternative provides an outreach plan that will reduce the negative human-panther interactions through public education, and will help build public and political support for the continued protection and recovery of the Florida panther. This alternative could adversely affect the cultural traditions of the local tribes if the panther population is reduced.

5.0 List of Preparers

Layne Hamilton (Florida Panther National Wildlife Refuge, FWS)

Larry W. Richardson (Florida Panther National Wildlife Refuge, FWS)

Chris Belden (South Florida Ecological Service Field Office, FWS)

Paula Halupa (South Florida Ecological Service Field Office, FWS)

Rick Kanaski (Southeast Regional Archeologist, FWS)

Kyla Hastie (Southeast Regional Native American Liaison, FWS)

6.0 Literature Cited/Consulted

- Ackerman, B. B., F. G. Lindzey, and T. P. Hemker. 1986. Predictive energetics model for cougars. Pages 333-352 in S. D. Miller and D. D. Everett (eds). *Cats of the world: biology, conservation, and management*. National Wildlife Federation and Caesar Kleberg Wildlife Research Institute, Washington, D. C. and Kingsville, TX.
- Anderson, A.E. 1983. A critical review of literature on puma (*Felis concolor*). Special report number 54. Colorado Division of Wildlife Research Station.
- Belden, R.C. and R.T. McBride. 2005. Florida panther peripheral areas survey final report 1998-2004. Florida Fish and Wildlife Conservation Commission, Tallahassee, FL.
- Belden, R. C., W. B. Frankenberger, R. T. McBride, and S. T. Schwikert. 1988. Panther habitat use in southern Florida. *Journal of Wildlife Management* 52(4):660-663.
- Belden, R.C., W.B. Frankenberger, and J.C. Roof. 1991. Florida panther distribution. Final Report 7501, E-1 II-E-1. Florida Game and Freshwater Fish Commission, Tallahassee, FL.
- Bell, F. 2002. An economic analysis of the impact of current and projected development patterns on the natural resources in Collier and Lee Counties, Florida. Report commissioned by National Wildlife Federation and Florida Wildlife Federation.
- Beriault, John G., Robert S. Carr, Mark Lance, and Steven Bertone. 2003 *A Phase I Archaeological Assessment of the Ten Thousands Collier County, Florida*. Technical Report #434. Archaeological and Historical Conservancy, Davie, Florida.
- Coates, S.F., M.B. Main, J.J. Mullahey, J.M. Schaefer, G.W. Tanner, M.E. Sunquist, and M.D. Fanning. 2002. The Coyote (*Canis latrans*): Florida's Newest Predator. University of Florida, Wildlife Ecology and Conservation Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences. [online] URL: <http://edis.ifas.ufl.edu/UW127>.
- Comiskey, E. J., O. L. Bass, Jr., L. J. Gross, R. T. McBride, and R. Salinas. 2002. Panthers and forests in South Florida: an ecological perspective. *Conservation Ecology* 6(1):18. [online] URL: <http://www.consecol.org/vol6/iss1/art18>.
- Cougar Management Guidelines Working Group. 2005. Cougar Management Guidelines. Wild Futures, Bainbridge Island, WA
- Cryer, L.J. and F.J. Mazzotti. 2002. Bobcat (*Felis rufus*). University of Florida, Wildlife Ecology and Conservation Department, Florida Cooperative Extension

- Service, Institute of Food and Agricultural Sciences. [online] URL:
<http://edis.ifas.ufl.edu/UW011>.
- Cunningham, M.W. 2005. Epizootiology of feline leukemia virus in the Florida panther. M.S. Thesis. University of Florida, Gainesville.
- Dalrymple, G. H., and O. L. Bass. 1996. The diet of the Florida panther in Everglades National Park, Florida. *Bulletin of the Florida Museum of Natural History* 39:173-193.
- Derr, M. 1989. *Some kind of paradise*. William Morrow and Company, New York.
- Dickson, B. G., J. S. Jenness, and P. Beier. 2005. Influence of vegetation, topography, and roads on cougar movement in Southern California. *Journal of Wildlife Management* 69:264-276.
- Dunbar, M.R. 1995. Florida panther biomedical investigations. Annual performance report. Florida Game and Fresh Water Fish Commission, Tallahassee, FL
- Florida Fish and Wildlife Conservation Commission (FWC). 2000. Shindle., D., D.Land, K. Charlton, and R. McBride. Florida panther genetic restoration and management. Annual report, Florida Panther Research Number 93112503002; Tallahassee, Florida.
- Florida Fish and Wildlife Conservation Commission (FWC). 2003. Shindle, D., M. Cunningham, D. Land, R. McBride, M. Lotz, and B. Ferree. Florida panther genetic restoration and management. Annual report, Florida Panther Research Number 93112503002; Tallahassee, Florida.
- Florida Fish and Wildlife Conservation Commission (FWC). 2004. Land, E.D., M. Cunningham, M. Lotz, and D. Shindle. Florida panther genetic restoration and management. Annual report, Florida Panther Research Number 93112503002; Tallahassee, Florida.
- Gallagher, Pete. 1994. "COO-WAH-CHOBEE" The Cultural Significance of the Florida Panther to Native Americans. Presented at the Florida Panther Conference, November, sponsored by the Florida Panther Interagency Committee, Dennis B. Jordan, Editor pp 6-12.
- Giuliano, W.M. and G.W. Tanner. 2005. Ecology of Wild Hogs in Florida. University of Florida, Wildlife Ecology and Conservation Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences. [online] URL:
<http://edis.ifas.ufl.edu/UW220>.
- Jansen, D.K., S.R. Schulze, and A.T. Johnson. 2005. Florida panther (*Puma concolor coryi*) research and monitoring in Big Cypress National Preserve.

- Kautz, R., R. Kawula, T. Hctor, J. Comiskey, D. Jansen, D. Jennings, J. Kasbohm, F. Mazzotti, R. McBride, L. Richardson, and K. Root. 2006. How much is enough? Landscape-scale conservation for the Florida panther. *Biological Conservation*, 130:1 pp 118-133.
- Kersey, Jr., Harry A. 1975. *Pelts, Plumes, & Hides: White Traders among the Seminole Indians 1870-1930*. University Presses of Florida, Gainesville.
- Kersey, Jr., Harry A. 1987. *The Seminole and Miccosukee Tribes: A Critical Bibliography*. Indiana University Press, Bloomington, Indiana.
- Land, D., and S.K. Taylor. 1998. Florida panther genetic restoration and management annual report 1997-98. Florida Game and Fresh Water Fish Commission, Tallahassee, FL.
- Land, D., M. Cunningham, M. Lotz, and B. Ferree. 2005. Florida panther annual report 2004-05. Florida Fish and Wildlife Conservation Commission, Tallahassee, FL.
- Maehr, D.S. 1990. The Florida Panther and Private Lands. *Conservation Biology*. 4(2):167-170.
- Maehr, D.S. 1992. Florida panther (*Felis concolor coryi*). Pages 176-189 in S. R. Humphrey, editor. Rare and endangered biota of Florida. Volume I. Mammals. University Press of Florida, Gainesville, Florida, USA.
- Maehr, D. S., E. D. Land, and J. C. Roof. 1991a. Social ecology of Florida panthers. *National Geographic Research and Exploration* 7(4):414-431.
- Maehr, D.S., E.D. Land, and M.E. Roelke. 1991b. Mortality patterns of panthers in southwest Florida. *Proceedings of Annual Conference of Southeastern Fish and Wildlife Agencies*. 45: 201-207.
- Maehr, D. S., R. C. Belden, E. D. Land, and L. Wilkins. 1990. Food habits of panthers in southwest Florida. *Journal of Wildlife Management* 54:420-423.
- Maehr, D.S, R.T. McBride, and J.J. Mullahey. 1996. Status of coyotes in south Florida. *Fla. Field Nat.* 24(4):101-107.
- Marquardt, William H. (editor). 1992. *Culture and Environment in the Domain of the Calusa*. Monograph No. 1. Institute of Archaeology and Paleoenvironmental Studies, University of Florida, Gainesville.

- McBride, R.T. 2002. Current panther distribution and conservation implications— highlights of field work: fall 2001 – winter 2002. Report to Florida Panther Subteam of MERIT, U.S. Fish and Wildlife Service, Vero Beach, FL
- McBride, R.T. 2003. The documented panther population (DPP) and its current distribution from July 1, 2002 to June 30, 2003. Appendix IV in D. Shindle, M. Cunningham, D. Land, R. McBride, M. Lotz and B. Ferree. Florida panther genetic restoration and management. Annual report 93112503002. Florida Fish and Wildlife Conservation Commission, Tallahassee, FL
- Miccosukee Tribe of Indians of Florida. 2002. Miccosukee Tribe of Indians. Electronic Document Posted at www.miccosukeeresort.com/tribe.htm. Accessed April 3, 2007.
- National Park Service. 2007. Everglades National Park: History and Culture. Electronic Document Posted at www.nps.gov/ever/historyculture/index.htm. Accessed April 3, 2007.
- Newman, J., E. Zillioux, E. Rich, L. Liang, and C. Newman. 2004. Historical and other patterns of monomethyl and inorganic mercury in Florida panther (*Puma concolor coryi*). Archives of Environmental Contaminants and Toxicology 48:75-80.
- Nowak, R.M. and R.T. McBride. 1974. Status survey of the Florida panther. Project 973. World Wildlife Fund Yearbook 1973-74:237-242.
- Parker, G. 1995. Eastern coyote: the story of its success. Nimbus Publ. Ltd. Halifax, Nova Scotia. 254 pp.
- Ruth, T.K., K.A. Logan, L.L. Sweanor, M.G. Hornocker, and L.J. Temple. 1998. Evaluating cougar translocation in New Mexico. Journal of Wildlife Management 62:1264-1275
- Schaefer, J. and M.F. Main. 2001. White-tailed Deer of Florida. University of Florida, Wildlife Ecology and Conservation Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences. [online] URL: <http://edis.ifas.ufl.edu/UW121>.
- Schaefer, J. and M. Sargent. 2001. Florida Black Bear: A threatened Species. University of Florida, Wildlife Ecology and Conservation Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences. [online] URL: <http://edis.ifas.ufl.edu/UW055>.
- Schwadron, Margo. 2006. Everglades Tree Islands Prehistory: Archaeological Evidence for Regional Holocene Variability and Early Human Settlement. *Antiquity* 80(310).

