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QUANTITATIVE STUDY OF PUBLIC SUPPORT FOR FLORIDA PANTHER
(*Puma concolor coryi*) RECOVERY

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EXECUTIVE SUMMARY

Fewer than 100 adult panthers remain in Florida, and this small population is increasingly threatened by habitat loss and degradation resulting from continued human expansion into core panther habitat in Southwest Florida. The purpose of this study was to help identify social constraints and opportunities for panther recovery. Our goal was to examine variables that predict public support for panther recovery among Florida residents in core panther habitat and a potential translocation site. Identifying target audiences, current attitudes, knowledge gaps, and preferred information sources improves the likelihood that outreach and education efforts will have their intended effect of reducing negative attitudes toward panthers or negative human-panther encounters and increasing support for panther recovery. By understanding the predictive variables that contribute to negative or positive attitudes toward panthers and panther management, agencies can identify groups or subsets of the population likely to be concerned by specific management actions, and can communicate with and involve specific audiences in management more effectively.

The objective of this study was to provide wildlife agencies with data to better understand the public's knowledge, attitudes, and intentions to act in support of or opposition to panther recovery efforts. This study examined the following research questions:

1. Do behavioral intentions, support for recovery, attitudes, risk perception, subjective norms, and knowledge levels differ between residents of Southwest (core panther habitat) and South Central (potential translocation site) Florida?
2. Do behavioral intentions, support for recovery, attitudes, risk perception, subjective norms and knowledge levels differ between urban and rural residents?

3. Are the postulated linkages among factors influencing public support for panther recovery significant, and, if so, what is the strength and direction of the relationships?
4. Which variables are associated with behavioral intentions and support for recovery; and how do those who support recovery differ from those who do not in terms of specific management preferences, beliefs, knowledge items, media preferences, and demographics?

We designed and conducted a telephone survey in March 2007 on a stratified random sample of 802 Florida residents. Strata were defined based on (1) location in core panther habitat (Southwest Florida) or a potential translocation site (South Central Florida), and (2) rural/urban setting. Two hundred residents were surveyed within each strata to enable comparisons of behavioral intentions, management preferences, attitudes, subjective norms, risk perception, knowledge levels and demographics.

Our results showed that in general, Florida residents have a moderately positive intention to act in support of panther recovery -- on a 5-point scale from 1 (most negative) to 5 (most positive) the weighted mean score on the behavioral intention scale was 3.33. Furthermore, 52% of respondents reported a willingness to write a letter to a political official and to pay a small additional tax in support of recovery. Seventy-five percent would not vote for a political official who favored development over panther recovery. Respondents expressed greater support for panther management practices targeting recovery (3.43) and expressed very positive attitudes toward panthers and panther protection (3.89). The perceived risk from panthers was low (2.30). Regression analysis of all response variables showed that behavioral intentions were directly

predicted by management preferences, attitudes and subjective (social) norm, and indirectly affected by risk perception, knowledge, and demographic characteristics.

Mean scores on the attitude scale indicated positive attitudes about panthers and the consequences of protecting panthers among all strata -- Southwest and South Central, and urban and rural locations. Most respondents (88%) in the total sample believed that protecting panthers was good because it helped to protect natural lands in Florida; 90% agreed that although they may never see panthers in Florida, it is important to know that they exist; and 85% disagreed that protecting panthers was a waste of money. Perception of risk from panthers was consistently low, with a majority of respondents unlikely to feel concerned about panthers living nearby in either their neighborhoods or natural areas.

We divided the sample into proponents (n=297), undecideds (n=387) and opponents (n=117) of panther recovery based on mean scores on the 3-item behavioral intention scale. The vast majority of all groups supported protection of panthers on public lands; and proponents and undecideds supported panther protection everywhere. However, specific beliefs, knowledge items, and management preferences differed among groups. According to mean scores on a 3-point scale, opponents, unlike proponents, tended to agree that panther protection leads to land use restrictions (2.19), that panthers compete with hunters for game species (2.09), and to oppose translocation of panthers into their home county (1.86).

Recommendations for Public Outreach for Panther Recovery

1. Incorporate perceived benefits of panther protection into outreach messages.

Beliefs can be bolstered or weakened based on new information and new ideas (Ajzen & Fishbein 1980). Attitudes figured prominently in the model predicting behavioral intentions, suggesting that communication strategies may be most effective if they include messages about

perceived benefits of protecting panthers and positive characteristics associated with the cats in messages. Proponents, undecideds, and opponents all tended to agree that protecting panthers had positive consequences. In the total sample, 92% believed that future generations should be able to see panthers in Florida, 90% agreed that it is important to know that panthers exist even though they will probably never see them in the wild, 88% of respondents agreed that protecting panthers helps to save natural lands, 85% agreed that protecting panthers keeps the environment healthy, 79% believe that panthers maintain balance in prey species, and 75% agreed that panthers have a right to exist wherever they are. Outreach might incorporate these perceived benefits, which are likely to resonate with a broad audience and reinforce existing positive beliefs, in messages to encourage behaviors which benefit panthers. For example, a billboard discouraging speeding in core panther habitat might be combined with a message about the need to protect every panther so they will be around for future generations to see.

2. Reach specific audiences with information.

New information can also be used to challenge existing beliefs (Fishbein & Ajzen 1975), although it is unlikely to sway individuals with strongly held beliefs (Rabin & Schrag 1999). The introduction of new information is particularly relevant to the social context of panther recovery because respondents who were undecided regarding their intention to act, and who may not have strong beliefs about panther recovery, made up nearly half (48%) of the total sample. Undecided respondents were less likely than proponents to have heard anything about panthers in the past six months, so targeting these individuals to communicate the endangered status of panthers may be an effective outreach strategy for increasing support. Because people are unlikely to be concerned about the peril of a species with which they have no familiarity or emotional connection, these messages might be more effective if they feature attractive photos of panthers.

A larger proportion of undecided respondents in this study were Latino (12%) than either proponents (8%) or opponents (4%). This may be an area for further investigation, particularly in light of the fact that Latinos are projected to become the largest minority group within the next decade (Hill & Moreno 2001). Agencies may be able to reach out to this constituency by identifying and developing relationships with gatekeeper organizations, such as churches, schools or community centers, and ensuring outreach materials are linguistically and culturally appropriate.

3. Address concerns of specific stakeholder groups, such as hunters.

Less supportive respondents expressed concerns about land use restrictions and the effects of panthers on game species, rather than any inherent dislike of panthers. These types of cost-related concerns have been cited in making wolves in Yellowstone a “biophysical pawn” in a larger debate over resource management (Nie 2001). In addition to holding more negative attitudes toward panthers and panther protection, respondents who had hunted or fished within the past two years were less likely to feel social pressure to support recovery. It may be helpful for agencies to provide information about the likely impact of panthers on game species, the current size of deer populations in Florida, or the benefits of top-down trophic control to the fitness of deer herds. Government agencies are often considered a credible and trustworthy source of environmental information, but the use of other spokespersons to address this stakeholder group also should be considered. In the total sample, 70% of respondents selected wildlife agencies as the best source for information (1% politicians, 23% environmental groups, and 6% sportsmen). However, among hunters, although the same proportion selected wildlife agencies (70%) and politicians (0%), fewer favored environmental groups (18%), and a larger proportion preferred sportsmen’s clubs (12%). In the event that the negative relationship between

hunting demographics and support for recovery indicates an underlying conflict, considerable care should be given to selecting the spokesperson for information, such as using a well-known hunting advocate. Alternatively, involving members of the hunting community in data collection for panther research may help to foster trust between wildlife managers and hunters, and to increase faith in the information produced.

4. Target key stakeholders, such as large landowners, with practical information and alternatives.

Based on experience with wolf reintroductions in Yellowstone, concerns about restrictions of land use may be best addressed by focusing on improving relations between wildlife agencies and local landowners and fostering trust through regular, transparent communication (Fritts & Carbyn 1995; Jacobson 1999). For wolf recovery, a persuasive argument for landowners regarding reintroduction was that reintroduced wolves would be considered “experimental” animals, and offered landowners more options if they became a nuisance, than if wild wolves simply repopulated the Yellowstone ecosystem. If this will be true of translocated panthers, this should be made apparent. Large landowners are most likely to feel unfairly burdened by the costs of preserving panthers. Indeed, when ownership of more than 20 acres is included in the regression analysis for behavioral intentions as a dichotomous variable, it is a significant negative predictor of intention to act in support of panther recovery ($B=-0.47$, $p<0.05$). Furthermore, those who intended to oppose panther recovery were significantly more likely to believe that panthers should only be protected on public lands. This highlights the importance of continuing to advance landowner incentive programs such as the Rural Land Stewardship legislation in Collier County, which make listed species such as panthers a benefit rather than a cost to the private landowners upon whom their long term persistence largely depends.

5. Provide creative outreach to newcomers to Florida.

The mean length of Florida residence for proponents was at least 6 years longer than either undecideds or opponents. Respondents who had lived in Florida between 20 and 50 years had the most positive attitudes toward panthers, and the lowest perceived risk. Those who had lived in Florida for less than 20 years or greater than 50 years generally had less positive attitudes toward panthers, although the latter was likely a consequence of age. This suggests that newer residents of Florida may be a target audience for communication campaigns, to maintain high public support for panther recovery and low levels of human-panther interaction. Welcome billboards in panther habitat might visually introduce new residents to a photograph of the Florida state animal, while advocating that drivers be vigilant about their speed. Brochures or magnets could be introduced in welcome packets disseminated to new residents by chambers of commerce, or exhibits at airports may reach new residents.

6. Support current outreach efforts.

Risk may not currently have direct association with behavioral intention because levels of human-panther interaction are so low. One widely publicized incident could potentially change the relationship between risk perception and support, making it much more critical predictor of intentions. However, the relationship between greater knowledge levels and lower risk perception offers support for the importance of current outreach and education efforts underway to teach residents in panther habitat about how to safely coexist with panthers.

7. Emphasize rarity of panthers and hopeful progress in outreach messages.

Only a minority of respondents were able to correctly respond to a series of knowledge questions about Florida panthers. These included facts such as the number of wild panthers remaining in Florida: only 36% responded fewer than 100; however, significantly more

proponents (52%) than opponents (19%) responded correctly. Proponents were also more aware of the reasons for panther endangerment, and the status of panthers. Few respondents regardless of their levels of support were aware of other information about panthers, such as lack of any attack on a human by a panther in Florida (14% overall correct), or the best way to respond to a panther which is approaching aggressively (28% correct).

All of these are potential areas of emphasis in an outreach strategy. People value rare things, and proponents were more aware of the endangered status of panthers. Environmental behavior can be motivated by a sense of urgency to an extent, provided that the problem is not perceived as overwhelming, and action consequently futile. To that end, outreach messages to the general public should combine the endangered status of panthers with updates on what progress has been made in increasing the number of panthers in the wild. Since our results indicate that media outlets such as television and newspapers are reaching proponents, undecided respondents and opponents alike, it is important that agencies maintain strong relationships with representatives of local and regional media. Sending updates via a broadcast email to reporters who commonly handle environmental news stories would be reasonably simple, requiring only a current contact list. Establishing personal relations with media representatives is an important precursor for good coverage (Jacobson 1999).

8. Promote panther recovery along with efforts to protect natural lands.

The fact that respondents generally identified habitat loss as the primary reason for panther endangerment may facilitate obtaining public support for management interventions such as protection of natural lands. In fact, support for this measure was high across all strata, and among proponents, opponents and undecided respondents alike. It may now be important that residents not only be aware of habitat loss as the greatest cause, but understand how much land panthers

actually need. Environmental organizations in New England have successfully tied the fate of the wolf to that of wilderness (Nie 2001). Beliefs about the positive consequences of panther protection found in this study, combined with the high levels of support for protecting natural lands, suggest that panthers might be effectively marketed to the public as part of a larger campaign to preserve habitat in Florida, and “keep Florida beautiful.”

9. Develop relationships and communicate with demographic groups more likely to oppose translocation.

Translocation, or reintroduction, is often one of the most controversial issues in large carnivore conservation, and the findings in this study were consistent with previous studies (Clark et al. 1996; Lohr et al. 1996). Respondents who opposed translocation in this survey were less likely to engage in outdoor activities, and were generally older, poorer and less educated than those who supported translocation. As a result, these individuals are unlikely to see signage or receive educational materials in public parks. A majority (67%) of those who opposed translocation were female, compared to 56% of supporters. The fact that the mean age of those who opposed translocation was nearly 10 years older than that of supporters highlights the importance of future monitoring as Florida’s population continues to age (U.S. Census Bureau 2000). The majority of both undecideds (54%) and opponents (58%) reported a preference for getting their news from television, with an additional third of each group preferring newspaper sources, indicating that either outlet may be an effective way of reaching these individuals. Since support for translocation was correlated with lower risk perception and greater knowledge levels, educational strategies which use these outlets to address knowledge gaps regarding how to live safely in panther habitat may increase support for translocation. Wildlife managers can involve these demographic groups in citizen task forces, advisory councils or stakeholder planning

teams, which would assist the agencies in selecting the most appropriate means of preparing local residents for any proposed translocation (Decker et al. 2001).

10. Continue to monitor public support and concern for panther recovery and assess the effectiveness of various outreach efforts.

Attitude salience and levels of support are likely to change as demographic characteristics of Florida residents change and new challenges or opportunities in panther recovery arise. Future evaluation and monitoring efforts will be needed, particularly if translocation is to take place, in order to ensure that agency goals address stakeholder views, and that stakeholders most directly affected by translocation know how to coexist safely with panthers.

CHAPTER 1 INTRODUCTION

At the time that it was federally listed as endangered in 1967 (Federal Register 32:4001), scientists had yet to confirm that the Florida panther (*Puma concolor coryi*) still existed in the wild (Alvarez 1993). The combined effects of deliberate extermination and loss of habitat had driven panthers to the brink of extinction, eliminating them from 95% of their historic range in the southeastern United States by 1900. In 1982, concurrent with the release of the first panther recovery plan (U.S. Fish and Wildlife Service 1981), the panther was designated as the Florida state animal, signifying a positive shift in public attitudes toward panthers. Despite protection from hunting, in the ensuing decade scientists estimated that the effective population size may have dropped to as few as 10 individuals (Hedrick 1995). Today biologists estimate that the population size has increased to 80-100 panthers which occupy the matrix of public and private lands in Florida, south of the Caloosahatchee River (U.S. Fish and Wildlife Service 2006b).

The current rate of loss, degradation and fragmentation of panther habitat presents the greatest challenge to panther recovery efforts (Main et al. 1999; U.S. Fish and Wildlife Service 2006). Between 1991 and 2003, 11,000 miles of public roads were built to accommodate the influx of people into southwest Florida (Gross 2005), much of which has been identified as core habitat for panthers (Kautz et al. 2006). From 2005 to 2006, the number of Florida residents is estimated to have increased by over 300,000, and Collier, Lee and Hendry Counties alone increased by nearly 35,000 (U.S. Census Bureau 2007). Florida lost over 700,000 ha of forest between 1935 and 1995 (Gross 2005), and biologists estimate that public lands in southwest Florida can only support up to 22 panthers in the wild (Logan et al. 1993). The remaining panther population inhabits private lands which are subject to the impacts of urban sprawl, residential development, conversion to agriculture and silviculture, mining and mineral

exploration (Main et al. 1999). Development in Southwest Florida continues with the construction of Ave Maria University, as well as a town to accommodate it, in known panther habitat immediately north of the Florida Panther National Wildlife Refuge.

As panther populations become more concentrated in smaller areas, increased contact between individuals exacerbates intraspecific aggression and epidemiological hazards (Cunningham 2005). Successful recovery of this endangered subspecies, which exists at low population densities in habitat highly prized by development interests, will require understanding the variables that predict levels of support for panther recovery efforts among the stakeholders who directly or indirectly affect panthers. Widespread, active public support for collective environmental actions such as habitat conservation will be essential to successful recovery.

Furthermore, as both human and panther populations continue to expand, so does the potential for human-panther encounters (Cougar Management Guidelines Working Group 2005). Public opinion on panthers in Florida, unlike pumas in the western United States, may be positively influenced by a relative lack of direct human-panther conflict because of the small number of panthers currently occupying the state. However, the perceptions could change rapidly as the potential for human-panther interaction increases. Wildlife agencies and concerned public officials have taken steps to maintain low human-panther interaction through public education and have prepared an interagency response plan for dealing with encounters (U.S. Fish and Wildlife Service 2006a). The perceived threat that panthers present to humans, pets and livestock, the root cause of extirpation policies at the turn of the century (Clark et al. 1996), still has the potential to negatively influence public attitudes.

The purpose of this study was to examine variables which predict support for panther recovery and provide wildlife agencies with data about knowledge levels and attitudes toward

panthers among Florida residents in panther habitat and potential translocation sites. This type of baseline information can be used to help evaluate the success of outreach and education efforts. Identifying target audiences, current attitudes, knowledge gaps, and preferred information channels and sources improves the likelihood that outreach and education efforts will have their intended effect of reducing negative human-panther encounters and increasing support for panther recovery. By understanding the predictive variables that contribute to negative or positive attitudes toward panthers and panther management, agencies can identify groups or subsets of the population likely to be concerned by specific management actions, and can communicate with and involve specific audiences in management more effectively.

Literature Review

Biologists and social scientists alike have often cited social and political factors as the most formidable challenge to large carnivore management and restoration in the United States (Fritts & Carbyn 1995; Belden & McCown 1996; Clark et al. 1996; U.S. Fish and Wildlife Service 2006b). Research in human dimensions of wildlife management treats people as an essential part of effective management by seeking to achieve a scientifically-based understanding of human behavior and motivations (Decker & Chase 1997). By formally and scientifically measuring people's perceptions of wildlife, their management preferences for wildlife, and the manner in which they affect or are affected by wildlife and wildlife management decisions, wildlife managers are able to incorporate this information into the decision-making processes (Decker et al. 2001; Miller & McGee 2001). Ideally, a "solution" to a people-wildlife problem is largely process-driven, and requires that the full array of stakeholders be involved throughout. It also requires constant reexamination and evaluation, since stakeholder beliefs and attitudes can change with increased exposure to a situation or to accommodate new information (Decker & Chase 1997). Failure to involve the public, or to take appropriate action to ensure that agency

goals are aligned with stakeholder preferences, is likely to erode stakeholder trust and investment in any decisions made (Slovic 1993). Concerns for local stakeholders might include such issues as awareness of the large carnivore's presence, appropriate human behavior to avoid unnecessary human-wildlife conflicts, and protocols for dealing with individual animals that threaten human safety or livelihoods (Primm 1996).

The ongoing effort to engage and involve stakeholders in the Yellowstone wolf (*Canis lupus*) reintroduction has been credited with establishing trust between recovery team members and historically opposed stakeholder groups, such as hunters and livestock owners. A key interaction between recovery team members and livestock owners was the development of a protocol for dealing with problem wolves which included a short response time and immediate removal (Fritts & Carbyn 1995; Jacobson 1999). Without social research and continuous interaction, this need might not have been identified and addressed.

A promising study on large carnivores found that conservation is possible at high human densities provided that management policy is favorable (Linnell et al. 2001). Since the 1970's, predator control methods such as bounties and poisoning have decreased or ceased throughout North America. Today, state wildlife agencies treat pumas as a harvestable game species rather than a pest, with the exception of the southeastern states where panthers are listed as endangered. Human dimensions research can promote favorable carnivore management policies, such as maintenance of a prey base, by encouraging and maintaining a supportive and informed constituency for the panther as the human population of Florida continues to grow.

Predicting Support for Large Carnivore Conservation: Although the reversal of predator extirpation policies in the U.S. reflects a positive change in public attitudes toward large carnivores at the national level, it is important that wildlife managers understand the complex set

of interacting variables that contribute to attitude formation. These include an individual's values toward animals and nature; the physical and behavioral characteristics of the species; an individual's knowledge and understanding of a species; and past and present interactions with the species (Kellert et al. 1996). By understanding these interacting variables and carefully measuring attitudes and levels of support among indirectly and directly affected stakeholders, wildlife agencies can avoid such pitfalls as overestimating support among local residents. In the context of Grizzly bear (*Ursus arctos horribilis*) reintroduction in the Rockies, for example, in spite of national support, local hostility made human-caused mortality, such as illegal shooting, the main limiting factor for Grizzly bear populations (Primm 1996).

Attitudes toward a single species exist within a larger context of how an individual values nature and animals. It may be more likely for people who value nature and express interest in wildlife generally to be concerned about the welfare of panthers than those who do not. For example, respondents identified as "protectionist" on a wildlife value orientation index are likely to be less willing to destroy a mountain lion than those identified as "utilitarian" (Zinn & Pierce 2002). Similarly, Florida residents who are interested in wildlife for non-utilitarian purposes such as wildlife-viewing may be more supportive of recovery efforts.

It has been suggested that pumas do not have the same historical and cultural presence in North America as wolves and bears because of their secretive nature, lack of vocalizations, and the fact that European settlers had no prior experience with them in Europe (Kellert 1996). Still, American society uses pumas as totems for sports teams to invoke guardianship in inherently uncertain contexts and in car culture to symbolize "agility, youthfulness, and speed" (Neal 1985). In Florida, the panther serves as the mascot for numerous sports teams, including the Sunrise professional hockey team and Florida International University athletics. Other characteristics

relevant to the context of panthers which affect attitudes are its large body size, perceived intelligence, morphology, mode of locomotion and behavior (Kellert & Berry 1980; Coursey 1998; Ward et al 1998). According to these criteria, the panther is generally classified as charismatic megafauna, as reflected by its status as Florida's state animal.

As large carnivores, the perceived risk that panthers pose to human safety plays a significant role in wildlife management decisions and can influence attitudes toward a given species (Riley & Decker 2000; Smithem 2005). Between 1890 and 2003, 16 fatal and 92 non-fatal puma attacks on humans took place in the United States and Canada (Fitzhugh et al. 2003). Seven highly publicized fatal attacks have taken place since 1991 (Cougar Management Guidelines Working Group 2005), and widespread media coverage may be cueing the public that encounters between pumas and humans in the West are becoming more frequent (Riley & Decker 2000). This makes risk perception an important aspect of predicting support for panther recovery. Risk perception studies attempt to understand the “judgments people make when they are asked to characterize and evaluate hazardous activities” (Slovic 1987). Although there are currently no recorded incidences of a panther attacking a human in Florida (Florida Fish and Wildlife Conservation Commission 2006), risk perception of panthers likely falls in the category of a low probability/high consequence familiar risk (Slovic 1987). Familiar risks include those which receive greater exposure in the media. The lay person's reaction to risk, unlike most experts, focuses on the magnitude of the undesirable outcome rather than its probability (Margolis 1996). Social acceptability of perceived risk from large carnivores may also be contextually specific (Kleiven et al. 2004). A panther in the wilderness may be acceptable to local communities, whereas a panther found near a residential community may not.

Alternatively, a panther which has attacked a pet may be tolerated, whereas a panther that has attacked a human may not.

Demographic variables, such as location, level of education and gender, can also influence perceived risk and consequent attitude formation (Kellert 1985; Riley & Decker 2000; Zinn & Pierce 2002). Urban residents have expressed more positive attitudes toward predators, while rural landowners often have the most negative attitudes (Kellert 1985; Tucker & Pletscher 1989; Thompson 1992). These attitudes may be the result of disputes over resource use and rural development, and may be a surrogate for land use conflicts with central political authorities (Bjerke et al. 2000). Predicting attitudes may not be as simple as identifying an individual's current location, however. A study in Sweden demonstrated that urbanites with rural origins had more positive attitudes toward wolves than multi-generational urbanites (Heberlein et al. 2005). Risk tolerance among urban residents for wolves and bears has been found to be greater than that of rural residents (Kleiven et al. 2004). These results, although seemingly contradictory, highlight the importance of understanding the interacting variables which predict attitudes toward predators within their specific social context.

Studies have shown conflicting results regarding the effects of gender and parental status on perceived risk from pumas (Riley & Decker 2000; Zinn & Pierce 2002). Zinn and Pierce (2002) found that women expressed greater concern than men about being attacked by a puma, but were less willing to accept destroying it than were men. Furthermore, respondents who had children perceived greater risk than those without. The gender difference may be related to the tendency of women to favor management practices that prevent or reduce animal suffering (Richards & Krannich 1991). Riley and Decker (2000), however, found that neither gender nor parental status affected risk perception of pumas in Montana residents. Demographic variables

also have been known to exert a collinear effect on attitudes or behavior. One study showed that women were significantly more likely than men to participate in environmentally protective behaviors and policy issues, and that the gender difference in behavior was greatest among older adults (Steel 1996).

Knowledge about an animal, how it relates to humans and how it is managed may influence attitudes in a variety of ways. People in the United States have been shown to generally know more about species that can inflict harm and injury to humans than those that cannot (Kellert & Berry 1980). Based on this finding, one might logically conclude that those living in puma habitat would know more about pumas, and have correspondingly more negative attitudes. Residents in Arizona, however, simultaneously exhibited low knowledge levels about pumas, and high levels of support for their conservation in all landscapes (Casey et al. 2005). Studies of attitudes toward wolves, however, have shown that lack of knowledge about human-wolf interactions is often associated with greater fear of the threat that wolves represent to humans (Bath & Buchanan 1989; Tucker & Pletscher 1989). A study of four special interest groups regarding wolves and a proposed reintroduction in New Brunswick found differences in attitudes despite similarly low knowledge levels (Lohr et al. 1996). The process by which information on carnivores is obtained also may influence attitudes. By enlisting biologists, managers and local hunters to conduct field work together, the lynx (*Lynx lynx*) registration program in Norway has succeeded in establishing a rapport between traditionally conflicting stakeholder groups (Skogen 2003). This type of collaboration may make the information acquired more credible to stakeholders in controversial settings, highlighting the importance of a credible source in the communication of information.