- Taylor, S.K., C.D. Buergelt, M.E. Roelke-Parker, B.L. Homer, and D.S. Rotstein. 2002. Causes of mortality of free-ranging Florida panthers. *Journal of Wildlife Diseases* 38:107-114.
- Tebeau, Charlton W. 1957. *Florida's Last Frontier: The History of Collier County*. University of Miami Press, Coral Gables, Florida.
- U.S. Census Bureau. 2002. Table CO-EST2001-12-12-time series of Florida intercensal population estimate by county. April 1, 1990 to April 1, 2000.
- U.S. Census Bureau. 2004. Population estimates, census 2002, 1990 census.
- U.S. Fish and Wildlife Service. 2005. Technical/Agency Draft, Florida Panther Recovery Plan (*Puma concolor coryi*), Third revision. U.S. Fish and Wildlife Service. Atlanta, Georgia. XXXpp.
- Weisman, Brent R. 1999. *Unconquered People: Florida's Seminole and Miccosukee Indians*. University Press of Florida, Gainesville.
- Weisman, Brent R. 2000. Archaeological Perspectives on Florida Seminole Ethnogenesis. In, *Indians of the Greater Southeast: Historical Archaeology and Ethnohistory*, edited by Bonnie G. McEwan, pps. 299-317. University Press of Florida, Gainesville.
- Weisman, Brent R., and Lori D. Collins. 2003. *A Cultural Resource Assessment of the Ten Thousand Islands* (2 Volumes). University of South Florida, Tampa.
- Wheeler, Ryan. 2004. *Southern Florida Sites Associated with the Tequesta and Their Ancestors*. National Historic Landmark/National Register of Historic Places Theme Study. Florida Division of Historical Resources, Tallahassee, Florida.
- Widmer, Randolph J. 1988. *The Evolution of the Calusa: A Nonagricultural Chiefdom on the Southwest Florida Coast*. University of Alabama Press, Tuscaloosa.
- Young, S.P. and F.A. Goldman. 1946. *The Puma-Mysterious American Cat*. Dover Publications, Incorporated. New York, New York.
- Young, S.P. and H.H.T. Jackson. 1951. The clever coyote. *Wildl. Manage. Inst. and Univ. Nebraska Press*. Lincoln. 411pp.

Appendix A



United States Department of the Interior

FISH AND WILDLIFE SERVICE
1875 Century Boulevard
Atlanta, Georgia 30345

In Reply Refer To:
FWS/R4/ES

SEP 9 8 2005

Mr. Kenneth Haddad
Florida Fish and Wildlife Conservation
Commission
620 South Meridian Street
Tallahassee, Florida 32399-1600

Dear Mr. ~~Haddad~~:

The Fish and Wildlife Service is preparing to initiate development of an Environmental Assessment (EA) for the Florida Panther Response Plan. As the lead agency for this project, we are seeking your cooperation based on both your jurisdiction by law and special expertise on Florida panther environmental issues that should be addressed in the EA.

We are inviting the Florida Fish and Wildlife Conservation Commission to be a "Cooperating Agency" in this project as defined by the Council on Environmental Quality's (CEQ) Regulations for Implementing the National Environmental Policy Act (NEPA), section 1508.5. We expect Cooperating Agencies to participate in drafting the environmental document, identifying Florida panther environmental issues, and assisting in the development of the EA purpose and need statement. If you decide to act as a Cooperating Agency for the EA, we hope you will commit personnel adequate to develop pertinent information and to prepare environmental analyses based on your expertise and area of jurisdiction, with direction from the Service.

The Service focuses the efforts of Cooperating Agencies on topics for which the agency has expertise and appropriate data or information. For example, it would be beneficial to our project if we could request the assistance of Mr. Darrell Land, lead for south Florida panther research. His many years of panther experience and research, as well as his involvement in the development of the Florida Panther Response Plan, would constitute exceptional value added to us in this project. Whomever you propose, we will use their expertise and suggestions to the extent possible, consistent with our responsibility as lead agency.

If your agency is not inclined, or does not have the resources to act in a Cooperating Agency status, but would like to be involved in the EA process, a potential role may be afforded to your agency as "reviewer" of the preliminary draft EA. We encourage you to consider the unique role of a Cooperating Agency in this project, and determine which role(s), if any, is most appropriate for your purposes.

TAKE PRIDE
IN AMERICA 

Mr. Haddad

2

Thank you for your continued interest in the future of the Florida panther. Please be advised that a response to this invitation to be a Cooperating Agency is required under CEQ regulation 1501.6 (c). Should you decide not to accept, you must respond in writing and submit a copy of your reply to the CEQ. Please feel free to direct questions regarding the EA process to Ms. Layne Hamilton, Florida Panther and Ten Thousand Islands National Wildlife Refuge, at (239) 353-8442, extension 227. Questions regarding Cooperating Agencies and NEPA may be directed to Mr. Jeffrey Weller, Southeast Regional Office, at (404) 679-7217.

Sincerely yours,



Sam D. Hamilton
Regional Director

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION



RODNEY BARRETO
Miami

SANDRA T. KAÜPE
Palm Beach

H.A. "HERKY" HUFFMAN
Enterprise

DAVID K. MEEHAN
St. Petersburg

KATHY BARCO
Jacksonville

RICHARD A. CORBETT
Tampa

BRIAN S. YABLONSKI
Tallahassee

KENNETH D. HADDAD, Executive Director
VICTOR J. HELLER, Assistant Executive Director

OFFICE OF THE EXECUTIVE DIRECTOR
(850)487-3796 TDD (850)488-9542

October 3, 2005

Mr. Sam Hamilton, Regional Director
U.S. Fish and Wildlife Service
1875 Century Boulevard
Atlanta, GA 30345

Dear Mr. Hamilton:

The Florida Fish and Wildlife Conservation Commission (FWC) has partnered with the U.S. Fish and Wildlife Service (FWS) to address Florida panther conservation needs for over 25 years, including the development of the Guidelines for Living with Florida Panthers and the Interagency Florida Panther Response Plan. We would be pleased to act as a Cooperating Agency for the Environmental Assessment of the Response Plan by providing the assistance you have requested from Mr. Darrell Land, FWC's Panther Team Leader. Mr. Land can be reached at (239) 643-4220 or by e-mail: Darrell.Land@MyFWC.com.

The Response Plan and associated Guidelines are the products of many months of work by wildlife biologists, law enforcement personnel, administrators, and public information officers from the National Park Service, FWS, and FWC. The tremendous growth of Florida's human population and the shrinking interface between areas occupied by people and by wildlife present challenges for natural resources agencies. The Guidelines and Response Plan will be essential to foster and maintain continued public support for Florida panther conservation and recovery as we address these sociological, political and environmental challenges.

Sincerely,

For Kenneth D. Haddad
Executive Director

kdh/rkf

Appendix B

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION



RODNEY BARRETO
Miami

SANDRA T. KAUPE
Palm Beach

H.A. "HERKY" HUFFMAN
Enterprise

DAVID K. MEEHAN
St. Petersburg

JOHN D. ROOD
Jacksonville

RICHARD A. CORBETT
Tampa

BRIAN S. YABLONSKI
Tallahassee

KENNETH D. HADDAD, Executive Director
VICTOR J. HELLER, Assistant Executive Director

OFFICE OF THE EXECUTIVE DIRECTOR
(850)487-3796 TDD (850)488-9542

March 5, 2004

Mr. Billy Cypress, Chairman
Miccosukee Tribe of Indians of Florida
Post Office Box 440021
Tamiami Station
Miami, FL 33144

Dear Chairman Cypress,

On behalf of the Florida Fish and Wildlife Conservation Commission (FWC), U. S. Fish and Wildlife Service (FWS), and U. S. National Park Service (NPS), we recognize and respect your decision, conveyed in your March 3, 2004 letter, not to meet with us to develop a cooperative approach to resolving the panther situation near Pinecrest in the Big Cypress National Preserve (BCNP). We would like to extend our continued willingness to meet with you or your staff at any time to address this issue and work cooperatively toward a mutually acceptable resolution.

This letter also provides a more detailed response to your earlier letters regarding the frequent sightings of Florida panthers in the Pinecrest area of BCNP near the Loop Road Environmental Education Center (LREEC). The FWC, FWS, and NPS share your concerns about this situation. We acknowledge the Miccosukee Tribe of Indians of Florida's (Tribe) viewpoint in this matter and, after much deliberation, have reached the position outlined in this letter.

Reports of panthers at the Pinecrest and LREEC area began with sightings of a panther family group, a female with two or three kittens, that had occurred in the fall of 2003 and additional sightings of a single panther on three consecutive days between December 7-9, 2003. The BCNP and FWC responded by sending staff to the area for field investigation, and concluded that there was not enough evidence to determine whether the sightings were of a known family group of panthers (an adult female with two to three kittens) or the family group plus an additional adult panther. Staff provided their contact information in the event that the panthers were again sighted and developed recommendations for minimizing potential conflicts between panthers and people, in part based on the approaches used by western states.

Nearly two months elapsed before the next sightings of the Pinecrest panther(s) which occurred January 29-31, 2004. These sightings were of a single individual and were reported to both the BCNP and FWC. Staff returned to Pinecrest on January 31, saw a panther on Loop Road near the LREEC, and subsequently determined that this panther was a female. Furthermore, staff concluded that an apparent lack of concern by this panther to the presence of people was not

Mr. Billy Cypress
Page Two
March 5, 2004

typical behavior for the species, but also noted that the frequent presence of panther prey in the area might contribute to the panther's return visits. At no time has the FWC, FWS, or NPS had any indications that the Pinecrest panthers have acted in an aggressive manner.

The FWS, NPS, and FWC cooperatively developed a course of action specific to the Pinecrest panther situation. First, we identified both short- and long-term solutions that we believe will minimize any problems associated with panthers whose home ranges occur along Loop Road. Second, the FWC and NPS provided staff to monitor the area, and the BCNP began its panther capture work in the Loop Road area in February. Because of this monitoring and good fortune, the BCNP capture team was successful in capturing, drawing genetic samples from, and placing radiocollars on a panther family group comprised of an adult female and two 10-month-old kittens, one male and one female. The blood samples collected from these three panthers have been submitted to the National Cancer Institute. We are waiting for the genetic results and will provide them to you as soon as they are received. One or more individuals from the captured family group most likely are responsible for the panther sightings along Loop Road. Finally, the BCNP, FWC, and FWS are educating visitors and residents about living in panther country. These educational efforts have stressed a balanced approach that provides for both public safety and the needs of an endangered species.

The panthers in the family group that was captured and radiocollared in the LREEC area are being intensively monitored to determine their locations, movement patterns, and home range. The FWS, NPS, and FWC concur that, if any of the individuals in the family group linger within 100 yards of the LREEC or any residence along Loop Road, dogs or other techniques will be used as a means of aversive conditioning. Our goal is to make the panthers leave the immediate area and to discourage them from associating with people or areas used by people. If any of these individuals return and linger after a second treatment of aversive conditioning, the offending panther(s) will be removed. First options for removal could include relocation to other suitable habitat in panther range, including within BCNP, or placement in a captive facility. We stress that, under any conditions, if a clear threat to human safety is identified, the offending panther(s) will be removed. Also, we emphasize that, according to 50 CFR Part 17.21(c)(2), "... any person may take endangered wildlife in defense of his own life or the lives of others..., and.... Any taking pursuant to paragraph (c)(2)...of this section must be reported in writing to the U. S. Fish and Wildlife Service, Division of Law Enforcement...within 5 days." However, we advise that any such incidents will be investigated thoroughly.