The perceived threat that federally-listed carnivores potentially pose to economically important livestock, game species, and alternative land uses may negatively influence stakeholder perceptions (Clark et al. 1996). Although few Florida residents will ever have a chance to interact directly with panthers because of the panther's small population size, panthers are a wide-ranging species whose habitat requirements may conflict with certain land uses such as off road vehicle use or development. Outdoor use demographics, such as whether or not an individual hunts, can be associated with support for wildlife management decisions, such as bag limits to increase prey abundance for panthers. Willingness to support wolf reintroduction was negatively correlated with participation in big game hunting, possibly because hunters anticipated that wolves would compete with them for large game (Lohr et al. 1996). Rural landowners and livestock producers have also been found to have more negative attitudes toward wolves, a result of real or perceived effects of wolves on livestock husbandry and game management (Kellert 1985; Williams et al. 2002; Anderson and Ozolins 2004). In fact, the listing of a species may actually motivate landowners to make their land less habitable for that species, depending on factors such as land use, recreation activity and distrust of government (Brook et al. 2003). Indeed, social identity and occupation of rural residents may be a stronger predictor of attitudes than actual encounters with a species (Naughton-Treves et al. 2003).

The Technical/Agency Draft Florida Panther Recovery Plan Third Revision lists translocation of panthers north of the Caloosahatchee River and into their former range in the southeastern United States as objectives (U.S. Fish and Wildlife Service 2006b). A successful translocation is likely to produce more vocal or physical opposition than current attitudes toward a species might suggest (Clark et al. 1996; Lohr et al. 1996). Additionally, attitudes may differ based on an individual's proximity to a proposed reintroduction site (Enck & Brown 2002). This

phenomenon has been attributed to local community perceptions that large carnivore reintroduction imposes the conservation ethic of wealthy, urban populations on poorer, rural populations, distrust of the government, and perceptions of what is at stake (Kellert et al. 1996; Riley & Decker 2000). Past studies have shown that even overwhelmingly positive public attitudes can be reduced by increased interactions with wildlife – a condition which will be exacerbated by successful reintroductions as animal populations increase (Williams et al. 2002). Even in the absence of reintroductions, researchers measuring attitudes toward pumas in Montana anticipate that, as expanding human populations encroach further into puma habitat, increasing numbers and intensity of encounters will correspondingly reduce stakeholder tolerance of the animals (Riley & Decker 2000).

Length of residence and consequent level of involvement with a particular species are also likely to be important in determining attitudes toward that species. A study of Utah residents' attitudes toward puma and black bear (*Ursus americana*) management practices found that longtime residents were less likely to disapprove of puma hunting and the use of hounds than newcomers to the area (Teel et al. 2002). Longtime residents living in core panther habitat may have different attitudes than local residents who have only recently moved to the area. The presence and direction of a relationship between length of residence and attitudes may depend on a person's level of involvement and the nature of the human-panther interactions in the area (Manfredo et al. 1998). Involvement with a species can include anything from personal or second-hand encounters to widely publicized encounters of third parties in the press. The absence of a link between length of residence and attitudes toward pumas found in some studies may reflect a lack of involvement with the animal (Riley & Decker 2000; Casey et al. 2005). Currently, Florida residents are far more likely to hear about any human-panther encounters from

local media than have a personal, or even second-hand, encounter with a panther. However, relaying of encounters through the media may serve a similar social function as first- or second-hand sources with regard to attitudes toward panthers (McClelland et al. 1990; Riley & Decker 2000).

Specific predator management interventions also provoke different responses among different subsets of the population. For example, the majority of Utah residents sampled in a study of puma and black bear management practices disapproved of recreational hunting to manage black bears, using hounds to hunt the two species and the practice of bear baiting (Teel et al. 2002). Degree of disapproval, however, was greatest among urbanites, women, respondents with more education, those over the age of 25, those who had lived in Utah for more than 10 years, and those who participated in nonconsumptive outdoor recreation. Public acceptance of puma management interventions in Colorado depended on the specific circumstances of the encounter, such as whether the puma was merely seen, or had attacked a human. Additionally, residents differed in their preferences depending on proximity to puma habitat, with those living closer finding hunting and trapping more acceptable (Manfredo et al. 1998). Given the protected status and small population size of panthers, management practices do not include lethal control unless a panther has attacked a person. However, 2 panthers have recently been removed from the wild for nuisance behavior such as repeated livestock depredations. To that end, it is important that wildlife managers understand Floridians' threshold for calling authorities to remove a panther. Beyond reducing human-panther conflict, the Technical/Agency Draft Florida Panther Recovery Plan Third Revision seeks to increase the current panther population and establish 2 additional populations in order to eventually de-list the panther. Therefore it is also important to understand Florida residents' attitudes toward management interventions such as

translocation and habitat protection, which the recovery plan lists as cornerstones to restoring viable panther populations (U.S. Fish and Wildlife Service 2006b).

Theoretical Framework

A cognitive approach in social psychology examines endogenous components “underlying the process that leads from human thought to action and the relationship between those [components]” (Decker et al. 2001, p. 40-41). One frequently validated theory in social psychology is the Theory of Reasoned Action (TRA), which provides a framework for understanding how people decide whether or not to engage in a specific behavior. A behavior refers to an observable response to a given target within a specific situation such as voting for a ballot initiative or speeding on a highway. The TRA is based on the assumption that people use the information on hand and take into account consequences of their actions in order to decide whether or not to engage in a particular behavior (Ajzen & Fishbein 1980).

Intention, the best predictor of behavior, is the cognitive representation of a person's readiness to perform a given behavior or “willingness to act”, and is considered the immediate antecedent of behavior. A meta-analysis of 113 studies found a mean correlation of 0.62 for the intention-behavior relationship (van den Putte 1991 cited in Routh et. al. 2005). According to the TRA, a behavioral intention is determined by two components: (1) the individual's attitude toward the specific behavior, and (2) their subjective norms (i.e., how their actions will be perceived within their community).

Attitudes toward a behavior refer to a person's negative or positive evaluation of the attitude object, which can be a person, object, concept or action. Attitudes are determined by behavioral beliefs and an evaluative component. Behavioral beliefs are an individual's beliefs about the most likely consequences of an action, which he or she then evaluates as good or bad. The power of an attitude to predict a behavior depends on specificity and salience of the attitude

(Fishbein & Ajzen 1975). A relevant attitude for predicting whether or not an individual will recycle might be composed of the belief that recycling improves the environment for future generations, and the evaluation that improving the environment for future generations is good. Salience refers to the ease with which thoughts come to mind when confronted with the attitude object. The more experience a person has with the attitude object, the more accessible the link is between attitudes and behaviors (Fazio 1990; McCleery et al. 2006).

Subjective norm is the social pressure that an individual feels to engage or not to engage in a behavior (Ajzen & Fishbein 1980). Subjective norm is determined by an underlying set of normative beliefs about the expectations of important others. Examples of important others, called normative referents, are a person's spouse, family and friends. Referent motivation describes the degree to which a person feels compelled to comply with the perceived expectations of these important others (Routhe et al. 2005). Generally, the more favorable the attitude and subjective norm are toward a behavior, the stronger should a person's intention be to perform that behavior (Ajzen & Fishbein 1980). Provided that researchers do not overstep the bounds of the theory, strong predictive utility has been found for the model (Sheppard et al. 1988).

The TRA and the Theory of Planned Behavior (TPB) have been used to predict and explain behaviors regarding a variety of environmental topics, including wildlife management. Among them are voter intentions regarding wolf reintroduction (Bright & Manfredo 1996; Pate et al. 1996) voter intentions on a ballot initiative on wildlife trapping (Manfredo et al. 1997), boater intentions to speed in manatee (*Trichechus manatus*) zones (Aipanjiguly et al. 2003) and support for hunting as a wildlife management strategy (Campbell & MacKay 2003). As described in the previous section, socioeconomic and demographic variables have also been

known to influence environmental behaviors, although the effects of demographic variables on environmental behavior may have less predictive ability than psychographic criteria when it comes to particular environmental behaviors such as green consumerism (Straughan & Roberts 1999). Routhe et. al. (2005) tested a conceptual model which extended the boundaries of the TRA to encompass a collective environmental action – namely building a dam –to understand and predict public support for or opposition to collective actions that can significantly impact the environment. Using behavioral intentions such as attending a local meeting as expressions of support or opposition, they found that the postulated linkages between subjective norms, attitudes, and behavioral intentions were similarly robust as those found in studies of specific individual behavioral intentions (Routhe et al. 2005).

Panther recovery, for the purposes of this study, refers to management interventions targeting the eventual downlisting and delisting of the panther, including such action as increasing the number of panthers in the wild, habitat protection, and translocation of panthers north of the Caloosahatchee River. Panther endangerment is the aggregate of a series of social phenomena, such as selling land for uses incompatible with panthers and deciding to speed in designated panther zones, brought about by a variety of human motivations. It follows that any potential management interventions must target the wide variety of threats to panthers resulting from these social phenomena, and that intention to act in support of recovery is likely to be based in part on opinions about any and all proposed actions.

Manfredo et al. (1998) state that “a basic challenge of human dimensions research is to measure attitudes toward a range of management scenarios...specific enough to ensure predictive validity but...also generic enough to be applied across a wide variety of situations”. In the interests of meeting both objectives, this study proposes a moderating variable between

intention to act, on the one hand, and subjective norms/attitudes toward panthers and the consequences of their protection on the other. This variable, *panther management preferences*, is specific to this study and is composed of the degree to which a respondent supports or opposes specific panther management practices from the Technical/Agency Draft Florida Panther Recovery Plan Third Revision, the degree of protection which they believe panthers should be afforded, and an overall level of support for increasing the number of panthers in the wild. We propose that support for specific management interventions may help to explain willingness (or unwillingness) to take individual action to influence collective actions to help save panthers. Many respondents may be supportive of panther recovery in the abstract but these attitudes may lack salience or constraint due to an absence of previous experience with what panther recovery entails. Indeed, panther experts have expressed concern about this type of passive, widespread support in the past (Belden & McCown 1996). Participants in surveys have also been known to change their attitudes based on the thoughts which are most immediate at the time of questioning (Zaller & Feldman 1992). By exposing respondents to actual or proposed recovery efforts, this study attempts to ensure greater salience in attitudes, thereby strengthening the link between attitudes and intentions.

Risk perception is an additional social facet important to large carnivore conservation. It plays a large part in studies examining attitudes toward pumas and other large predators using the Wildlife Acceptance Capacity (WAC) model (Riley & Decker 2000; Smithem 2005). According to the WAC model, greater perceived risk reduces stakeholder acceptance capacity for a given species by influencing attitude formation. Risks to personal safety reduce acceptance capacity to a larger degree than risks to property. Although the small population of panthers makes applying the WAC model premature at the current time, the physical characteristics of

panthers make risk perception immediately relevant. Perceived risk from panthers likely has a similar relationship to attitudes and support for panther recovery as in the WAC model when applied to larger populations of pumas in the western United States. The effect of knowledge on attitudes and risk perception, however, is ambiguous in the literature. Some studies of pumas have shown respondents to have positive attitudes in spite of low levels of knowledge overall (Casey et al. 2005), while wolf reintroduction studies have shown that a lack of knowledge of human-wolf relationships was associated with greater fear of wolves (Tucker & Pletscher 1989).

Study Description and Research Questions: This study proposes that panther management preferences directly influence an individual's willingness to act in support of or opposition to panther recovery, and that these preferences are, in turn, influenced by cognitive and evaluative components in the form of attitudes (both toward panthers and their protection) and generalized social pressure to support recovery (Figure 1-1). Specifically, individuals who support panther management efforts targeting panther recovery, have positive attitudes toward panthers and perceive a generalized social pressure to support recovery are more likely to act in support of recovery. Similarly, those who oppose panther management interventions, have negative attitudes toward panthers and their protection, and perceive a social pressure to oppose recovery are more likely to act in opposition to recovery. Factors which this study proposes indirectly influence behavioral intentions include risk perception, knowledge about panthers, and demographic characteristics. According to this model, perceived risk has a negative relationship with attitudes, support for management efforts to recover panthers, and subjective norms.

My review of the literature also suggested that demographic variables including location of residence (urban or rural) and proximity to panther habitat were likely to be associated with attitude formation in the context of panthers. By comparing attitudes of South Florida residents

currently living in core panther habitat to those of South Central Florida residents living in potential translocation sites this study examines relationships between proximity to panthers and public support for recovery. Urban and rural populations in Florida are likely to focus on different potential consequences of panther recovery (e.g., rural residents may be more concerned about land use restrictions because they are more likely to own land in panther habitat). Therefore, to ensure that the rural samples would be large enough to allow for comparisons with the urban samples, we separated both sites into urban and rural strata, and explored the nature of their relationships to other factors influencing support.

This study examines and explores the relationships between factors influencing public support for panther recovery by answering the following research questions:

1. Do behavioral intentions, support for recovery, attitudes, risk perception, subjective norms, and knowledge levels differ between residents of Southwest (core panther habitat) and South Central (potential translocation site) Florida?
2. Do behavioral intentions, support for recovery, attitudes, risk perception, subjective norms and knowledge levels differ between urban and rural residents?
3. Are the postulated linkages among factors influencing public support for panther recovery significant, and, if so, what is the strength and direction of the relationships?
4. Which variables are associated with behavioral intentions, support for recovery, attitudes, risk perception, subjective norms, and knowledge levels; and how do those who support recovery differ from those who do not in terms of specific management preferences, beliefs, knowledge items, media preferences, and demographics?

**Attitudes toward
panthers and
their protection**

**Knowledge
about
panthers**

- Demographics**
Hunt/Fish
Hike/Camp
Interest in wildlife
Landownership
Livestock ownership
Current residence
Past residence
Duration of FL residence
Children in home
Pet ownership
Education
Race
Ethnicity
Age
Income
Gender
Southwest/South Central FL
Rural/Urban

**Perceived risk
from panthers**

**Panther
management
preferences**

**Behavioral
intention to
support/oppose
recovery**

**Subjective norm
to support/oppose
recovery**

Figure 1-1. Conceptual diagram of factors influencing intention to act in support of or opposition to panther recovery.

CHAPTER 2 METHODS

Study Site Description

Southwest Florida - Core Panther Habitat

Radio telemetry locations show heavy use by panthers of both private and public lands in Collier, Lee and Hendry Counties (Thatcher et al. 2006, Figure 2-1). Federal and state lands within this area include Big Cypress National Preserve, the Florida Panther National Wildlife Refuge, Fakahatchee Strand State Preserve and Picayune Strand State Forest. Both Lee and Collier Counties have experienced heavy population growth and development over the last decade, with the population of Lee increasing by 11.64% and Collier by 14.03% between 2000 and 2003 (U.S. Department of Agriculture Economic Research Service 2004). The three Counties occupy 6,411 km², much of which is designated core panther habitat (U.S. Fish and Wildlife Service 2006b). As of the last census, the total human population of Southwest Florida south of the Caloosahatchee River was 562,556 (U.S. Census Bureau 2007). Lee and Collier Counties are both classified as metropolitan, and Hendry as non-metropolitan based on location and commuting rates to metropolitan areas (U.S. Department of Agriculture Economic Research Service 2004). Panther recovery efforts have been underway in Southwest Florida for close to three decades (U.S. Fish Wildlife Service 1981). Speed limits are posted in designated panther zones, and signage about panthers and educational materials such as brochures are provided to park visitors.

South Central Florida – Potential Translocation Site

Based on findings regarding potential panther translocation sites within Florida (Thatcher et al. 2006) and objectives of the Technical/Agency Draft Florida Panther Recovery Plan Third Revision (U.S. Fish and Wildlife Service 2006b), South Central Florida refers to the area

bounded at the south by the Caloosahatchee River and at the north by Interstate 4. (Thatcher et al. 2006) ranked three potential “panther habitat” areas within South Central Florida as the best potential sites for translocation: Avon Park Bombing Range, Fisheating Creek/Babcock Ranch, and Duette Park. Radio telemetry locations show that male panthers use these habitats, although no females or kittens have been documented here in the past 35 years. In order to be included in the study, counties had to be immediately adjacent to or within a potential translocation site. The counties which met these criteria were Charlotte, DeSoto, Glades, Hardee, Highlands, Manatee, Okeechobee, Osceola, Sarasota, the portion of Polk and Hillsborough south of Interstate 4, and the portion of Lee County north of the Caloosahatchee River. Hardee, DeSoto, Highlands, Okeechobee and Glades Counties are classified as non-metropolitan, and the remainder as metropolitan (U.S. Department of Agriculture Economic Research Service 2004). The population for this region as of the most recent census was 2,034,071 (US Census Bureau 2007).

Stakeholder Interviews

From July 13-21, 2006, we conducted 17 telephone interviews with wildlife and land managers from federal, state and municipal agencies in both sites in order to identify relevant stakeholder groups likely to be concerned with panthers and panther management. We then conducted 22 semi-structured telephone interviews (Leech 2002) between August 9 and December 1, 2006 in order to obtain detailed, in-depth qualitative information from representatives of the following key stakeholder groups about the social context of panther recovery in Southwest and South Central Florida: large landowners (including ranchers), environmental groups, sportsmen, developers, county commissioners, and media representatives. Whenever possible, multiple respondents were included from a stakeholder group to check the validity of responses by comparison (Meyer 2001). All interviewees were asked to report perceived impacts of panthers and/or panther recovery on them, their family or their community,

and to evaluate these impacts as positive, negative or neutral (see Appendix A for landowner discussion questions). We incorporated the results of the interviews into a survey instrument designed to quantitatively describe and compare the individual factors which contribute to level of support for or opposition to panther recovery in urban and rural residents living in primary panther habitat (Southwest Florida) and potential translocation sites (South Central Florida).

Survey Instrument

The telephone survey instrument included 78 items measuring six main subject areas: behavioral intention to support recovery, management preferences, attitudes, risk perception, knowledge levels and demographics (see Appendix B for survey instrument). We employed a 5-point Likert scale (1= strongly disagree/strongly oppose to 5 = strongly agree/strongly support) with a central neutral category throughout most of the survey to avoid increasing measurement error by confusing respondents. The reliability of all scales was tested by calculating the Cronbach's coefficient alpha (Table 2-1). All scales, with the exception of the behavioral intention scale, had an alpha of greater than 0.70, indicating a high level of internal consistency. The lower alpha of the behavioral intention scale (0.50) indicates an acceptable level of internal consistency for a low item, multi-dimensional scale (Helms et al. 2006).

The behavioral intention scale included 3-items, with a score above 3 on a 5-point scale reflecting intention to act in support of recovery, and a score below 3 reflecting intention to act in opposition to recovery. Questions were adapted from Routhe et al. (2005), and included writing a letter to an elected official, paying a small additional tax in support of recovery, or voting for an official who favors development over panther recovery.

The panther management preferences scale included 6 items, with a higher mean reflecting greater overall support for recovery efforts. Respondents were asked to report their general level of support for or opposition to increasing the number of panthers in the wild in Florida, as well

as their opinion on translocation, protecting panther habitat, sensitivity level for removal of nuisance panthers, and the extent of protection which should be given to panthers. This suite of potential management interventions was selected according to two criteria: (1) relevance to the current panther recovery plan, and (2) relevance to a Florida resident.

The risk perception scale included 10 items, with a higher mean indicating greater perceived risk from panthers. The scale measured perceived risk panthers pose to pets, children and livestock, relative to other animals and to personal safety in specific situations (neighborhood versus natural area). Respondents were also asked whether or not they judged encounters with panthers to be increasing in frequency, and whether or not the risks from panthers were accepted voluntarily (Slovic 1987).

The attitude scale included 15 items, with a higher mean reflecting more positive attitudes toward panthers and recovery. The scale measured attitudes toward consequences of panther management and characteristics of panthers identified and evaluated both in the stakeholder interviews and open-ended questions included in a previous panther survey (Duda & Young 1995). Participants were asked to report their level of agreement or disagreement with fifteen positive and negative belief statements concerning panthers.

The knowledge index included 10 true-false statements about panther biology and human-panther interactions. Each question included in the index was shown to a panther biologist to ensure that there was only one correct answer. An additional question was included in the knowledge section asking that respondents select what they considered to be the primary reason that panthers were endangered. This question was not included in the knowledge index because more than one answer could arguably be considered at least partially correct. Reliability for the index was not evaluated because items were selected to measure the external concept of

“knowledge about panthers”, rather than because the individual items were assumed to be inter-related (Helms et al. 2006).

The media preference section included 6 items. Respondents were asked whether or not and from where they had recently seen or heard about panthers in the media, their opinion on the veracity and extent of media coverage of panthers, their preferred source for information about panthers (wildlife agencies; politicians; environmental groups; or sportsmen), and their primary source for general news (television; newspaper; radio; internet; or magazine).

The demographic section of the survey was made up of 17 items, including interest in wildlife, outdoor user demographics, belief that panthers lived in the respondent’s home county, race, ethnicity, level of education, income, gender, landownership, pet ownership, presence of children under 18 in the household, location of current and past residence, and length of Florida residence. Interest in wildlife was measured by an index of four activities that respondents could engage in: watching television, videos or movies about wildlife, reading about wildlife, and residential/nonresidential wildlife viewing. Respondents were asked whether they had engaged in any of these activities within the past 2 years, and were assigned a score based on their response. Higher scores reflected greater interest in wildlife. Location of current and past residence was measured with a 4-point bipolar scale ranging from city to rural farm. Intermediate responses included suburbs and rural non-farm.

Sampling Strategy and Survey Administration

Based on the U.S. Census Bureau’s designation, we classified all census tracts included in the study as either urban or rural. Urban designation is given to block groups with a density of 1,000 people or greater and block groups with a density of 500 or more people immediately adjacent to a block group with 1,000 people or more (U.S. Census Bureau 2007). We then used disproportionate stratification to allocate 200 completions to each of the 4 strata, to remain

within budget while ensuring with 0.95 probability that the margin of error would not exceed 0.07. We purchased simple random samples of listed telephone records from each of the four strata taken from a listed household database last updated January 29, 2007. A listed sample was chosen over random digit dialing (RDD) both for cost reasons and to avoid bleed over between urban and rural strata which might limit the generalizability of findings for each group.

The survey was reviewed by a panel of social scientists at the University of Florida, state and federal panther specialists and pre-tested on undergraduates at the University of Florida. In March 2007, trained interviewers with the University of Florida Bureau of Business and Economic Research administered the survey. Initial interviews were monitored and the first 150 completions were examined for problems in administration, but none were identified. Each survey took approximately 20 minutes to complete. Calls were made with computer-aided dialing during both weekdays and weekends, as well as in the evenings, to increase the likelihood of reaching currently employed individuals (Keeter et al. 2000). Respondents were called a total of 10 times unless a terminal disposition (i.e., hang up or adamant refusal) occurred before the tenth call, in which case substitution was employed. In order to ensure random selection of respondents within households, interviewers asked to speak with the current resident, 18 years or older, who had celebrated the most recent birthday (Gaziano 2005).

Potential Sources of Bias Resulting from Mode and Listed Sample: Nonrespondents in telephone surveys are likely to be poorer, less educated, African American, and rent rather than own homes (Assael & Keon 1982). Those who do not own telephones are, by necessity, excluded from the sampling frame of a telephone survey. Respondents are therefore likely to be wealthier than those without a telephone, meaning that affluent individuals tend to be overrepresented in telephone surveys (Cordell et al. 2002). Younger people, who tend to adopt

technology more quickly than older ones, are more likely to use cell phones exclusively and therefore not have a landline (Groves et al. 2004), meaning that older people are likely to be overrepresented in telephone surveys.

People who have definite opinions about a subject are more likely to participate in a survey about that topic. A study of acceptance capacity for pumas in Montana found that nonrespondents tended to be more ambivalent toward pumas than respondents (Riley & Decker 2000). As such, our sample may be biased toward those with greater interest in the issue, and more practiced opinions.

Listed samples exclude from the sampling frame people with unlisted telephone numbers, which is the primary justification for using the more costly practice of random digit dialing. A comparison of demographic and attitudinal results using a listed sample and RDD found that both methods underrepresented African Americans and younger people, but that the listed sample underrepresented them to a greater degree (R.W. Oldendick & D. N. Lambries, unpublished data, Differences in an RDD and list sample: an experimental comparison).