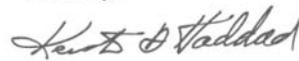
The LREEC and adjacent private residences are situated along an upland ridge vegetated with hardwood hammocks and pinelands. These habitats are attractive to panthers and their prey, particularly during periods of heavy rain when the adjacent wetland habitats carry significant surface water. FWS, NPS, and FWC will work together to implement modifications to the LREEC grounds to prevent deer and other prey species from congregating. We take this situation very seriously, and we are encouraging residents to do the same by removing any deer

Mr. Billy Cypress
Page Three
March 5, 2004

and wild hog attractants that, in turn, also may attract panthers. The FWC's nuisance bear policy and many western states' cougar policies are built upon the concept of removing attractants as an effective means of managing problem situations, and we believe this approach will work for panthers.

In summary, we believe that the cooperative efforts among the FWC, FWS, and NPS have resulted in the implementation of a sound, comprehensive approach to resolving the current situation between the Pinecrest panthers and the public. Our first priority remains ensuring public safety; however, we have endeavored to enact an approach that ensures human safety while also conserving this highly endangered species. In this regard, we invite the Tribe to designate an individual to join our staff in monitoring and tracking the panthers in the Pinecrest area. The Tribe is an important conservation partner in South Florida. We welcome your assistance in further refining our Pinecrest panther management strategy and your participation in developing an overall policy for responding to similar situations in the future.

Sincerely,



Kenneth D. Haddad
Executive Director

kdh/te/pm

cc: Carol Clark, BCNP
Sam Hamilton, FWS
Patricia Hook, NPS
Rodney Barreto, FWC

Appendix C

Interagency Florida Panther Response Plan

Florida Fish and Wildlife Conservation Commission
620 South Meridian Street
Tallahassee, FL 32399-1600

U.S. Fish and Wildlife Service
1875 Century Blvd.
Atlanta, GA 30345

National Park Service
100 Alabama St. SW
1924 Building
Atlanta, GA 30303

March 2008

TABLE OF CONTENTS

Introduction.....	48
Interagency Florida Panther Response Plan	49
Interagency Florida Panther Response Team Composition, Responsibilities and Reporting	50
Classification and Response	51
Human-panther Interactions.....	54
Sighting(s).....	54
Encounter/Multiple Encounter	54
Incident	56
Threat	57
Attack.....	58
Panther Depredations	59
Outreach Strategy.....	60
Literature Cited	63
Appendix 1: Florida Panther Response Team	64
Appendix 2: Florida Panther Response Matrix.....	65
Appendix 3: Immediate Outreach Actions	68
Appendix 4: Florida Panther Response Form.....	69

INTRODUCTION

The Florida Fish and Wildlife Conservation Commission (FWC), U.S. Fish and Wildlife Service (FWS), and National Park Service (NPS) are the primary agencies responsible for the protection, management, and recovery of the endangered Florida panther (*Puma concolor coryi*). These agencies are committed to (1) educating Florida residents and visitors about the Florida panther, (2) providing safety guidelines for residents and visitors in panther habitat, and (3) providing protocols for responding to human-panther interactions and depredations in a timely and effective manner. The goal of the Interagency Florida Panther Response Plan (Response Plan), developed by FWC, FWS, and NPS, is to promote public safety while assuring the conservation of the panther.

The Florida panther is one of the rarest large mammals in the United States. Historically, the panther was distributed from eastern Texas or western Louisiana and the lower Mississippi River Valley, east through the southeastern United States including all of Florida (Young and Goldman 1946). Although occasional sightings and signs were reported throughout the rural Southeast between 1950 and 1980, the only confirmed panther population was found in south Florida (Anderson 1983). Geographic isolation of the Florida panther, combined with habitat loss, population decline and associated inbreeding, resulted in significant loss of genetic variability and decline in the overall health of the population. To restore genetic variability, eight female Texas panthers were released in strategic locations within south Florida in 1995. Due primarily to genetic augmentation, the population grew from less than 50 panthers in 1995 to the current population of approximately 80-100. All offspring of the Texas panthers are considered to be Florida panthers.

The panther is listed as endangered under both the Federal Endangered Species Act (ESA) and Florida law. As more humans move into panther habitat, the potential for human-panther interactions and domestic animal depredations increases, thereby raising public safety awareness issues. Conflicts with humans raise issues that require careful consideration and action to conserve the species while the safety of the public remains paramount.

The Response Plan includes guidelines for the agencies responding to human-panther interactions and depredations. Also, the plan provides guidelines for developing an outreach and education program to help people understand panther behavior and actions humans should take when living or recreating in panther habitat.

INTERAGENCY FLORIDA PANTHER RESPONSE PLAN

The FWS, NPS, and FWC established an Interagency Florida Panther Response Team (Response Team) to respond to human-panther interactions in such a way to ensure public safety and the continued existence and recovery of the Florida panther. The Response Team, comprised of biologists, law enforcement officers, public information staff, and other agency representatives (Appendix 1), will follow the Response Plan to handle human-panther interactions and depredations.

The Response Team's responsibility will be to review information related to human-panther interactions and depredations, classify these situations based on the documented behavior of the panther, provide a timely action plan to the responsible agencies, and take appropriate action. The Response Team will meet at least annually to review previous activities and suggest needed revisions to the Response Plan for consideration by each agency's chain-of-command. Additional meetings may be held as needed. A comprehensive annual report summarizing the Response Team's actions will be provided to a senior-level Oversight Committee consisting of the FWS Southeast Regional Director, the FWS Refuge Manager of Florida Panther National Wildlife Refuge (NWR), the NPS Southeast Regional Director, the NPS Superintendent of Everglades National Park, the NPS Superintendent of Big Cypress National Preserve, and the FWC Executive Director. The Oversight Committee will approve revisions to the Response Plan, review actions by the Response Team, and provide guidance if warranted. For interactions classified as an Incident, Threat, or Attack, the Committee will be informed immediately and will coordinate actions with the Response Team.

This Response Plan draws upon the approaches used by western states to manage their puma populations but also recognizes the special needs posed by the endangered status of the Florida panther. Interactions between humans and pumas in the western states range from depredation upon livestock or pets, fleeting glimpses, repeated sightings, aggression towards humans without physical contact, and, in rare cases, attacks upon people. Most western states have protocols in place to document, investigate, and manage these incidents to increase public safety.

Under State and Federal laws and regulations, panther management and protection are the primary responsibility of the FWS and the FWC. The Florida panther is protected under the Federal Endangered Species Act of 1973 (16USC1531-1544) (ESA) and Florida Administrative Code (FAC) 68A-27. The NPS is responsible for coordinating panther management on NPS lands. These three agencies are integral to the management, conservation, and recovery of the panther and are committed to enforcing all applicable Federal and State laws. Florida panther capture and handling activities are permitted by the FWS through section 10 of the ESA and by the FWC under Title 68A of the FAC. Panther management activities on Seminole and Miccosukee Tribal lands are closely coordinated with Tribal members and designated Tribal employees. Necessary management actions will not exclude either Tribe from exercising their customary use and occupancy rights where they exist on NPS lands (Public Law 93-440 and Public Law 100-301).

INTERAGENCY FLORIDA PANTHER RESPONSE TEAM COMPOSITION, RESPONSIBILITIES, AND REPORTING

The Response Team includes biologists, law enforcement officers, and public information staff from FWC, FWS, and NPS (Appendix 1). Reports of human-panther interactions and depredations shall be directed to the appropriate agency based on the location of the interaction. In most cases of reported human-panther interactions and depredations, law enforcement officers and biologists will be the first agency personnel to respond. The lead agency will be responsible for collecting details and pertinent information and reporting those findings to the Response Team. Investigations will involve an assessment of the level of public concern by the Response Team's public information/outreach personnel. Communication with the Response Team will be accomplished by a variety of means including phone calls and emails.

The Response Team recognizes the critical importance of prompt and appropriate responses to potential public safety concerns that may occur because of human-panther interactions and depredations. The team will place a high priority on the efficient and timely completion of investigations, the development of recommendations, and the initiation of appropriate actions. If human-panther interactions occur outside of south Florida, the Response Team will coordinate with, and support, agency staff in those areas as needed. Response to interactions will include close coordination with local law enforcement and animal services agencies. These actions also will include outreach to inform the media, public and local elected officials of the interactions in a timely manner.

Geographic areas of responsibility shall be as follows:

- (1) NPS team members shall take the lead in managing human-panther interactions and depredations within the perimeter boundaries of Big Cypress National Preserve and Everglades National Park. NPS team members from Everglades National Park will be responsible for responding to the Miccosukee Reserved Area lands within the Park. If the situation involves non-federal in-holdings, NPS will coordinate with FWC.
- (2) FWS team members shall take the lead in dealing with human-panther interactions and depredations within the perimeter boundaries of Florida Panther NWR or on any other FWS property within Florida.
- (3) On Seminole and Miccosukee Tribal lands, the FWS (Florida Panther NWR Manager, Office of Law Enforcement agent or the Southeast Regional Native American liaison) will coordinate with the Tribes' designated representatives and the Response Team to address the Tribes' concerns regarding panther issues. FWC will provide logistical support as needed.
- (4) On all other lands in Florida (including military bases, National Forests and other public lands), the FWC team members shall take the lead on human-panther interactions and depredations. Access to private lands will be coordinated with the landowners. Because the

FWC has a full-time panther capture team and the other agencies do not, the FWC will assist the other agencies as needed.

CLASSIFICATION AND RESPONSE TO HUMAN-PANTHER INTERACTIONS AND DEPREDATIONS

The Response Team identified five human-panther interaction classifications: Sighting(s), Encounter, Incident, Threat, and Attack. Panther depredation on domestic animals is discussed separately. When investigating an interaction or depredation, agency personnel will determine if a panther was present and if so, evaluate its behavior and conduct a risk assessment. The Cougar Management Guidelines (Cougar Management Working Group 2005) provide guidance in developing human risk criteria for each classification. Normally, interactions are between panther, people, and prey and the resulting behavior of the panther can be interpreted as an indicator of the potential risk to the human (Table 1). Some interactions will not fit clearly into a specific category, but will have to be evaluated on individual circumstances of the particular situation. Additionally, humans may unintentionally provoke undesirable behavior in a panther by running away and triggering the chase behavior, not allowing the animal an escape route, or approaching an animal that is feeding or has young. Any interaction that was intentionally caused by humans will be thoroughly investigated. All these factors will be considered when classifying human-panther interactions and depredations.

The Response Team members making the first contact will secure the site if necessary, gather information, complete the Public Interview Form, and distribute the completed form along with a preliminary assessment of the situation to the entire Response Team. If further investigation is warranted, a Field Investigation Report will be completed and forwarded to the Response Team. The Response Team members will review the preliminary assessment and make the final classification. Certain situations might require immediate action on the part of the Response Team without participation by all team members.

Radio-telemetry has been utilized by biologists for over 25 years to gather life history information about Florida panthers. Locations of panthers derived from radio-telemetry equipment merely define the animal's position at a given time. When telemetry shows that a panther's location may be cause for concern, the Response Team will evaluate the level of significance of these locations based on the animal's behavior as outlined in the listed classifications.