Data Analysis

We analyzed data using both SPSS (SPSS, Englewood Cliffs, New Jersey) and SAS statistical software (SAS Institute, 1998). Ordinal data from scales and indices measuring behavioral intentions, support for recovery, attitudes, risk perception, and knowledge was treated as interval level data (Agresti & Finlay 1997). We used 2-tailed t-tests to identify significant differences in mean scores between urban and rural pairs (Southwest Rural-Southwest Urban and South Central Rural-South Central Urban), as well as Southwest and South Central pairs (Southwest Urban-South Central Urban or Southwest Rural-South Central Rural). To isolate effects of living in an urban or rural setting, or living within or outside of primary panther habitat, we only compared one of the two strata characteristics at a time. The Pearson correlation

coefficient was used to measure strength and direction of postulated linkages between the components of the model, as well as between components of the model and demographic variables. Chi-squared statistics were used to test for differences in proportions between nominal data, including single 5-point Likert scale questions. We used multiple regression on all theoretical variables in the conceptual model (behavioral intention to support recovery, management preferences, attitudes, subjective norm, risk perception, and knowledge) with single simultaneous entry of all predictor variables to construct a model that best predicted intention to act in support of or opposition to panther recovery. Independent variables selected *a priori* included components of the conceptual model selected in keeping with the logic of its construction (i.e., behavioral intention was not included in the regression for attitude), as well as demographic variables identified in the literature. Effect size of each variable was calculated by summing the direct and indirect effects of each statistically significant ($p < 0.05$) variable in the regressions. Direct effects for a variable consisted of the standardized coefficient (β) from the regression with behavioral intention as the dependent variable. Using a path diagram, indirect effects were then calculated by multiplying the standardized coefficients for each link in each path which eventually led from the predictor variable to behavioral intentions, and adding the totals of all paths (Bryman & Cramer 1990).

Post-stratification weighting (Holt & Smith 1979) was used to combine the 4 strata and calculate means or proportions for the total sample. This type of weighting is used to adjust sample proportions to reflect population distributions (Zhang, 2000; Cordell et al. 2002). Weights were calculated using the actual population proportions for counties included in each of the four strata to ensure that each stratum was sampled at the same rate as its proportion of the population (U.S. Census Bureau 2007). Weights were adjusted to avoid artificially inflating the

sample size to control for the tendency of larger samples to show significance in even small departures of the sample mean from the value in the null hypothesis (Agresti & Finlay 1997). Using the weighted data, we divided the sample into groups based on their mean score on the behavioral intention and knowledge scales in order to explore their attitudes, knowledge, demographics and media preferences in greater detail with chi-squared and t-tests.

To explore differences in specific management preferences, attitudes, risk perception, knowledge and demographic variables, we divided the total weighted sample into 3 groups based on their score on the 3-item behavioral intention scale which ranged from 1 (unsupportive) to 5 (supportive) (Table 2.1). Those with scores greater than 3 were classified as “proponents”, those with scores of 3 as “undecided” and those with scores below 3 as “opponents”. These groups are based on an individual’s stated intention to act in support of or opposition to increasing the number of panthers in the wild through three hypothetical actions.

Mean scores for single 5-point Likert scale questions were collapsed into 3 levels (Agree/Support=3, Undecided=2, Disagree/Oppose=1) for this part of the analysis. A mean score of less than 2 indicated that a group tended to disagree with or oppose a supportive statement, and a mean score of greater than 2 indicated that a group tended to agree with or support the statement.

Missing data were excluded listwise for regression analyses and pairwise for all others. A “don’t know” option was given for nearly all questions. Prior to analysis, “don’t know” responses were grouped with “neither agree nor disagree” responses in the central neutral category of the 5-point Likert scale. For the knowledge scale, “don’t know” responses were counted as an incorrect answer, and given a score of “0.”

Table 2-1. Scale reliability evaluation.

Scales and question wording	Cronbach's alpha
Behavioral Intentions (PROBEHAVIOR)	0.50
<i>I would...</i>	
...write a letter to an elected official to support increasing the number of panthers in the wild.	
...pay a small additional amount of state tax to fund increasing the number of panthers in the wild.	
...vote for an elected official that favors development over panthers. ^a	
Panther Management Preferences (PROMANAGE)	0.73
Overall, do you support or oppose efforts to help the panther population in Florida by increasing the number of panthers in the wild?	
<i>If, in order to increase the number of panthers in the wild...</i>	
...panthers would have to be moved into your county...	
...it would be necessary to protect natural lands in your county...	
... to what extent would you support or oppose this action?	
Panthers should be removed from the wild anywhere they are found close to people's home. ^a	
Panthers should not be removed from the wild under any circumstances.	
<i>Please tell me which of the following three statements comes closest to your point of view. Panthers should...</i> ^a	
...be protected everywhere in Florida.	
...be protected ONLY within national parks and other nature reserves, NOT on private lands.	
...not be protected anywhere.	
Risk Perception from Panthers (HIGHRISK)	0.80
<i>I am concerned about the safety of...</i>	
...pets...	
...livestock...	
...children...	
...because panthers may live nearby.	
<i>I am comfortable...</i>	
...visiting natural areas... ^a	
... being outdoors in my neighborhood... ^a	
...where panthers may live nearby.	

Table 2-1. Continued.

Scales and question wording	Cronbach's alpha
<p><i>I am more concerned about being injured by a panther than...</i> ...being injured by a dog. ...being injured by an alligator. ...being bitten by a snake.</p>	
<p>Panther-human encounters are becoming more frequent.</p>	
<p>People can generally make choices about being exposed to the risks from panthers.^a</p>	
<p>Attitudes toward Panthers and Protection of Panthers (PROATTITUDE)</p>	0.84
<p><i>Positive aspects of panther protection...</i> ...it helps to save the natural lands where they live in Florida. ...although I never see Florida panthers in the wild, it is important to know that they exist in Florida. ...they are one of the world's most endangered animals. ...panthers help maintain deer and small animals in balance with their environment. ...panthers have a right to live wherever they are. ...our grandchildren and future generations should be able to see Florida panthers in the wild. ...panthers are beautiful animals. ...panthers are intelligent animals. ...it keeps a healthy environment.</p>	
<p><i>Negative aspects of panther protection...^a</i> ...it is a waste of money. ...it restricts access to public lands. ...maintaining panther populations in the wild is a threat to the economic prosperity of Florida. ...it restricts how private landowners can manage their land. ...panthers are vicious murderers. ...panthers compete with hunters for game animals such as deer.</p>	

^a Question was reverse-coded for inclusion in scale.

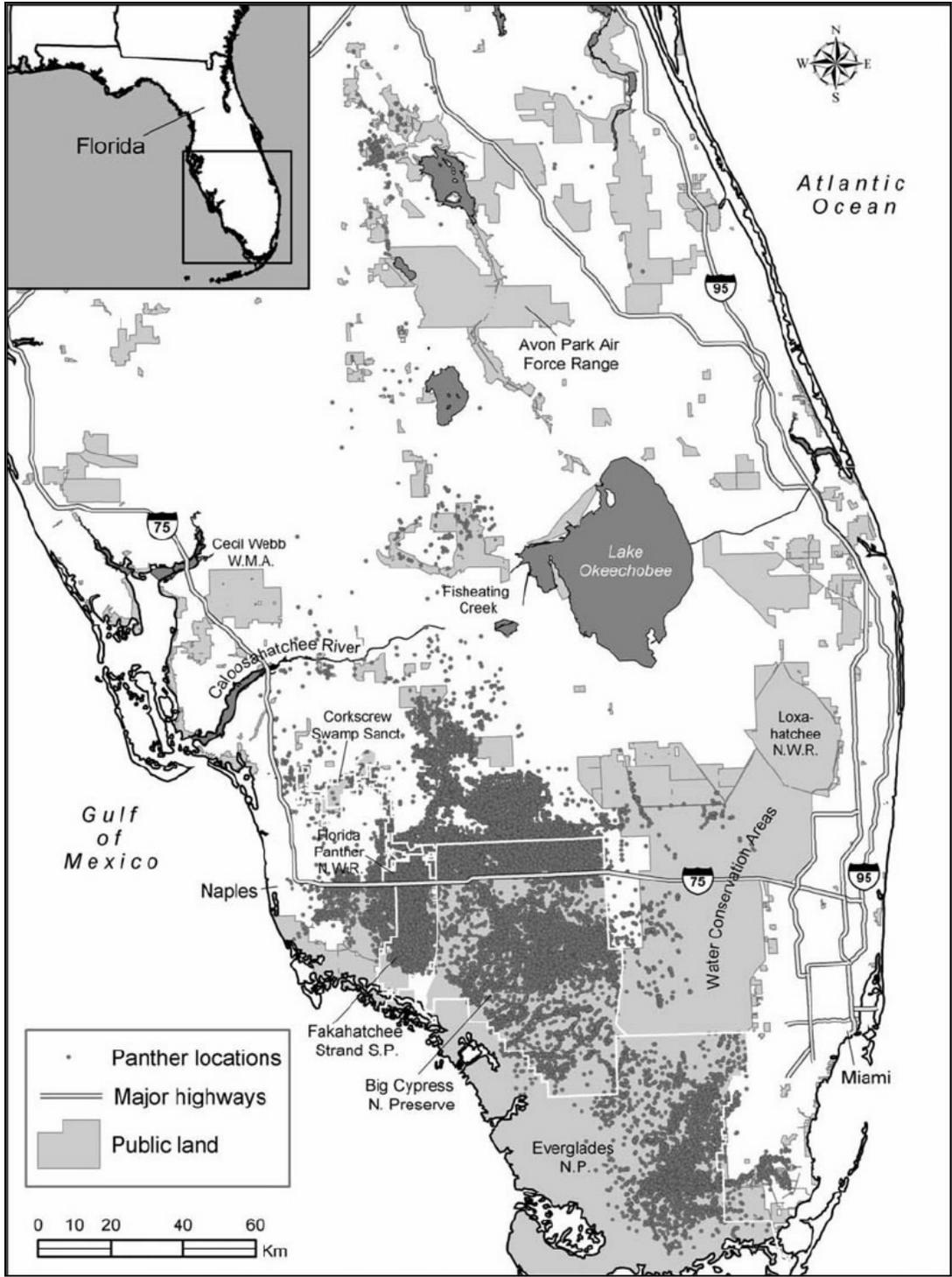


Figure 2-1. Distribution of telemetry location of panthers in south Florida, USA, 1991-2001 [Reprinted with permission from Thatcher, C. A., F. T. V. Manen, and J. D. Clark. 2006. Identifying Suitable Sites for Florida Panther Reintroduction. *Journal of Wildlife Management* 70:752-763. (Page 754, Figure 1)]

CHAPTER 3 RESULTS

Response Rate

To complete 802 surveys, 7,770 phone numbers were attempted. Of those attempted, 3,534 resulted in actual contact with an eligible respondent for a contact rate of 45%, and a cooperation rate of 23%. (The remaining numbers resulted in ineligible respondents, non-working numbers, language difficulties and other technical difficulties.) Cooperation rates in each of the four strata were within 3 percentage points of each other. Sample sizes within each of the 4 strata (n=200) ensured with 0.95 probability that the margin of error would not exceed 0.07.

Urban-Rural and Southwest-South Central Comparisons

Demographic Characteristics of the Sample

After post-stratification weighting, 19% owned no land; 59% owned less than 1 acre; 16% owned 1 to 5 acres; and 5% owned more than 6 acres (Table 3-1). Most respondents (62%) identified their current residence as suburban, followed by rural non-farm (23%), city (12%) and farm (1%). However, less than half of respondents (42%) reported growing up in the suburbs, followed by rural non-farm areas (26%), cities (18%) and farms (15%). Only 3% of the sample owned livestock. The mean length of Florida residence was 22 years, and the median age was 60 years. Only 19% of respondents lived in households with children, but half (51%) owned dogs or cats. The sample was highly educated, with 22% having attended graduate or professional school, 52% college, 24% high school, and only 3% elementary school. Only 9% of respondents were Latino, and only 7% reported being a race other than white. The majority of respondents (66%) reported a household income of over \$50,000 in 2006 before taxes. A minority (20%) earned less than \$30,000.

The median age of the sample may be higher than the actual population parameter because, as described previously, younger people tend to be underrepresented in telephone surveys – a situation likely exacerbated by the use of a listed sample which tends to oversample older people. However, according to the Consumer Confidence Index for March of 2007, a statewide survey of Florida residents also conducted by the Bureau of Economic Business and Research which uses RDD, the average age for respondents was 54 years, which is only 3 years lower than the 57 mean age found in this study (Bureau of Economic Business and Research, unpublished data). Also contributing to the high median age in this study is the fact that southern Florida has a high seasonal influx of part-year retirees. The top ten county destinations for temporary Florida residents, a much larger proportion of whom than permanent residents are 55 years or older, include 5 of the counties included in this study: Lee, Collier, Polk, Sarasota and Hillsborough. Furthermore, the rate of immigration for temporary residents is greatest from December to April (S.K. Smith & M. House, unpublished data, Snowbirds and other temporary residents: Florida 2004). Given these circumstances, the median age observed in this study is reasonable for southern Florida at the time of year that the survey was administered.

Statistically significant differences between urban-rural strata and/or Southwest-South Central strata were found in landownership, livestock ownership, duration of Florida residence, presence of children under 18 in the household, pet ownership, level of education, ethnicity, and income. Rural residents of Southwest and South Central Florida generally owned more land than their urban counterparts (Table 3-2). However, rural residents of South Central Florida also owned more land than rural residents of Southwest Florida (Table 3-1). Rural residents of South Central Florida were also more likely to own livestock than residents in either rural Southwest Florida or urban South Central Florida. Residents of South Central Florida had generally lived in

Florida longer than those in Southwest Florida. (The average difference was 7.69 between the rural strata and 5.23 years between the urban strata.) South Central residents were more likely than Southwest residents to have children under the age of 18 in the household. Rural residents in South Central were more likely to own pets than those in Southwest Florida, and rural residents in both locations were more likely to own pets than their urban counterparts. The level of education was higher for rural residents of Southwest Florida than for South Central Florida. The proportion of urban South Central residents who were Latino was twice that of rural South Central residents. A greater proportion of urban residents in Southwest Florida were white compared to urban residents of South Central Florida. Southwest Florida residents were generally wealthier than those in South Central Florida.

Behavioral Intention to Support Panther Recovery

In Southwest Florida, the mean score on the behavioral intention scale for the rural stratum was 3.37 (SD=0.85) and for the urban stratum was 3.32 (SD=0.83). In South Central Florida, the mean score for the rural stratum was 3.35 (SD=0.74) and for the urban stratum was 3.32 (SD=0.76). All 4 groups were moderately willing to act in support of panther recovery. There were no statistically significant differences either between Southwest and South Central pairs (Table 3-3), or between urban and rural pairs (Tables 3-4).

Fifty-two percent of the total sample was willing to write a letter to a political official in support of panther recovery, and 52% was willing to pay a small additional tax in support of panther recovery. Fifty-nine percent were not willing to vote for a political official who favored development over panther recovery. In each case, a small proportion of respondents (16%, 11% and 16% respectively) were uncertain about whether or not they would participate in any of these activities. The intention scale had low internal consistency, and respondents may have been

confused by the question which asked about intention to vote for a political official who favored development over panthers.

Statistically significant ($p \leq 0.05$) predictor variables in the regression model for behavioral intentions included management preferences, attitudes, and subjective norm (Table 3-5). The model explained 43% of the variance ($n = 473$, $p < 0.01$). Respondents who approved of management preferences targeting panther recovery, held positive attitudes toward panthers, and felt a generalized social pressure to support recovery were more likely to take action in support of panther recovery.

Management Preferences for Panthers

Mean scores on the panther management preferences scale were 3.67 (SD=0.74) for Southwest rural; 3.67 (SD=0.65) for Southwest urban; 3.74 (SD=0.64) for South Central rural; and 3.67 (SD=0.62) for South Central urban. All means reflected high levels of support for panther management practices which promote recovery. No differences were found between Southwest and South Central pairs (Table 3-3), or between urban and rural pairs (Tables 3-4). However, urban strata in Southwest and South Central Florida differed in preferences for the extent of panther protection ($\chi^2=7.99$, $p \leq 0.05$). Among urban residents of Southwest Florida, 56% felt that panthers should be protected everywhere, 40% felt they should be protected only on public lands, and 3% felt they should be protected nowhere. Among urban residents of South Central Florida, a larger proportion (68%) felt that they should be protected everywhere, a smaller proportion felt they should be protected on public lands only (27%), and only 5% felt that they should be protected nowhere.

A majority (71%) of the total sample supported efforts overall to help the panther population in Florida by increasing the number of panthers in the wild, while 19% were undecided and a small proportion (11%) opposed. A large proportion of respondents (64%) also

supported translocation into their county, and protection of natural lands in their county (78%). A minority of respondents opposed translocation (17%) and protection of natural lands (7%). Most respondents disagreed that panthers should be removed anywhere they were found close to people's homes (67%). Almost half (47%) of respondents agreed that panthers should not be removed from the wild under any circumstances. Regarding the extent to which panthers should be protected, most respondents concurred that panthers should be protected everywhere in Florida (66%), although 30% believed that panthers should only be protected on public lands. Only 4% felt that panthers should not be protected anywhere.

Statistically significant ($p \leq 0.05$) predictor variables in the regression model for panther management preferences included attitudes, risk perception, subjective norm, interest in wildlife, presence of children under 18 in the household, and age (Table 3-6). The model explained 51% of the variance in management preferences ($n = 477$, $p < 0.01$). Younger respondents without children under 18 in the household, who held positive attitudes toward panthers, perceived lower levels of risk from panthers, felt a generalized social pressure to support recovery and had greater interest in wildlife were more likely to prefer management actions to help panther populations recover. Conversely, older respondents with children in the household who held negative attitudes toward panthers, perceived a higher level of risk from panthers, did not feel social pressure to support recovery and were less interested in wildlife were less likely to support panther recovery.

Attitudes toward Panthers and Protection of Panthers

Mean scores on the attitude scale were 3.92 (SD=0.49) for Southwest rural; 3.83 (SD=0.51) for Southwest urban; 3.95 (SD=0.43) for South Central rural; and 3.90 (SD=0.49) for South Central urban. All means show that beliefs about panthers and the consequences of

protecting panthers are very positive, and did not differ between Southwest and South Central pairs (Table 3-3), or between urban and rural pairs (Table 3-4).

Most respondents (88%) in the total sample believed that protecting panthers was good because it helped to protect natural lands in Florida. Most respondents (90%) also agreed that although they may never see panthers in Florida, it is important to know that they exist. Most (85%) disagreed that protecting panthers was a waste of money. Solid majorities agreed that it is good or important to protect panthers because they are one of the world's most endangered animals (80%), they help maintain prey species in balance with their environment (79%), they have a right to live wherever they are (75%), future generations have a right to see them in Florida (92%), and because they are beautiful (94%) and intelligent (80%) animals. Although most respondents (80%) disagreed that panthers were a threat to the economic prosperity of Florida, similar proportions of respondents agreed (40%) and disagreed (38%) that panther protection restricts how private landowners can manage their land. Half of respondents (51%) disagreed that protecting panthers restricts access to public lands, while a quarter of respondents (26%) agreed. Equal proportions of respondents (40% each) agreed and disagreed that panthers compete with hunters for game animals such as deer, while 20% remained undecided.

Statistically significant ($p \leq 0.05$) predictor variables in the regression model for attitudes included risk perception, knowledge, interest in wildlife, whether or not a respondent hunted or fished, and age (Table 3-7). The model explained 39% of the variance in attitudes ($n = 495$, $p < 0.01$). Younger respondents who perceived less risk, had greater knowledge, did not participate in hunting or fishing were more likely to have positive attitudes about panthers and panther recovery.

Risk Perceptions about Panthers

Mean scores on the risk perception scale were 2.26 (SD=0.57) for Southwest rural; 2.37 (SD=0.47) for Southwest urban; 2.21 (SD=0.59) for South Central rural; and 2.30 (SD=0.55) for South Central urban. Perceived risk from panthers in all 4 strata was low, and means did not differ between Southwest and South Central pairs (Table 3-3), or between urban and rural pairs (Tables 3-4).

A majority of respondents (60%) in the total sample were not concerned about the safety of children, pets (63%), or livestock (62%) because panthers may live in the area. However, more respondents were concerned about the safety of children (33%) than either pets (23%) or livestock (23%). The majority of respondents reported being comfortable outdoors in either their neighborhood (76%) or natural areas (80%) although panthers may live nearby. More than 80% of respondents in each case were not more concerned about being injured by a panther than a dog, an alligator, or a snake. Forty-five percent of respondents felt that human-panther encounters were not becoming more frequent, 34% were undecided, and 21% felt that they were. Most respondents (82%) believed that people could make choices about being exposed to the risks from panthers.

Statistically significant ($p \leq 0.05$) predictor variables in the regression model for risk perception included knowledge, interest in wildlife, pet ownership, ethnicity and race (Table 3-8). The model explained 28% of the variance in risk perception ($n = 506$, $p < 0.01$). Those who knew less about panthers, participated in less wildlife-related activities, did not own pets, were nonwhite and Latino were likely to perceive greater risk from panthers.

Subjective Norm to Support Panther Recovery

Mean scores regarding perceived generalized social pressure for supporting recovery were 3.28 (SD=0.91) for Southwest rural; 3.33 (SD=0.90) for Southwest urban; 3.51 (SD=0.84) for

South Central rural; and 3.35 (SD=0.84) for South Central urban, reflecting a moderate perceived social pressure to support increasing the number of panthers in the wild. No differences were found between urban and rural pairs (Table 3-4), or between urban strata in Southwest and South Central locations (Table 3-3). However, between rural strata, perceived social pressure to support recovery was slightly greater in South Central Florida than Southwest Florida ($\chi^2=11.31$, $p<0.05$).

Slightly less than half of all respondents (45%) agreed with the statement “Most people who are important to me think I should support increasing the number of panthers in Florida.”, while a similar proportion of respondents (39%) was undecided, and 17% disagreed with the statement.

Statistically significant ($p \leq 0.05$) predictor variables in the regression model for subjective norm included risk perception, knowledge, interest in wildlife, participation in hunting or fishing, and race (Table 3-9). The model explained 21% of the variance in subjective norm ($n= 503$, $p < 0.01$). White respondents who perceived less risk, had greater knowledge about panthers, participated in more wildlife-related activities, and had not hunted or fished within the last 2 years were more likely to perceive social pressure to support panther recovery.

Knowledge about Panthers

Mean scores on the knowledge index were 5.45 (SD=2.08) for Southwest rural; 5.33 (SD=2.02) for Southwest urban; 5.35 (SD=2.16) for South Central rural; and 4.86 (SD=1.93) for South Central urban. Urban residents of Southwest Florida knew more about panthers than urban residents of South Central Florida ($\chi^2=2.39$, $p<0.05$), although rural residents in Southwest and South Central Florida did not differ (Table 3-3). In South Central Florida, rural residents knew more about panthers than did urban residents ($\chi^2=2.38$, $p<0.05$) (Table 3-4). No urban-rural

differences were found in Southwest Florida, however. Rural residents in Southwest Florida knew the most about panthers, and urban residents in South Central Florida knew the least.

The vast majority of respondents (93%) in the total sample knew that panthers still lived in Florida. A majority of respondents (65%) also believed that panthers lived in their home county. Only 32% of respondents knew that less than 100 panthers remained in Florida, and about half (53%) knew that the panther population did not number more than 1,000. Furthermore, 62% of respondents were aware that panthers are endangered. A majority of respondents (64%) did not know the correct weight of a male panther, and about half (51%) did not know that deer were a primary prey species of panthers. Most respondents (73%) knew that panthers were not only active during the day, and recognized that the terms panther and mountain lion referred to the same animal (60%). A very small minority (14%) was aware that there had never been attack on a human by a panther in Florida. When asked to identify the primary cause of panther endangerment, most respondents (66%) selected loss of habitat or natural lands, while the second largest proportion (15%) identified car accidents.

Statistically significant ($p \leq 0.05$) predictor variables in the regression model for knowledge included interest in wildlife, ethnicity, gender, and whether a respondent lived in Southwest or South Central Florida (Table 3-10). The model explained 19% of the variance in knowledge levels ($n = 575$, $p < 0.01$). Non-Latino, male residents of Southwest Florida who participated in more wildlife-related activities were likely to know more about panthers. Effect sizes for all predictive variables on behavioral intentions were calculated using standardized regression coefficients (β) from regression analyses of behavioral intentions, management preferences, attitudes, subjective norm, risk perception, and knowledge (Table 3-11).

Media Preferences

In Southwest Florida, a majority of respondents in both urban (61%) and rural strata (62%) had seen something about panthers in the news in the last six months, whereas in South Central Florida, fewer respondents in both urban (28%) and rural (29%) strata had seen panthers in the news. The differences were highly significant between both urban Southwest and South Central strata ($\chi^2=43.40$, $p<0.01$) and rural Southwest and South Central strata ($\chi^2=43.43$, $p<0.01$). Respondents who had seen panthers in the news were also asked where they had heard this information. Neither panther news source nor general news source differed between Southwest and South Central pairs (Table 3-12), or urban and rural pairs (Tables 3-13).

When asked whether media coverage of panthers was “not enough”, “adequate” or “too much”, a larger proportion of respondents in South Central Florida than Southwest Florida felt that there was not enough coverage of panthers in the press. More respondents in Southwest Florida than South Central Florida felt that media coverage was adequate (Figure 3-1). Differences were statistically significant between rural Southwest and South Central strata and urban Southwest and South Central strata. Within Southwest Florida, a greater proportion of rural than urban respondents felt that coverage was not enough.