On rare occasions, panthers have been located within urbanized areas. Typically, these individuals are young, dispersing males in search of new territory. In past cases, the panther has resolved the situation by leaving the highly populated area and returning to more suitable panther habitat. As human development continues to encroach on the remaining panther habitat, the occurrence of panthers in suburban or even urban environments is more likely. Verified sightings in areas that are clearly not panther habitat and that are densely populated, such as business districts, highly commercial areas, dense housing developments or other suburbs, will be investigated promptly and evaluated by the Response Team.

If a panther's behavior indicates a threat to human safety, it will be permanently removed from the wild. The ESA permits the removal of an endangered species that "constitutes a demonstrable but not immediate threat to human safety..." If the panther's location presents a possible threat to public safety (e.g., a dispersing male panther wanders into an urban neighborhood and cannot find its way out) or there is a threat to the survival of the panther (e.g. a panther wanders into an area that contains numerous physical hazards), depending on specific circumstances, the panther may be captured and relocated to suitable habitat, if available, or to an approved captive facility. In extreme circumstances, euthanasia may be necessary.

Under certain circumstances, aversive conditioning will be utilized to manage a human-panther interaction or depredation situation. Aversive conditioning is an experimental management technique that utilizes non-lethal methods (loud noises, trained dogs, capture, marking, etc.) to cause an animal to associate humans with an unpleasant experience. In some circumstances, relocating the animal within its home range may serve as aversive conditioning. Although not an extensively researched technique, aversive conditioning has been utilized with a small number of individuals. Results have varied and depend on factors such as the degree of attraction to the area for food, cover, mating, etc. Aversive conditioning is not intended to alter instinctive prey choices, but rather to change the panther's behavior when in proximity to humans. Consequently, aversive conditioning may not be successful if the panther is attracted to prey and the prey attractant is not removed, enclosed in a proper facility, or excluded from the human-occupied location.

Aversive conditioning, by definition, causes disturbance to a panther and may result in take as defined in the ESA in the form of harassment and possibly harm. Agencies will minimize the extent of take associated with aversive conditioning and ensure that any such take is authorized, pursuant to section 7 and section 10 of the ESA. Radio-collaring is not an aversive conditioning technique, although when done, it is unpleasant to the animal and may serve as an initial step of aversive conditioning. Radio-collaring can only be done for research purposes under an ESA section 10(a)(1)(A) permit. Aversive conditioning should only be conducted by individuals who are knowledgeable about puma behaviors or have been trained to understand the concept and use of the technique. If the Response Team determines that aversive conditioning will be conducted near roads and highways, law enforcement personnel will assure that all safety precautions will be taken.

Table 1. Florida Panther Behaviors and Associated Risk to Humans

LOW RISK	LOW-MODERATE RISK	MODERATE-HIGH RISK	HIGH RISK
Retreats at sight of human	Takes a defensive posture, but then quickly retreats	Does not retreat when humans take offensive/aggressive actions	Unprovoked aggression or predatory behavior directed toward humans.
Displays a lack of attention or indifference to humans	Hiding	Hissing, snarling, and other vocalizations that make the panther conspicuous and communicates to the human that it is viewed as a threat to its safety or in defense of its young or cached prey	Close approach that requires a person to take defensive action to avoid direct contact
Displays a wariness of humans and does not approach	Shifting position	Body low to the ground; head may be up	Body and head low to ground; fur out; rear legs pumping
Several moments of mutual eye contact before retreating	Following behavior	Intense staring	Direct, physical contact between a panther and a human due to aggressive behavior on the part of the panther and not related to protection of kittens or cached prey
Makes various movements not directed at humans		Following behavior, coupled with hiding or a fairly rapid walk but punctuated by numerous stops	Crouches with tail twitching
Shows signs of curiosity including ears up, standing still temporarily and then retreating		Ears are slightly flattened or laid back	
		Twitching of tail	

HUMAN-PANTHER INTERACTIONS

SIGHTING(S): *A visual observation or fleeting glimpse of a panther from a distance.*

Risk Factor = LOW

Behavior:

- **Retreats at sight of humans**
- **Displays a lack of attention or indifference to humans**
- **Displays a wariness of humans and does not approach**

Panther sightings fall into two categories, verified - those with corroborating evidence and unverified - those without such evidence. Response Team biologists will examine any physical evidence provided by the public. A panther sighting with corroborating evidence will be considered a verified sighting. Photographs of the animal or photographs and/or casts of tracks can help with identifying the animal in question. Sightings in occupied panther range do not require any specific management action but can be used as an outreach opportunity. People reporting a panther sighting can be directed to PantherNet (www.myfwc.com/panther) to learn more about panthers in Florida. Verified sightings outside of the known occupied range and in high human-use areas (e.g., suburban, urban) will be investigated by a wildlife biologist and reported to the Response Team.

Repeated and Verified Sightings: *Repeated observations or confirmed reports of panther sign or activity at short time intervals in the same general area.*

Several panther sightings in locations that are inhabited by humans and that occur over the course of several days or weeks in the general area will result in field visits from agency personnel. The Response Team will evaluate if a panther that is sighted repeatedly in close proximity to people or inhabited structures poses a risk to public safety. The Response Team will also try to determine the cause of the repeated use (i.e., cached prey item, den, prey attractant). The Response Team members making the first contact will gather information, complete the appropriate forms, and distribute these completed forms along with a preliminary assessment of the situation to the entire Response Team. Multiple panther sightings are not necessarily indicative of any public safety concern; however, educating people about visiting, living, and recreating in panther habitat is always prudent. These situations should be treated as public outreach opportunities. The public will be provided with the “Living with Panthers” brochure or directed to visit PantherNet (myfwc.com/panther/) to download the brochure and safety tips.

The Response Team shall be notified of all verified repeated panther sightings and the entity receiving these sighting reports shall complete a Public Interview Form (Appendix 4). Completed forms shall be submitted via email to the Response Team within seven (7) days of the subsequent sightings. The Response Team will review the Panther Response Form, and

if management actions are warranted will coordinate resources among all affected agencies and will develop an action plan utilizing the appropriate actions listed in Appendix 2.

ENCOUNTER/MULTIPLE ENCOUNTERS: *An unexpected direct meeting or a series of meetings over a short period between a human and a panther. Panther exhibits non-threatening behavior. Multiple encounters involve the same panther, which over a short period has shown no aggression nor has deliberately approached people in an area.*

Risk Factor = LOW – MODERATE

Behavior:

- **Retreats at sight of humans**
- **Displays a lack of wariness to humans and does not approach**
- **Displays a wariness of humans and does not approach**
- **Makes mutual eye contact and then retreats**
- **Takes a defensive posture, but then quickly retreats.**
- **Makes various movements not directed at humans**
- **Shows signs of curiosity including ears up, standing still temporarily and then retreating.**

An initial response consisting of a site visit and interviews with observers will be conducted by law enforcement and biologists responsible for that geographic area within 24 hours after receiving the report. They will secure the area if warranted, document and evaluate the evidence and attempt to determine the cause of the encounter (i.e., cached prey item, den, and prey attractant). The Response Team shall be notified of all reported panther encounters within 24 hours of the site visit and interviews. The Response Team members making the first contact will gather information and complete the Public Information Form (Appendix 4) and a Field Investigation Report (if warranted). Completed forms with a preliminary assessment of the situation shall be submitted via email to the Response Team. If necessary the Response Team shall coordinate resources among all affected agencies and will develop an action plan utilizing the appropriate actions listed in Appendix 2.

INCIDENT: *An interaction between a panther and a human as described in an Encounter, except that the panther displays potentially threatening behavior.*

Risk Factor = MODERATE - HIGH

Behavior:

- **Does not retreat when humans take offensive/aggressive actions.**
- **Shows signs of curiosity including ears up, intent attention, may be shifting positions.**
- **Intense staring, following or hiding behavior.**

Natural panther behaviors such as defense of kittens or kills, or stalking prey may be perceived to be threatening by people; however, these occurrences are coincidental to a chance meeting and are not indicative of a public safety concern.

An initial response consisting of a site visit and interviews with observers will be conducted by law enforcement officers and biologists responsible for that geographic area no later than 12 hours after receiving the report. They will secure the area if warranted, document and evaluate the evidence, and attempt to determine the cause of the incident (i.e. cached prey item, den, and prey attractant). The agency initiating the investigation shall complete a Public Interview Form and a Field Investigation Report (Appendix 4) and submit them, along with a preliminary assessment of the situation, via email to the Response Team within 24 hours of the site visit.

The Response Team will review the reports and evaluate the presented evidence. The Response Team will make a final determination on the incident and provide written recommendations to the responsible agency via the agency's chain of command. This process ensures that one member from the Oversight Committee will review every recommendation. The Response Team shall coordinate resources among all affected agencies and will develop an action plan utilizing the appropriate actions listed in Appendix 2.

Not all of the listed actions will be applicable to every encounter and new techniques may be developed. Some of these actions may be implemented immediately by agency staff and prior to the involvement of the Response Team in order to provide for human and panther safety.

THREAT: *An unprovoked aggressive/predatory behavior toward a human that requires the individual to take defensive action to avoid direct contact.*

Risk Factor = HIGH

Behavior:

- **Crouches with tail twitching, intense staring, ears flattened, body low to the ground, head may be up (pre-attack behavior).**
- **Ears flat, fur out, tail twitching, body and head low to ground, rear legs pumping (attack imminent).**

A panther shall also be classified as a threat if these three circumstances occur:

- 1) the panther has been involved in a previous encounter, incident, or depredation;
- 2) the panther's behavior departs from expected or known behavior; and
- 3) previous management actions have not deterred the animal's actions.

Immediately after receiving the report, an initial response consisting of a site visit and interviews with observers will be conducted by law enforcement and biologists responsible for that geographic area. They will secure the area if warranted, document and evaluate the evidence, attempt to determine the cause of the panther's behavior (i.e., cached prey item, den, prey attractant) and permanently remove the panther. The Response Team will be notified by phone as soon as possible. The responding agency will complete immediately the Public Interview Form and Field Investigation Report (Appendix 4) and submit them, along with a preliminary assessment, via email to the Response Team and Oversight Committee. The Response Team shall coordinate resources among all affected agencies and will develop an action plan utilizing the appropriate actions listed in Appendix 2. Some of these actions may be implemented immediately by agency staff and prior to the involvement of the Response Team in order to provide for human safety.

Managing public safety and the conservation needs of an endangered species can be challenging and complex; however, a panther that poses a demonstrable threat to public safety shall be permanently removed from the wild. A panther deemed to be a public safety concern will not be relocated to another area because there are no suitable locations where a panther would not likely encounter human communities. There is no guarantee that relocated animals will remain in the release area. The relocated panther may cause a disruption of the local panther social structure, thereby creating local population instability and possibly contributing to additional intraspecific aggression. Permanent removal is the only management option for panthers that pose a demonstrable threat to human safety.

ATTACK: *A direct, physical contact between a panther and a human involving aggressive panther behavior.*

Risk Factor = HIGH

Immediately after receiving the report, an initial response consisting of a site visit and interviews with observers will be conducted by law enforcement officers and biologists responsible for that geographic area. They will secure the area if warranted, document and evaluate the evidence, and attempt to determine the cause of the panther's behavior (i.e. cached prey item, den, or prey attractant). The area will be closed to public use and area residents will be informed of the situation. Every effort will be made to immediately remove the panther from the wild. The Response Team shall be notified by phone as soon as possible. The responding agency will complete the Public Interview Form and Field Investigation Forms (Appendix 4) and submit them immediately, along with a preliminary assessment, via email to the Response Team and Oversight Committee. The Response Team shall coordinate resources among all affected agencies and will develop an action plan utilizing the appropriate actions listed in Appendix 2. Some of these actions may be implemented immediately by agency staff and prior to the involvement of the Response Team in order to provide for human safety.

Managing public safety and the conservation needs of an endangered species can be challenging and complex; however, a panther that attacks a human shall be permanently removed from the wild or destroyed. A panther deemed to be a public safety concern cannot be relocated to another area because there are no suitable locations where a panther would not likely encounter human communities. Permanent removal is the only management option for panthers that have attacked a human.

PANTHER DEPREDATION

DEPREDATION: *A panther that preys upon domestic pets (e.g., dogs, cats) or livestock (e.g., goats, pigs, horses, cows).*

Risk Factor = LOW

A suspected panther depredation located within the occupied range of the panther will require a field visit from agency personnel. Within 12 hours after receiving the report, an initial response consisting of a site visit and interviews with observers will be conducted by law enforcement officers and biologists responsible for that geographic area. They will secure the area if warranted, document and evaluate the evidence, and attempt to determine the cause of the panther's behavior (i.e., cached prey item, den, or prey attractant). The responding agency will complete the Public Interview Form and a Field Investigation Report (if warranted) (Appendix 4) and email them, along with a preliminary assessment, to the Response Team within 24 hours of the site visit and interviews. The Response Team will review the report, evaluate the evidence and provide recommendations to the responsible agency within 48 hours. The Response Team shall coordinate resources among all affected agencies and will develop an action plan utilizing the appropriate actions listed in Appendix 2.

Not all of the listed steps will be applicable to every depredation and new management techniques may be developed. Some of these steps may be implemented immediately and prior to the involvement of the Response Team to provide for human and panther safety.

Landowners will be provided information on how to protect pets and livestock. The landowner is responsible for protecting pets or livestock, particularly at night, using recommended methods. Depredations are natural panther behaviors and should not be considered as threatening to humans. If aversive conditioning is conducted, it is not intended to alter instinctive prey choices, but rather to discourage a panther from a specific location where non-native prey is available.

Multiple depredations by the same animal in a short period of time, behavior that departs from known or expected behavior, and failure of management actions to alter the animal's behavior may elevate a depredation to the THREAT classification.

OUTREACH STRATEGY

While the Response Plan outlines the actions the agencies will take to respond to human-panther interactions and depredations once they have occurred, FWC, FWS and NPS will also work to implement measures that will minimize human-panther interactions.

Outreach and education are the primary methods the agencies will use to minimize interactions and to promote coexistence between humans and panthers. Residents and visitors must be educated and informed about how they can live and safely enjoy recreational activities in panther habitat. Although there is no way to prevent all panther interactions, humans can modify their behavior to reduce risks and avoid conflicts and, thereby, help conserve and protect the panther.

The agencies developed this outreach strategy to educate south Florida residents and visitors how to coexist safely with panthers. The agencies will focus their efforts on the urban interface areas where human occupation may result in interactions between humans and panthers.

Together and in partnership with other stakeholders, FWC, FWS, and NPS will develop, produce, and distribute educational materials, including fact sheets, brochures, public service announcements (video, print, and/or radio), signage, and other medium. Topics for these materials will include: human safety, safety for pets and livestock, how to properly identify a panther and understand panther behavior, how to act if you encounter a panther, reducing attractants for panther and nuisance (raccoons, opossums, deer) or predatory (coyotes, bobcats, bears, etc) wildlife, and which agencies to contact to report a panther interaction, or depredation. When possible, community meetings will be held with local organizations and citizen groups to improve communication between the agencies and local residents on panther and wildlife issues. Close coordination with elected officials and local government agencies also is an important part of community outreach and education.

The outreach strategy identifies a list of key stakeholders that will be contacted, and categorizes outreach strategies into “immediate”, “mid-term”, and “long-term” strategies. These strategies will be implemented as soon as possible.

Key Stakeholders:

- Residents and homeowners in south Florida who live in or near Florida panther habitat. Primary counties include Collier, Lee, and Hendry. Secondary counties include Miami-Dade and Monroe. Key communities include Immokalee, Golden Gate Estates, Copeland, Belle Meade, and future developments in eastern Collier County, as well as residents on Seminole and Miccosukee lands.
- Builders, developers and real estate agents in the counties and communities identified above.
- Large landowners and ranchers in rural areas of the counties listed above.
- Visitors to panther habitat.
- City, County, State and Federal elected officials, and Tribal governments
- Public land management agencies
- Local law enforcement and animal control/services agencies
- News media

- Schoolchildren and school officials
- Non-governmental organizations (NGOs), environmental organizations (e.g., Friends of the Florida Panther Refuge, Florida Wildlife Federation, National Wildlife Federation, Defenders of Wildlife, etc)
- All Floridians
- Tourist service providers
- Local cooperative extension staff, National Resource Conservation Service staff, etc.
- Arborists, landscape services, etc.

Goals:

1. Minimize human-panther interactions and depredations and ensure public safety while also protecting the panther population.
2. Improve the public’s knowledge on how to coexist with panthers, including:
 - a. how to properly identify a panther and understand panther behavior
 - b. how to act if a person encounters a panther
 - c. how to reduce the likelihood of attracting panthers near a residence by not intentionally feeding wildlife and properly caring for domesticated animals.
3. Educate the public about FWC, FWS, and NPS and their roles and responsibilities in panther management, including agency responses to human-panther interactions and depredations
4. Inform people that the panther population in the state, while still endangered, is increasing. Due to habitat destruction, suitable habitat is minimal, and people are moving into panther habitat, which may increase interactions with panthers.
5. Educate the public about the problems associated with attracting wildlife near residences with the ultimate goal of reducing attractants for predatory species such as bear, panthers, coyotes, bobcats, alligators and other small mammals that may cause harm to property such as raccoons, skunks, opossums, and armadillos.
6. Develop a coordinated and consistent agency approach in responding to human-panther interactions and domestic animal depredations.
7. Form partnerships with public agencies, private citizens, NGOs and Tribes to advance all other goals of the campaign.
8. Work with local developers that will be building in panther habitat to design residential and related developments that will minimize human-predator interactions.

Strategies:

All activities and materials will be jointly developed by the FWS, NPS, and FWC, but can be produced separately by each agency. Actions are prioritized as immediate, mid-term, and long-term and depend on funding and staff availability. Outreach goals and objectives will be re-evaluated each year and updated as needed.

Immediate (Currently being completed: Appendix 3)

- Create fact sheets to educate individuals that report an interaction with a Florida panther. Law enforcement, public information officers, wildlife biologists, and other responders will have these available to hand out to the public. Primary topics include:
 - “Panther proofing” residential property
 - Protecting livestock and pets

- How to react when seeing a panther
- Create informational signage for visitor use areas on public lands within panther habitat.
- Write Frequently Asked Questions to be available in print and on the web.
- Update and further develop Panther.net, the FWC's central panther website, with information specific for living safely in panther habitat.

Mid-term (2008)

Produce and distribute appropriate site bulletins and information materials (such as door hangers, posters and a suite of complementary brochures), to area residents, and visitors to panther habitat, on how to:

- "Panther proof" residential and recreational property,
- Protect livestock and pets
- React when seeing a panther in such a way that will protect them and the panther
- Develop PowerPoint presentation or videos for use at local trainings, outreach events, meetings, etc.
- Create print, radio, and/or broadcast public service announcements as part of a panther awareness campaign.
- Arrange for events where panther information is disseminated to key stakeholder organizations, such as school boards and homeowners associations.

Long-term (2007-2009)

- Develop curriculum-based education program similar to the FWC "Bear Aware" program. This may include a suite of coordinated materials such as litter bags, magnets, stickers, posters, and activity boxes for teachers, and other materials.
- Conduct media training for selected individuals within agencies.
- Host a press conference to announce the availability of panther awareness materials. This will be the kick-off to expanding media coverage of the response efforts by print and broadcast media across the state, but especially in the south Florida markets.
- Distribute media kits to all the relevant media/journalists on agency media contact lists.
- Conduct pre- and on-site orientation / tours for elected and tribal representatives to inform them of the issue and the response by agencies.
- Distribute Florida Panther Response information, including tips for living in panther country, via mass mailings produced in cooperation with a partner (Florida Power and Light, South Florida Water Management District, Embarq, BellSouth, and local utilities).
- Send direct mail pieces related to the campaign to the targeted neighborhoods.
- Identify opportunities for a short video and/or public broadcast program on the Florida panther.
- Consider creating a Florida panther liaison volunteer program. Neighborhood volunteers would be trained on how to live with Florida panthers and would serve as a resource to their neighbors.

Literature Cited

Anderson, A.E. 1983. A critical review of literature on puma (*Felis concolor*). Special report number 54. Colorado Division of Wildlife Research Section.

Cougar Management Guidelines Working Group. 2005. Cougar Management Guidelines. WildFutures, Bainbridge Islands, Washington.

Young, S.P., and F.A. Goldman. 1946. The puma-mysterious American cat. Dover Publications, Incorporated. New York, New York.

Appendix 1.

Florida Panther Response Team

Response Team Members *

BCNP Biologist

BCNP Law Enforcement- Chief Ranger

BCNP Public Information Officer

ENP Biologist

ENP Law Enforcement-Chief Ranger

ENP Public Information Officer

FWC Panther Team Leader

FWC Law Enforcement

FWC Public Information Officer

FWS Panther Refuge Manager

FWS Panther Refuge Biologist

FWS Law Enforcement

FWS Panther Coordinator

FWS Public Information Officer

*Names and contact information (phone number, email, etc) will be updated and provided to all Response Team and Oversight Team members annually, or as needed to reflect the most current personnel information.

Appendix 2.