Over 80% of respondents in each of the 4 strata believed that coverage was either “usually true” or “sometimes true”, with nearly half of respondents within each stratum selecting one of the two options. Similarly, no differences were found between Southwest and South Central pairs, or urban and rural pairs which was the best source for information about panthers: wildlife agencies, politicians, environmental groups or sportsmen. In all four strata, the majority of respondents (63-72%) felt that wildlife agencies were the best source, followed by environmental groups (21-28%) and sportsmen (5-8%). Very few respondents (0-2%) believed that politicians were the best source of information.

Approximately a third of the total sample (35%) had seen something about panthers in the news within the last sixth months. Of the respondents who had seen something about panthers, most read it in the newspaper (51%) or saw it on television (39%). The internet, radio, magazines and other sources were used by the remaining 10% of respondents. The majority of respondents (65%) felt that there was not enough coverage of panthers in the press, 34% felt that it was adequate, and a very small minority (1%) felt that there was too much. Just under half of all respondents (46%) felt that coverage in the press was usually true, with a similar proportion (44%) believing that it was sometimes true. Small minorities of respondents felt that coverage was rarely true (7%) or untrue (3%). Out of the choices given, the majority of respondents (70%) felt that wildlife agencies were the best source of information about panthers, followed by environmental groups (23%), sportsmen (6%), and politicians (1%). Most respondents (50%) preferred to get their general news from television, followed by the newspaper (29%), internet (13%), radio (6%) and magazines (2%).

Interest in Wildlife and Outdoor User Demographics

Mean scores for interest in wildlife were 2.95 (SD=1.05) for Southwest rural; 2.72 (SD=1.24) for Southwest urban; 2.94 (SD=1.07) for South Central rural; and 2.70 (SD=1.13) for South Central urban. Respondents in all strata tended to engage in at least 2 activities that demonstrated interest in wildlife. In South Central Florida, rural residents showed greater interest in wildlife than urban residents ($\chi^2=10.89$, $p<0.05$), and were more likely to engage in both consumptive ($\chi^2=4.38$, $p<0.05$) and non-consumptive ($\chi^2=6.34$, $p<0.05$) outdoor activities (Table 3-2).

The total sample mean score for interest in wildlife was 2.74, reflecting an overall moderate interest in wildlife. Most respondents (90%) watched television programs, videos or films about wildlife. A majority of respondents (77%) also read about wildlife. A slightly

smaller majority (69%) participated in residential wildlife viewing. However, a minority of respondents (38%) participated in nonresidential wildlife viewing.

Relationships between Factors Influencing Public Support

All correlations between individual factors influencing public support for panther recovery were significant at $p < 0.01$ (Table 3-14). Risk perception (greater risk perceived) was negatively correlated with all of the other response variables, although its strongest relationships were with attitudes and management preferences. Attitudes were positively correlated with behavioral intentions, management preferences and subjective norms. Management preferences were positively correlated with behavioral intentions. Knowledge was positively correlated with all of the factors except for risk perception with which it had a negative relationship, although the relationships were weak. The strength of the relationship between management preferences and behavioral intention ($r = 0.60$, $p < 0.01$), along with the results of the regression analysis for behavioral intentions (Table 3-5), suggests that this factor does have a place in a model predicting intention to support recovery. Attitudes and subjective norms had similar predictive power for support for recovery, but attitudes were relatively more important than subjective norm in predicting behavioral intentions.

These findings suggest that respondents who are more willing to act in support of recovery are more likely to favor recovery plan management practices, have more positive attitudes toward panthers and recovery, perceive a generalized social pressure to support recovery, perceive lower levels of risk from panthers, and have higher knowledge levels about panthers. Those who are more willing to act in opposition to panther recovery are more likely to oppose panther recovery efforts, have more negative attitudes toward panthers and panther recovery, perceive a generalized social pressure to oppose recovery, perceive greater risk from panthers, and know less about panthers.

Behavioral intentions had significant positive correlations with interest in wildlife, duration of Florida residence, and location of current residence (Table 3-15). Rural respondents showed greater intention to support management practices than their urban counterparts. Greater support for management practices was positively correlated with interest in wildlife, landownership, education level, and income. Risk perception was negatively correlated with interest in wildlife, landownership, location of current residence, education level, and income. Age was negatively correlated with all of the response variables except risk perception, with which it was positively correlated. As age increased, respondents tended to be less supportive of panther recovery, and perceived greater risk from panthers.

Generally, younger residents, rural residents, more educated residents, those more interested in wildlife, those who had lived in Florida for a longer time period, those who owned more land, and those with higher incomes tended to be more supportive of panther recovery and perceive less risk from panthers.

Proponent-Undecided-Opponent Comparisons

There is widespread support and little variation in level of support for panther recovery in both rural and urban residents of Southwest and South Central Florida. Results of these group comparisons and additional bivariate analysis suggest that those who intend to act in support of recovery (“proponents”), those who intend to oppose it (“opponents”), and those who remain uncertain about taking action (“undecideds”) may differ in their beliefs concerning the consequences of panther recovery, knowledge about panthers, and demographics. The following analyses compared specific beliefs, knowledge items and management preferences of these groups, defined according to their scores on the behavioral intention scale, to better understand the social context of panther recovery.

Management Preferences and Overall Support

Proponents, opponents and undecided respondents all generally supported efforts to increase the number of panthers in the wild (Table 3-16). Proponents tended to strongly support broader protection for panthers, not removing panthers from the wild under any circumstances, protecting natural lands, and translocating panthers into their county. Undecided respondents and opponents both disagreed that panthers should be removed from the wild anywhere they were found close to people's homes, but also both disagreed that they should not be removed from the wild under any circumstances. Although undecided respondents supported both translocation and protecting natural lands, a larger proportion of these respondents (35%) than proponents (6%) felt that panthers should only be protected on public lands. The largest proportion of opponents opposed translocation (46%), while smaller proportions supported it (31%) or remained undecided (23%). Slightly more than half of opponents supported protecting natural lands (52%), although a similar proportion (50%) felt that panthers should only be protected on public lands.

Attitudes toward Panthers and Recovery

All groups tended to feel positively about protecting panthers, although level of support was highest for proponents, lower for undecided respondents and lowest for opponents (Table 3-17). For example, all 3 groups tended to agree that protecting panthers was good because it protected natural lands where they lived in Florida, that it was important to know that they existed in Florida, that panthers had a right to live wherever they are, and that panthers were beautiful and intelligent animals. However, opponents tended to feel that protecting panthers restricted how private landowners can manage their land, whereas proponents and undecided respondents did not. Additionally, both undecided respondents and opponents tended to feel that panthers competed with hunters for game animals such as deer. None of the groups tended to feel

that protecting panthers was a waste of money, restricted access to public lands, threatened the economic prosperity of Florida, or that panthers were vicious murderers.

Knowledge about Panthers

Proponents generally knew the most about panthers, followed by undecided respondents, and then by opponents (Table 3-18). A majority of all 3 groups identified habitat loss as the primary cause of panther endangerment, and knew that panthers were not only active during the day and that they were endangered. Most respondents in all 3 groups knew that panthers still lived in Florida, although only half of proponents and smaller proportions of undecided respondents and opponents were aware that less than 100 panthers remain. A majority of proponents and just under half of undecided respondents and opponents, however, knew that panther populations do not currently number more than 1000. Over half of all 3 groups were aware that panthers and mountain lions were the same animal. The questions with the lowest proportions of correct answers for all 3 groups asked whether or not there had ever been a panther attack on a human in Florida, the weight of a male panther, and how to behave if approached by a panther.

Media Preferences

Undecided respondents were less likely than either proponents or opponents to report having seen anything about panthers in the news within the last 6 months, although in all 3 groups less than half of respondents had recently seen news about panthers in the press (Table 3-19). The sources for this news were similarly distributed for the groups, which generally ranked newspapers as the most prominent source, followed by television. A majority of proponents and undecided respondents were interested in increased media coverage of panthers, as were approximately half of opponents. Opponents and undecided respondents were more likely than proponents to feel that current coverage was adequate. Proponents and undecided respondents

were evenly divided between believing that news about panthers was usually true and sometimes true, whereas the majority of opponents believed that news was sometimes true. The largest proportion of respondents in all 3 groups considered wildlife agencies the best source of information about panthers, followed by environmental groups and sportsmen. Television was the primary news source for the largest proportion of respondents in all 3 groups, followed by newspaper, internet, radio and finally magazines. However, a larger proportion of undecided respondents than either proponents or opponents watched television.

Interest in Wildlife and Demographic Variables

Proponents engaged in more wildlife-related activities than either undecided respondents or opponents, and were more likely to own pets (Table 3-20). Approximately a third of all 3 groups had hunted or fished within the last 2 years, but more proponents had gone hiking or camping than either undecided respondents or opponents. The majority of respondents in all 3 groups owned less than 1 acre of land, but a larger proportion of opponents than either undecided respondents or proponents owned none. More than 60% of respondents in all 3 groups reported living in the suburbs. Proponents had generally lived in Florida longer than either undecided respondents or opponents, opponents tended to be older than respondents from the other 2 groups. Although the vast majority of all 3 groups were white, opponents were slightly more likely to be white than either proponents or undecided respondents. Among the 3 groups, undecided respondents included the highest proportion of Latinos (12%), followed by proponents (8%) and then opponents (4%), but only the difference between opponents and undecided respondents was statistically significant. A greater proportion of opponents were from Southwest Florida than either undecideds or proponents, but only the difference between opponents and undecided respondents was statistically significant.

Table 3-1. Means and comparisons of demographic variables between southwest and south central Florida strata.

Variable	Total	Rural					Urban				
	Sample ^a	Southwest ^b	South Central ^c	Group comparisons			Southwest ^b	South Central ^c	Group comparisons		
	Mean (SD)	Mean (SD)	Mean (SD)	χ^2	t-value	p	Mean (SD)	Mean (SD)	χ^2	t-value	p
Aware of panthers in county ⁱ	0.65 (0.48)	0.93 (0.26)	0.72 (0.45)	28.88	---	0.00	0.92 (0.27)	0.54 (0.50)	66.60	---	0.00
Interest in wildlife ^d	2.74 (1.14)	2.95 (1.05)	2.94 (1.07)	4.02	---	0.40	2.72 (1.24)	2.70 (1.13)	3.36	---	0.50
Hunt or Fish	0.32 (0.47)	0.36 (0.48)	0.40 (0.49)	0.62	---	0.43	0.35 (0.48)	0.30 (0.46)	1.14	---	0.29
Hike or camp	0.35 (0.48)	0.44 (0.50)	0.45 (0.50)	0.13	---	0.72	0.35 (0.48)	0.33 (0.47)	0.10	---	0.75
Park use	0.80 (0.40)	0.75 (0.44)	0.84 (0.37)	2.69	---	0.10	0.84 (0.37)	0.84 (0.37)	0.77	---	0.38
Landownership											
None	0.19 (0.39)	0.14 (0.35)	0.18 (0.38)	1.08	---	0.30	0.26 (0.44)	0.18 (0.38)	3.92	---	0.05
Less than 1 acre ^{g,i}	0.59 (0.49)	0.57 (0.50)	0.38 (0.49)	14.91	---	0.00	0.54 (0.50)	0.65 (0.48)	5.29	---	0.02
1 to 5 acres	0.16 (0.37)	0.21 (0.41)	0.30 (0.46)	3.98	---	0.05	0.15 (0.36)	0.14 (0.35)	0.03	---	0.87
6 to 20 acres	0.03 (0.18)	0.06 (0.23)	0.11 (0.31)	3.24	---	0.07	0.03 (0.17)	0.02 (0.14)	0.42	---	0.52
More than 20 acres	0.02 (0.13)	0.03 (0.16)	0.05 (0.21)	1.12	---	0.29	0.03 (0.16)	0.01 (0.10)	1.32	---	0.25
Livestock ownership ^g	0.03 (0.17)	0.06 (0.23)	0.11 (0.32)	4.50	---	0.03	0.04 (0.18)	0.02 (0.12)	1.64	---	0.20

Table 3-1. Continued

Variable	Total	Rural					Urban				
	Sample ^a	Southwest ^b	South Central ^c	Group comparisons			Southwest ^b	South Central ^c	Group comparisons		
	Mean (SD)	Mean (SD)	Mean (SD)	χ^2	t-value	<i>p</i>	Mean (SD)	Mean (SD)	χ^2	t-value	<i>p</i>
Current residence											
City	0.12 (0.33)	0.02 (0.14)	0.02 (0.14)	0.00	---	0.97	0.17 (0.38)	0.13 (0.34)	1.25	---	0.26
Suburb ^h	0.64 (0.48)	0.44 (0.50)	0.30 (0.46)	8.46	---	0.00	0.71 (0.45)	0.69 (0.46)	0.23	---	0.63
Nonfarm ^g	0.23 (0.42)	0.51 (0.50)	0.64 (0.48)	6.03	---	0.01	0.11 (0.32)	0.17 (0.38)	3.07	---	0.08
Farm	0.01 (0.11)	0.03 (0.17)	0.05 (0.22)	0.94	---	0.33	0.01 (0.07)	0.01 (0.07)	0.00	---	01.00
Past residence											
City	0.18 (0.38)	0.14 (0.34)	0.18 (0.38)	1.32	---	0.25	0.19 (0.39)	0.17 (0.38)	0.17	---	0.68
Suburb	0.42 (0.49)	0.40 (0.49)	0.36 (0.48)	0.56	---	0.45	0.38 (0.49)	0.44 (0.49)	1.18	---	0.28
Nonfarm	0.26 (0.44)	0.33 (0.47)	0.26 (0.44)	2.19	---	0.14	0.32 (0.47)	0.23 (0.42)	3.79	---	0.05
Farm	0.15 (0.36)	0.14 (0.35)	0.20 (0.40)	2.71	---	0.10	0.11 (0.31)	0.16 (0.37)	2.16	---	0.14
Duration of FL residence (years) ⁱ	22.40 (17.94)	17.83 (16.50)	25.52 (18.27)	---	-4.39	0.00	18.05 (14.89)	23.28 (18.52)	---	-3.09	0.00
Children under 18 in household ^h	0.19 (0.40)	0.17 (0.37)	0.28 (0.45)	7.21	---	0.01	0.11 (0.31)	0.21 (0.40)	7.64	---	0.01
Pet ownership ^g	0.51 (0.50)	0.54 (0.50)	0.65 (0.48)	5.18	---	0.02	0.42 (0.50)	0.51 (0.50)	3.26	---	0.07

Table 3-1. Continued.