Classification	Action	Responsibility ¹
<p>SIGHTING: <i>A visual observation of a panther from a distance.</i></p> <p>Multiple sightings: <i>Repeated and verified panther sightings in locations that are inhabited by people and that occur over the course of several days or weeks. Multiple panther sightings are not necessarily indicative of any public safety concern.</i></p>	<ul style="list-style-type: none"> • Provide informational material. • Post areas with precautions and contact information. • Offer recommendations to the affected landowner and residents regarding improvements to domestic pet/livestock husbandry practices (e.g., wire fencing, electric fence, night enclosure). • Offer recommendations to the affected landowner and residents on landscape modifications to reduce attractiveness to panthers and prey species. • Remove any panther prey caches and cease all wildlife feeding. • Apply aversive conditioning techniques when appropriate 	<p>PIO</p> <p>LE</p> <p>PIO, WB</p> <p>PIO, WB</p> <p>WB, LE</p> <p>WB, LE</p>
<p>ENCOUNTER: <i>An unexpected direct meeting or a series of meetings over a 2-3 week period between a human and a panther, defined by several moments of mutual eye contact occurring before the panther retreats from the situation. The panther displayed non-threatening behavior, such as:</i></p> <ul style="list-style-type: none"> ➤ <i>Displays a lack of wariness to humans.</i> ➤ <i>Retreats at the sight of humans.</i> ➤ <i>Takes a defensive posture, but then quickly retreats.</i> ➤ <i>Makes various movements not directed at humans.</i> ➤ <i>Shows signs of curiosity including ears up, stands still temporarily and then retreats.</i> 	<ul style="list-style-type: none"> • Conduct site visit and interviews within 24 hours after receiving report. • Provide informational material. • Post areas with precautions and contact information. • Offer recommendations regarding improvements to domestic pet/livestock husbandry practices. • Offer recommendations to the affected landowner and residents on landscape modifications to reduce attractiveness to panthers and prey species. • Remove any prey caches and cease all wildlife feeding. • Apply aversive conditioning techniques when appropriate. • Increase law enforcement patrols and monitoring in the area. 	<p>PIO</p> <p>LE</p> <p>PIO, WB</p> <p>PIO, WB</p> <p>WB, LE</p> <p>WB, LE</p> <p>LE</p>
<p>INCIDENT: <i>An interaction between a panther and humans as described in an Encounter, except that the panther displays potentially threatening</i></p>	<ul style="list-style-type: none"> • Initial LE response ASAP; field visit within 12 hours. • Provide informational material. 	<p>LE, WB</p> <p>PIO</p>

Classification	Action	Responsibility ¹
<p><i>behavior, such as:</i></p> <ul style="list-style-type: none"> ➤ <i>A human-panther encounter occurs and the panther does not retreat when humans take offensive/aggressive actions.</i> ➤ <i>Displays behavior indicative of curiosity, including intent attention, ears up, may be shifting position.</i> ➤ <i>Intense staring, following, and hiding behavior.</i> <p><i>Natural panther behaviors such as defense of kittens or of kills may be perceived to be threatening by people; however, these occurrences are coincidental to a chance meeting and are not indicative of a continuing public safety concern.</i></p>	<ul style="list-style-type: none"> • Post areas with precautions and contact information. • Offer recommendations to the affected landowner and residents regarding improvements to domestic pet/livestock husbandry. • Offer recommendations to the affected landowner and residents on landscape modifications to reduce attractiveness to panthers and prey species. • Remove any panther prey caches and cease all wildlife feeding. • Apply aversive conditioning techniques when appropriate. • Increase law enforcement patrols and monitoring in the area. 	<p>LE</p> <p>PIO, WB</p> <p>PIO, WB</p> <p>WB, LE</p> <p>WB, LE</p> <p>LE</p>
<p>THREAT: <i>An unprovoked aggressive/predatory behavior toward people including stalking or close approaches that require a person to take defensive action to avoid direct contact. A panther also may be classified as a threat if it has been involved in a previous encounter, incident, or depredation and its behavior departs from expected or known behavior and previous management actions have not deterred the animal's actions.</i></p> <ul style="list-style-type: none"> ➤ <i>Crouches with tail twitching, intense staring, ears flattened, body low to the ground, head may be up (pre-attack behavior)</i> ➤ <i>Ears flat, fur out, tail twitching, body and head low to ground, rear legs pumping (attack imminent).</i> 	<ul style="list-style-type: none"> • Conduct initial field visit (LE and biologists) immediately after receiving report. • Immediate, permanent removal of the offending panther from the wild. • Close the area where the threat occurred until the panther has been removed. • Inform local residents and other affected people of the threat. • Offer recommendations to the affected landowner and residents on landscape modifications to reduce attractiveness to panthers and prey species. • Post areas with precautions and contact information. • Remove any panther prey caches and cease all wildlife feeding. • Increase law enforcement patrols and monitoring in the area. 	<p>LE, WB</p> <p>WB, LE</p> <p>LE</p> <p>PIO</p> <p>PIO, WB</p> <p>LE</p> <p>WB, LE</p> <p>LE</p>
<p>ATTACK: <i>A direct, physical contact between a panther and a human resulting from aggressive panther behavior.</i></p>	<ul style="list-style-type: none"> • Conduct initial field visit (LE and biologists) immediately after receiving report. 	<p>LE, WB</p>

Classification	Action	Responsibility ¹
	<ul style="list-style-type: none"> • Immediate, permanent removal of the panther from the wild. • Close the area where the attack occurred until the offending panther has been removed. • Increase law enforcement patrols and monitoring in the area. • Inform local residents and other affected people of the attack. • Post areas with precautions and contact information. • Offer recommendations to the affected landowner and residents regarding improvements to domestic pet/livestock husbandry practices. • Offer recommendations to the affected landowner and residents on landscape modifications to reduce attractiveness to panthers and prey species. • Remove any panther prey caches and cease all wildlife feeding. 	<p>WB, LE</p> <p>LE</p> <p>LE</p> <p>PIO, WB</p> <p>LE</p> <p>PIO, WB</p> <p>PIO, WB</p> <p>WB, LE</p>
<p>DEPREDACTION: <i>A panther that preys upon domestic pets (e.g., dogs, cats), domestic livestock (e.g., goats, pigs), or farm/ranch livestock.</i></p>	<ul style="list-style-type: none"> • Field visit within 12 hours • Provide informational material. • Offer recommendations regarding improvements to domestic pet/livestock husbandry. • Offer recommendations to the affected landowner and residents on landscape modifications to reduce attractiveness to panthers and prey species. • Remove any panther prey caches and cease all wildlife feeding. • Apply aversive conditioning techniques when appropriate. • Increase law enforcement patrols and monitoring in the area. 	<p>WB, LE</p> <p>PIO</p> <p>PIO, WB</p> <p>PIO, WB</p> <p>WB, LE</p> <p>WB, LE</p> <p>LE</p>

¹LE–Law Enforcement PIO–Public Information Officer WB–Wildlife Biologist

Appendix 3: Florida Panther Response Plan – Outreach Plan

Table of Immediate Outreach Actions

IMMEDIATE				
Deliverable	Responsible Party	Distribution	Timeline	Cost/Funding Source
Create fact sheets to educate individuals that report an interaction with a Florida panther.	FWC will write and design, edits provided by NPS and FWS – all agency logos/contact information on final products	<ul style="list-style-type: none"> ■ Law enforcement, public information officers, wildlife biologists and other responders will have these available to hand out to the public. ■ Web ■ Visitor centers, nature centers 	Completed	Prepared, duplicated in-house by agency writers and designers; costs absorbed by agency overhead
Create temporary informational signage for visitor use areas on public lands within panther habitat	FWC will write and design, review and edit by NPS and FWS – agency logos/contact information on final products	<ul style="list-style-type: none"> ■ Florida Panther NWR ■ Big Cypress NP/Everglades NP ■ Florida Wildlife Management Areas ■ offered to public and private land managers, including FL DEP, FL state forests, South Florida Water Management District, and tribal lands 	Currently being completed.	TBD
Frequently Asked Questions	FWS to draft with edits provided by FWC and NPS	<ul style="list-style-type: none"> ■ Website of each agency ■ Copies made to distribute as requested to press/interested citizens 	Currently being completed	Prepared, duplicated in-house by agency writers and designers; costs absorbed by agency overhead
Update and further develop Panther.net, the FWC’s central panther website, with information specific for living safely in panther habitat.	FWC to draft with edits provided by FWS and NPS; hosted by FWC at http://www.myfwc.com/panther/	Web	Currently being completed	Prepared in-house by agency writers and designers; costs absorbed by agency overhead

* Mid-term and long-term outreach actions will be prioritized and implemented by outreach staff of FWC, FWS and NPS in partnership with local agencies, non-governmental organizations, landowners, and Tribal agencies.

Appendix 4. Interview and Report Forms

Report Tracking Information	Name _____
	Date _____

**Florida Panther Response Plan
Human-Panther Interactions and Depredations
PUBLIC INTERVIEW FORM**

REPORTING PARTY CONTACT INFORMATION

1.	What is the spelling of your name?	First _____ M.I. _____ Last _____
2.	What is your address?	Street address _____ City _____ State _____ Zip _____ County _____
3.	What are your telephone numbers?	H: () W: () C: ()
4.	What is your email address?	_____

DETAILS OF THE INTERACTION OR DEPREDAATION

5.	Was this an interaction or depredation?	_____
6.	What date did the event occur?	_____
7.	What time did the event occur?	_____ am / pm
8.	What is the total number of people that interacted with the animal?	_____
9.	What is the spelling of the names of the other people who were with you when you interacted with the animal?	What is the telephone number(s) of the other people who were with you when you interacted with the animal?
		a. _____ a. ()
		b. _____ b. ()
		c. _____ c. ()

10.	Where specifically did the interaction occur? (Include County/Municipality)	<hr/> <hr/> <hr/>
11.	What were you doing when the event occurred? (ex. hunting, hiking, yard chores, etc.)	<hr/>

ANIMAL DESCRIPTION AND SPECIFICS OF INTERACTION OR DEPREDATION

12.	What size was the animal?	<hr/>
13.	What was the color of the animal?	<hr/>
14.	Were there any distinguishing characteristics of the animal? (<i>Did it have a radio collar?</i>)	<hr/> <hr/> <hr/>
15.	How close, at the closest point, was the animal from you or other members of your party?	<hr/> <hr/>
16.	What specifically did the animal do during the interaction? <i>For depredations list date and type</i>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
17.	Were there any sounds? (describe)	<hr/>
18.	Did you get a photograph or video?	<hr/>
19.	Would you be willing to provide your photograph or video to us?	<hr/>

REPORTING INFORMATION

	Person who initially called			
20.	Name _____	Telephone Number _____		
		Date _____	Time _____	
	Person who took the initial report			
21.	Name _____	Telephone Number _____		
	Agency _____	Title _____	Date _____	Time _____
	Person(s) conducting the interview			
22.	Name _____	Telephone Number _____		
	Agency _____	Title _____	Date _____	Time _____
	Name _____	Telephone Number _____		
	Agency _____	Title _____	Date _____	Time _____

AGENCY RESPONSE

		YES		NO	COMMENTS
23.	Was any action taken?				
24.	Information provided?				
25.	Will there be a field investigation?				

Report Tracking Information	Name _____
	Date _____

Florida Panther Response Plan Human Panther Interactions and Depredations

FIELD INVESTIGATION REPORT

1.	Investigation Date		2.	Date of event		
3.	Time of event		4.	County		
5.	Primary reporting party	Name _____		Phone number _____		
		Additioanl Numbers C: _____		W: _____		
		Mailing Address _____				
		Street, P.O. Box _____		City _____	State _____	Zip _____
		Email _____				

LOCATION INFORMATION

6.	General location description				
7.	Specific location description	UTM NAD		Easting _____	Longitude _____
		<input type="text"/> 83 <input type="text"/>	<input type="text"/> 27	Northing _____	Latitude _____
8.	Location descriptor (check those that apply)	<input type="checkbox"/>	a. Urban residential	<input type="checkbox"/>	e. Public recreation land
		<input type="checkbox"/>	b. Rural residential	<input type="checkbox"/>	1 City/County Park
		<input type="checkbox"/>	c. Private ranch or recreational property	<input type="checkbox"/>	2 State Park/Nat. Area/Historic Site
		<input type="checkbox"/>	d. Other _____	<input type="checkbox"/>	3 State Wildlife Management Area
		<input type="checkbox"/>		<input type="checkbox"/>	4 Federal Lands
		<input type="checkbox"/>		<input type="checkbox"/>	5 Other _____

REPORTED FLORIDA PANTHER INFORMATION

9.	Description	Number adults: _____		Number kittens: _____		
		Size: _____		Distinctive markings: _____		
		Color: _____				
		Radio collar present? <input type="checkbox"/> Yes <input type="checkbox"/> No				
10.	Distance from observer/other people	_____ Feet	_____ Yards	_____ Meters		

11.	How long was panther observed?	<input type="checkbox"/> Not seen	<input type="text"/> minutes																																	
12.	<p>If panther behavior was described, characterize from list below (check those items that apply)</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;"><input type="checkbox"/> Retreated at sight of humans</td> <td style="width: 33%;"><input type="checkbox"/> Displayed lack of attention</td> <td style="width: 33%;"><input type="checkbox"/> Displayed warriness</td> </tr> <tr> <td><input type="checkbox"/> Made eye contact then retreated</td> <td><input type="checkbox"/> Various movements not directed at humans</td> <td><input type="checkbox"/> Curious, ears up, then retreated</td> </tr> <tr> <td><input type="checkbox"/> Defensive posture then retreats</td> <td><input type="checkbox"/> Shifting position, following</td> <td><input type="checkbox"/> Hiding</td> </tr> <tr> <td><input type="checkbox"/> Did not retreat when human took aggressive action</td> <td><input type="checkbox"/> Hissed, growled, snarled</td> <td><input type="checkbox"/> Body low to ground, head up</td> </tr> <tr> <td><input type="checkbox"/> Intense staring, tail twitching</td> <td><input type="checkbox"/> Following, coupled with hiding or rapid start and stop walking</td> <td><input type="checkbox"/> Ears slightly flattened</td> </tr> <tr> <td><input type="checkbox"/> Crouched with tail twitching</td> <td><input type="checkbox"/> Body and head low to ground, fur out, rear legs pumping</td> <td><input type="checkbox"/> Unprovoked aggression toward human</td> </tr> <tr> <td><input type="checkbox"/> Close approach that requires person to take action to avoid direct contact</td> <td><input type="checkbox"/> Physical contact not related to kittens or cached prey</td> <td></td> </tr> </table> <p><input type="checkbox"/> Other (describe): _____</p> <p><input type="checkbox"/> Depredation on pet or livestock</p> <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Goat</td> <td><input type="checkbox"/> Sheep</td> <td><input type="checkbox"/> Pig</td> <td><input type="checkbox"/> Emu</td> <td><input type="checkbox"/> Dog</td> <td><input type="checkbox"/> House cat</td> </tr> <tr> <td><input type="checkbox"/> Other</td> <td colspan="5"></td> </tr> </table>			<input type="checkbox"/> Retreated at sight of humans	<input type="checkbox"/> Displayed lack of attention	<input type="checkbox"/> Displayed warriness	<input type="checkbox"/> Made eye contact then retreated	<input type="checkbox"/> Various movements not directed at humans	<input type="checkbox"/> Curious, ears up, then retreated	<input type="checkbox"/> Defensive posture then retreats	<input type="checkbox"/> Shifting position, following	<input type="checkbox"/> Hiding	<input type="checkbox"/> Did not retreat when human took aggressive action	<input type="checkbox"/> Hissed, growled, snarled	<input type="checkbox"/> Body low to ground, head up	<input type="checkbox"/> Intense staring, tail twitching	<input type="checkbox"/> Following, coupled with hiding or rapid start and stop walking	<input type="checkbox"/> Ears slightly flattened	<input type="checkbox"/> Crouched with tail twitching	<input type="checkbox"/> Body and head low to ground, fur out, rear legs pumping	<input type="checkbox"/> Unprovoked aggression toward human	<input type="checkbox"/> Close approach that requires person to take action to avoid direct contact	<input type="checkbox"/> Physical contact not related to kittens or cached prey		<input type="checkbox"/> Goat	<input type="checkbox"/> Sheep	<input type="checkbox"/> Pig	<input type="checkbox"/> Emu	<input type="checkbox"/> Dog	<input type="checkbox"/> House cat	<input type="checkbox"/> Other					
<input type="checkbox"/> Retreated at sight of humans	<input type="checkbox"/> Displayed lack of attention	<input type="checkbox"/> Displayed warriness																																		
<input type="checkbox"/> Made eye contact then retreated	<input type="checkbox"/> Various movements not directed at humans	<input type="checkbox"/> Curious, ears up, then retreated																																		
<input type="checkbox"/> Defensive posture then retreats	<input type="checkbox"/> Shifting position, following	<input type="checkbox"/> Hiding																																		
<input type="checkbox"/> Did not retreat when human took aggressive action	<input type="checkbox"/> Hissed, growled, snarled	<input type="checkbox"/> Body low to ground, head up																																		
<input type="checkbox"/> Intense staring, tail twitching	<input type="checkbox"/> Following, coupled with hiding or rapid start and stop walking	<input type="checkbox"/> Ears slightly flattened																																		
<input type="checkbox"/> Crouched with tail twitching	<input type="checkbox"/> Body and head low to ground, fur out, rear legs pumping	<input type="checkbox"/> Unprovoked aggression toward human																																		
<input type="checkbox"/> Close approach that requires person to take action to avoid direct contact	<input type="checkbox"/> Physical contact not related to kittens or cached prey																																			
<input type="checkbox"/> Goat	<input type="checkbox"/> Sheep	<input type="checkbox"/> Pig	<input type="checkbox"/> Emu	<input type="checkbox"/> Dog	<input type="checkbox"/> House cat																															
<input type="checkbox"/> Other																																				

CREDIBILITY OF REPORT

13.	<p>a. Verified with physical evidence? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>b. Evidence observed/obtained by the investigator:</p> <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Tracks</td> <td><input type="checkbox"/> Photo</td> <td><input type="checkbox"/> Prey carcass</td> <td><input type="checkbox"/> Scat</td> <td><input type="checkbox"/> Scrape</td> </tr> <tr> <td><input type="checkbox"/> Fur</td> <td><input type="checkbox"/> Not searched</td> <td><input type="checkbox"/> Other _____</td> <td colspan="2"></td> </tr> </table> <p>Confirmation of evidence: (e.g., examined by Response Team?) _____</p> <p>_____</p> <p>c. If not verified by physical evidence, is reported event considered credible? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Explain _____</p> <p>_____</p> <p>_____</p> <p>d. Mitigating circumstances if no physical evidence obtained.</p> <table style="width: 100%; border: none;"> <tr> <td><input type="checkbox"/> Poor tracking substrate</td> <td><input type="checkbox"/> Rain since event</td> <td><input type="checkbox"/> Elapsed time since event</td> </tr> <tr> <td><input type="checkbox"/> Evidence destroyed/buried</td> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table>	<input type="checkbox"/> Tracks	<input type="checkbox"/> Photo	<input type="checkbox"/> Prey carcass	<input type="checkbox"/> Scat	<input type="checkbox"/> Scrape	<input type="checkbox"/> Fur	<input type="checkbox"/> Not searched	<input type="checkbox"/> Other _____			<input type="checkbox"/> Poor tracking substrate	<input type="checkbox"/> Rain since event	<input type="checkbox"/> Elapsed time since event	<input type="checkbox"/> Evidence destroyed/buried	<input type="checkbox"/> Other _____	
<input type="checkbox"/> Tracks	<input type="checkbox"/> Photo	<input type="checkbox"/> Prey carcass	<input type="checkbox"/> Scat	<input type="checkbox"/> Scrape													
<input type="checkbox"/> Fur	<input type="checkbox"/> Not searched	<input type="checkbox"/> Other _____															
<input type="checkbox"/> Poor tracking substrate	<input type="checkbox"/> Rain since event	<input type="checkbox"/> Elapsed time since event															
<input type="checkbox"/> Evidence destroyed/buried	<input type="checkbox"/> Other _____																

DEPREDAATION DETAILS

14.

a. Animals Depredated

Animals Depredated	#	Fatal	Injury	Missing	Age	Sex	Weight
<input type="checkbox"/> Goat	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> Male <input type="checkbox"/> Female	_____
<input type="checkbox"/> Emu	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> Male <input type="checkbox"/> Female	_____
<input type="checkbox"/> Pig	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> Male <input type="checkbox"/> Female	_____
<input type="checkbox"/> Dog	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> Male <input type="checkbox"/> Female	_____
<input type="checkbox"/> Cat	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> Male <input type="checkbox"/> Female	_____
<input type="checkbox"/> _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> Male <input type="checkbox"/> Female	_____
<input type="checkbox"/> _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> Male <input type="checkbox"/> Female	_____
<input type="checkbox"/> _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> Male <input type="checkbox"/> Female	_____
<input type="checkbox"/> _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> Male <input type="checkbox"/> Female	_____

Date(s) animals killed or missing _____

Time animals discovered killed or missing _____

Injury details _____

b. Carcass Information

Carcass found? Yes No Number of days deceased? _____

Carcass fed upon? Yes No

Carcass cached? Currently Previously No

Carcass location In pen Out of pen Distance from pen _____

If carcass not found, any evidence to explain disappearance? Yes No

If yes, explain Predator tracks Predator hair Drag marks

Prey hair Fence bent/broken Other _____

c. Predator Information

Panther Bobcat Bear Dog Undetermined Other _____

If panther: Male Female Collared ID _____ Uncollared

Evidence for predator determinatiior

Tracks Feeding/attack method Hair Other _____

d. Description of husbandry conditions (eg. style and condition of fence, enclosure details, etc)

14. e. Repeat location? Yes No Date(s) of previous depredations _____
 Animals previously depredated _____

f. Additional details _____

INTERACTION TYPE

15. Characterize the interaction type based on the totality of evidence and information

<input type="checkbox"/> Sighting (visual observation or sign of panther only)	<input type="checkbox"/> Threat (an unprovoked aggressive/predatory behavior toward a human that requires the individual to take defensive action to avoid direct contact)
<input type="checkbox"/> Encounter (an unexpected, direct neutral meeting between a panther(s) and human(s))	<input type="checkbox"/> Attack (physical contact between a panther and a human involving aggressive panther behavior)
<input type="checkbox"/> Incident (an interaction between a panther(s) and human(s) in which the panther displays potentially threatening behavior (no immediate retreat, intent attention/staring))	<input type="checkbox"/> Depredation (panther preys upon domestic pets/livestock)

ATTACK REPORT

16. **Attack documented?** Yes No

a. Number person(s) attacked _____

b. Gender and age of those attacked

	<i>gender</i>	<i>age</i>		<i>gender</i>	<i>age</i>
(1)	_____	_____	(4)	_____	_____
(2)	_____	_____	(5)	_____	_____
(3)	_____	_____	(6)	_____	_____

c. Type of attack non-injury injury fatality

Describe: _____

Appendix D

Public Comments:

Comment: All habituated panthers (those that seek out humans and human-use areas) should be removed.

Response: If a panther is repeatedly sighted in close proximity to people or inhabited structures, the Response Team will investigate to determine the cause (i.e. cached prey, den site, prey attractant). Multiple panther sightings are not necessarily indicative of any public safety threat. If the panther is attracted to domestic animals, the owner will be provided information on how to protect the animals. Also, if wildlife is being fed in the area, and the wildlife is serving as an attractant to panthers, then the team will recommend that the feeding be discontinued. If the team determines that the panther's behavior meets the criteria for classification as a threat or attack, it will be removed from the wild population.

Comment: Because the Florida panther has been destroyed genetically due to inclusion of Texas cougar genes, they should be managed as a common mountain lion and not as an endangered species.

Response: The genetic makeup of the panther does not affect the implementation of the management actions included in the Response Plan. Public safety is the primary concern for the Response Team.

Comment: We support Alternative A.

Response: We concur with this comment.

Comment: Alternative A lacks a protocol for euthanasia. Euthanasia of any protected species is only appropriate when the individual is mortally wounded due to disease or injury. Euthanasia as method to eradicating aggressive wildlife is an inappropriate action. Establish protocol, consistent with the ESA, should guide any decision to remove a panther permanently into captivity.

Response: A protocol for euthanasia is being developed. Until this protocol is completed, the Response Team will address this situation on a case-by-case basis, under Section 10(a)(1)(a) of the ESA.

Comment: Encourage the building of pens to dissuade panther depredation of private livestock and domestic animals. A reimbursement program to compensate owners of lost property should be also developed.

Response: If a panther takes domestic prey, the Response Team will advise the livestock or pet owner on how to protect their animals to prevent depredation. Protection of livestock is the responsibility of the owner. The agencies do not have the authority to compensate livestock or pet owners for panther depredations. However, some private organizations (such as Defenders of Wildlife) have indicated an interest in providing assistance with the construction of livestock enclosures for owners that cannot afford to build such facilities. Members of the Response Team have worked with Defenders of Wildlife and other volunteers to build several livestock pens on private property and at the local county extension service (demonstration pen).

Tribal Comments

Comment: The panther Response Plan and its EA are still inadequate, and an EIS should be required.

Response: The purposes of an EA are to determine if the proposed action will have significant impacts, address unresolved environmental issues, and to provide a basis for a decision on the proposal. An EA also is completed to aid in planning or decision-making and to serve as a vehicle to gain public input or facilitate interagency coordination. If the EA determines that the proposed action is a major Federal action significantly affecting the quality of the human environment, then an EIS is prepared. The proposed action, the Response Plan, minimizes biological, social, cultural, and economic impacts by incorporating management techniques based on the best available science and that have been successfully utilized by many western states to manage puma populations. Public safety is a primary component of the plan, emphasizing a proactive approach to altering those human behaviors that could increase negative human-panther interactions and mandating timely and decisive responses to threatening situations. Consequently, we have determined that the proposed action will not have a significant impact on the human environment based on our analysis of direct, indirect, and cumulative impacts, and no EIS is required.

Comment: DOI implemented the panther response plan before completing the environmental analyses required by NEPA.

Response: The NEPA process was initiated in 2005; however, the draft Response Plan was used by the Response Team to manage human-panther interactions starting in February 2005 due to public safety concerns involving human-panther interactions that required immediate action on the part of FWS, FWC, and NPS.

Comment: Appropriate NEPA was not done on the fence that was placed around the Loop Road Environmental Education center.

Response: In August 2006, NPS determined that the fencing of the Loop Road Environmental Education Center (LREEC) was categorically excluded from NEPA analysis. This determination was documented. A cultural resource assessment of the fencing project was completed concurrently. These documents are available through the Big Cypress National Preserve.

Comment: Alternative A, the proposed action is ineffective in protecting human health and safety because only after someone is killed is it considered appropriate to remove a cougar.

Response: A panther that exhibits threatening behavior (pg 55) or is involved in an attack (pg 57) will be permanently removed from the population or destroyed. Public safety is the primary concern of the interagency response team.

Comment: DOI's analysis of Alternative A ignores its impacts on Native American culture in violation of both NEPA and the Environmental Justice Act.

Response: The impacts on Native American culture are discussed in Sections 3.3, 4.1.1, 4.2, 4.2.2, 4.3.1, 4.3.2.

Comment: Alternative A fails to account for the need to manage the growing conflict generated by increasing human presence in cougar habitat.

Response: Because of increases in numbers of people and panthers in south Florida, urban/suburban areas now interface with panther habitat, increasing the possibility of human-panther interactions. Since 2002, there has been an increase in human-panther interactions in south Florida. These interactions, combined with the lack of established agency guidance for managing human-panther interactions and depredations, were the impetus for the development of the Response Plan. The plan was written with the understanding that human-panther interactions will most likely increase in the future. The primary key to managing this issue will be through education and outreach. The plan provides a proactive outreach strategy for educating the residents and visitors about living with panthers.

Comment: DOI's decisions are internally inconsistent because the Alternative A essentially asserts that cougars are not a present threat to people while the plan for the Education Center fence, and its supporting documents, effectively admit the opposite.

Response: Alternative A's (Response Plan) focus is public safety and, when possible, proactively managing human-panther interactions. The LREEC is an example of such management. Florida panthers were attracted to the center due to the large concentrations of white-tailed deer that frequented the area. A deer-exclusion fence was erected around the center to prevent deer from entering the area and attracting panthers. The fence has worked as planned. Since the erection of the fence in November 2006, deer have been excluded from the facility, reducing the number of reported panther sightings in this location.

Comment: DOI's analysis of the alternatives contains an incomplete, inadequate, and incorrect analysis of the "three strikes and you're out" removal policy, for example, omitting key facts and focusing only on the alleged deficiencies of the policy without examining its benefits.

Response: The EA contains no alternative referred to as "three strikes and you're out." Each of the three alternatives was analyzed for direct and indirect impacts on the biological environment, social and economic interests, and cultural resources. This analysis included both negative and beneficial impacts for each alternative.

Comment: The evaluation and proposed action do not adequately address the religious, cultural, and social needs of the Tribe in violation of NEPA and the Environmental Justice Act. DOI's actions violate the Environmental Justice Act by imposing disproportionate burdens on Native Americans. DOI has violated equal protection, due process, and other environmental justice rights of the Tribe.

Response: Executive Order 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" directs federal agencies to focus on the environmental and human health conditions of minority and low-income populations with the goal of achieving environmental protection for all communities. The impacts on Native American culture are discussed in Sections 3.3, 4.1.1, 4.2, 4.2.2, 4.3.1, 4.3.2. Assessment of these impacts has not identified any adverse or beneficial effects for the proposed alternative unique to minority or low-income population in the south Florida area. We have determined that

the proposed alternative will not disproportionately place any adverse environmental, economic, cultural, social, nor health impacts on minority or low-income populations.

Comment: DOI's actions are not based on the best information available.

Response: To make sure the Interagency Florida Panther Response Plan was based on the best available science, the Interagency team utilized protocols that were developed in western states for dealing with human-puma interactions and the *Cougar Management Guidelines* (2005). The *Cougar Management Guidelines* was authored by the Cougar Management Guidelines Working Group which consisted of 13 individuals from academia and wildlife management agencies who have numerous publications and decades of experience in cougar conservation. Two members of the working group also reviewed the Response Plan and provided input into its revision.

Comment: DOI has violated the ESA by failing to propose an alternative which would relocate and/or remove Florida panthers so as to minimize the likelihood of lethal interactions between panthers and humans.

Response: Relocating and/or removing Florida panthers in an effort to “minimize the likelihood of lethal interactions between panthers and humans” could be in violation of the ESA if the panther’s actions did not “constitute a demonstrable but not immediate threat to human safety.” If a panther demonstrates threatening or pre-attack behavior, it will be removed. There is always the chance that a panther will be involved in a threatening situation or an attack without any prior warning or behavioral cues. According to the *Cougar Management Guidelines* (2005), most attacks occur without prior interactions or warnings and the authors suggest the best way to prevent attacks is to modify human behaviors and activities. Consequently, public education is a major part of the Response Plan’s public safety objective.

Comment: DOI has violated the Tribe’s civil rights and jeopardized the continued existence of the true Florida panther by bringing Texas cougars into Indian Country.

Response: By 1995, the genetic health of the Florida panther had deteriorated due to inbreeding, jeopardizing its continued existence. Texas pumas were introduced into the population to restore the Florida panther’s genetic health. The genetic makeup of the Florida panther does not affect the Response Team’s management actions related to human-panther interactions. If a panther, regardless of genetics, is a threat to public safety, it will be removed from the population. The impacts of the Proposed Action to the local Tribes were discussed in Sections 3.3, 4.1.1, 4.2, 4.2.2, 4.3.1, 4.3.2.

Comment: The Agencies involved in the preparation of these two documents continue to ignore the real threat posed by these cougars.

Response: The FWS, FWC, and NPS recognize the critical importance of prompt and appropriate responses to potential public safety concerns that may occur because of human-panther interactions. The Response Team was established to manage human-panther interactions and depredations in such a way as to ensure public safety.

Comment: There is no accountability and no clear chain of command.

Response: Because each agency is responsible for responding to different geographical areas, one chain of command would not be appropriate and would impede the timely response and management of serious interactions. The lead agency responding to a reported interaction will make the initial assessment and communicate that assessment to the interagency team members. The Response Team will review the preliminary assessment and make the final classification and approve the proposed action plan. Certain situations might require immediate action on the part of the responding agency without participation by all team members. An Oversight Committee, consisting of senior-level agency staff, will be informed immediately for interactions classified as an Incident, Threat, or Attack and will coordinate with the Response Team. In the case of a threat or attack against a human, the responding agency personnel must be able to make quick decisions in a timely matter without input from the entire team or Oversight Committee to ensure public safety. However, the Response Team and Oversight Committee will be notified as quickly as possible to ensure that the decisions are appropriate and to provide any assistance needed to manage the situation. The interagency team is made up of trained and experienced law enforcement officers and biologists who clearly understand the importance of quick actions when there is a demonstrable threat to humans.

Comment: People with a vested interest in the Florida Panther Program, i.e. biologists, should not be in charge at an incident as they are biased. A Criminal Forensic Investigator should be the decision maker at any incident.

Response: The Response Team consists of biologists, law enforcement officers and public information personnel that are well-trained, objective professionals from NPS, FWC, and FWS. This multi-agency team provides a multi-disciplinary approach to managing human-panther interactions.