Variable	Total Sample ^a	Rural					Urban				
	Mean (SD)	Southwest ^b	South Central ^c	χ^2	Group comparisons		Southwest ^b	South Central ^c	χ^2	Group comparisons	
		Mean (SD)	Mean (SD)		Mean (SD)	t-value	p	Mean (SD)		Mean (SD)	t-value
Education level ^e	2.93 (0.74)	2.97 (0.72)	2.78 (0.67)	12.92	---	0.01	2.96 (0.74)	2.90 (0.79)	3.97	---	0.27
Ethnicity (% Latino)	0.09 (0.29)	0.06 (0.23)	0.05 (0.22)	0.04	---	0.84	0.07 (0.26)	0.11 (0.31)	1.46	---	0.23
Race (% white)	0.93 (0.26)	0.95 (0.22)	0.95 (0.21)	0.067	---	0.80	0.98 (0.15)	0.90 (0.29)	9.15	---	0.00
Age	57.19 (16.48)	57.69 (16.33)	55.61 (17.89)	---	1.19	0.23	59.42 (17.42)	56.80 (15.94)	---	1.54	0.13
Income (annual) ^f	5.87 (2.46)	6.57 (2.54)	5.63 (2.40)	16.85	---	0.05	6.49 (2.67)	5.72 (2.39)	17.16	---	0.05
Gender (% male)	0.39 (0.49)	0.44 (0.50)	0.40 (0.49)	0.42	---	0.52	0.46 (0.50)	0.37 (0.48)	3.11	---	0.08

^a n=802. Means calculated using post-stratification weights. ^b n=200. ^c n=201.

^d 'Interest in wildlife' was measured by four questions about wildlife-related activities. The range of responses was 0/4, with a higher response reflecting greater interest in wildlife.

^e Education levels: 0=None, 1=Elementary school, 2=High school, 3=College, 4=Graduate or Professional school.

^f Income levels: 1) Less than \$10,000; 2) \$10-\$19,000; 3) \$20-29,000; 4) \$30-\$39,000; 5) \$40-49,000; 6) \$50-\$59,000; 7) \$60-\$79,000; 8) \$80-\$99,000; 9) \$100-\$150,000; 10) Over \$150,000.

^g Difference between one or more strata pairs is significant at $p \leq 0.05$.

^h Difference between one or more strata pairs is significant at $p \leq 0.01$.

ⁱ Difference between one or more strata pairs is significant at $p \leq 0.001$.

Table 3-2. Means and comparisons of demographic variables between rural and urban Florida strata.

Variable	Total Sample ^a	Southwest ^b					South Central ^c				
	Mean (SD)	Rural Mean (SD)	Urban Mean (SD)	χ^2	Group comparisons t-value p-value		Rural Mean (SD)	Urban Mean (SD)	χ^2	Group comparisons t-value p-value	
Aware of panthers in county ⁱ	0.65 (0.48)	0.93 (0.26)	0.92 (0.27)	0.07	---	0.80	0.72 (0.45)	0.54 (0.50)	11.82	---	0.00
Interest in wildlife ^{dh}	2.74 (1.14)	2.95 (1.05)	2.72 (1.24)	7.21	---	0.13	2.94 (1.07)	2.70 (1.13)	10.89	---	0.03
Hunt or Fish ^g	0.32 (0.47)	0.36 (0.48)	0.35 (0.48)	0.06	---	0.81	0.40 (0.49)	0.30 (0.46)	4.38	---	0.04
Hike or camp	0.35 (0.48)	0.44 (0.50)	0.35 (0.48)	3.41	---	0.07	0.45 (0.50)	0.33 (0.47)	6.34	---	0.01
Park use	0.80 (0.40)	0.75 (0.44)	0.84 (0.37)	2.41	---	0.12	0.84 (0.37)	0.84 (0.37)	0.84	---	0.36
Landownership											
None	0.19 (0.39)	0.14 (0.35)	0.26 (0.44)	9.37	---	0.00	0.18 (0.38)	0.18 (0.38)	0.00	---	0.94
Less than 1 acre	0.59 (0.49)	0.57 (0.50)	0.54 (0.50)	0.57	---	0.45	0.38 (0.49)	0.65 (0.48)	28.91	---	0.00
1 to 5 acres	0.16 (0.37)	0.21 (0.41)	0.15 (0.36)	2.43	---	0.12	0.30 (0.46)	0.14 (0.35)	13.55	---	0.00
6 to 20 acres	0.03 (0.18)	0.06 (0.23)	0.03 (0.17)	1.51	---	0.22	0.11 (0.31)	0.02 (0.14)	12.06	---	0.00
More than 20 acres	0.02 (0.13)	0.03 (0.16)	0.03 (0.16)	0.00	---	0.99	0.05 (0.21)	0.01 (0.10)	4.47	---	0.03
Livestock	0.03 (0.17)	0.06 (0.23)	0.04 (0.18)	0.95	---	0.33	0.11 (0.32)	0.02 (0.12)	16.35	---	0.00

Table 3-2. Continued

Variable	Total Sample ^a	Southwest ^b					South Central ^c				
	Mean (SD)	Rural Mean (SD)	Urban Mean (SD)	χ^2	Group comparisons t-value p-value		Rural Mean (SD)	Urban Mean (SD)	χ^2	Group comparisons t-value p-value	
Current residence											
City	0.12 (0.33)	0.02 (0.14)	0.17 (0.38)	24.94	---	0.00	0.02 (0.14)	0.13 (0.34)	16.99	---	0.00
Suburb	0.64 (0.48)	0.44 (0.50)	0.71 (0.45)	31.01	---	0.00	0.30 (0.46)	0.69 (0.46)	62.36	---	0.00
Nonfarm	0.23 (0.42)	0.51 (0.50)	0.11 (0.32)	73.07	---	0.000	0.64 (0.48)	0.17 (0.38)	86.77	---	0.00
Farm	0.01 (0.11)	0.03 (0.17)	0.01 (0.07)	3.66	---	0.06	0.05 (0.22)	0.01 (0.07)	7.34	---	0.01
Past residence											
City	0.18 (0.38)	0.14 (0.34)	0.19 (0.39)	2.05	---	0.15	0.18 (0.38)	0.17 (0.38)	0.02	---	0.89
Suburb	0.42 (0.49)	0.40 (0.49)	0.38 (0.49)	0.09	---	0.77	0.36 (0.48)	0.44 (0.49)	2.38	---	0.12
Nonfarm	0.26 (0.44)	0.33 (0.47)	0.32 (0.47)	0.01	---	0.91	0.26 (0.44)	0.23 (0.42)	0.34	---	0.56
Farm	0.15 (0.36)	0.14 (0.35)	0.11 (0.31)	1.02	---	0.31	0.20 (0.40)	0.16 (0.37)	1.14	---	0.24
Duration of FL residence (years)	22.40 (17.94)	17.83 (16.50)	18.05 (14.89)	---	-0.14	0.89	25.52 (18.27)	23.28 (18.52)	---	1.21	0.23
Children under 18 in household	0.19 (0.40)	0.17 (0.37)	0.11 (0.31)	3.23	---	0.07	0.28 (0.45)	0.21 (0.40)	2.96	---	0.09
Pet ownership	0.51 (0.50)	0.54 (0.50)	0.42 (0.50)	5.30	---	0.02	0.65 (0.48)	0.51 (0.50)	7.70	---	0.01

Table 3-2. Continued.

Variable	Total Sample ^a	Southwest ^b					South Central ^c				
	Mean (SD)	Rural Mean (SD)	Urban Mean (SD)	χ^2	Group comparisons t-value p-value		Rural Mean (SD)	Urban Mean (SD)	χ^2	Group comparisons t-value p-value	
Education level ^e	2.93 (0.74)	2.97 (0.72)	2.96 (0.74)	10.44	---	0.02	2.78 (0.67)	2.90 (0.79)	11.10	---	0.01
Ethnicity (% Latino)	0.09 (0.29)	0.06 (0.23)	0.07 (0.26)	0.42	---	0.52	0.05 (0.22)	0.11 (0.31)	4.11	---	0.04
Race (% white)	0.93 (0.26)	0.95 (0.22)	0.98 (0.15)	2.45	---	0.12	0.95 (0.21)	0.90 (0.29)	3.49	---	0.06
Age	57.19 (16.48)	57.69 (16.33)	59.42 (17.42)	---	-0.14	0.89	55.61 (17.89)	56.80 (15.94)	---	-0.70	0.49
Income (annual) ^f	5.87 (2.46)	6.57 (2.54)	6.49 (2.67)	3.75	---	0.93	5.63 (2.40)	5.72 (2.39)	6.92	---	0.65
Gender (% male)	0.39 (0.49)	0.44 (0.50)	0.46 (0.50)	0.62	---	0.25	0.40 (0.49)	0.37 (0.48)	0.38	---	0.54

^a n=802. Weighted means used for total sample. ^b n=200. ^c n=201. ^d Range: 0/4. ^e Education levels: 0=None, 1=Elementary school, 2=High school, 3=College, 4=Graduate or Professional school. ^f Income levels: 1) Less than \$10,000; 2) \$10-\$19,000; 3) \$20-29,000; 4) \$30-\$39,000; 5) \$40-49,000; 6) \$50-\$59,000; 7) \$60-\$79,000; 8) \$80-\$99,000; 9) \$100-\$150,000; 10) Over \$150,000.

^g Difference between one or more strata pairs is significant at $p \leq 0.05$.

^h Difference between one or more strata pairs is significant at $p \leq 0.01$.

ⁱ Difference between one or more strata pairs is significant at $p \leq 0.001$.

Table 3-3. Means and comparisons for response variables between southwest and south central Florida strata.

Variable ^d	Range	Total Sample ^a	Rural				Urban			
			Southwest ^b	South Central ^c	Group Comparisons		Southwest ^b	South Central ^c	Group comparisons	
		Mean (SD)	Mean (SD)	Mean (SD)	test statistic	<i>p</i>	Mean (SD)	Mean (SD)	test statistic	<i>p</i>
Behavioral intentions	1-5	3.33 (0.78)	3.37 (0.85)	3.35 (0.74)	<i>t</i> = -0.30	0.76	3.32 (0.83)	3.32 (0.76)	<i>t</i> = 0.06	0.95
Management preferences	1-5	3.43 (0.18)	3.67 (0.74)	3.74 (0.64)	<i>t</i> = 0.96	0.34	3.67 (0.65)	3.67 (0.62)	<i>t</i> = 0.040	0.97
Risk perception	1-5	2.30 (0.20)	2.26 (0.57)	2.21 (0.47)	<i>t</i> = 1.00	0.32	2.37 (0.58)	2.30 (0.55)	<i>t</i> = 1.13	0.26
Attitudes	1-5	3.89 (0.49)	3.92 (0.49)	3.95 (0.43)	<i>t</i> = -0.55	0.58	3.83 (0.51)	3.90 (0.49)	<i>t</i> = -1.29	0.20
Social norm	1-5	3.36 (0.88)	3.28 (0.91)	3.51 (0.84)	$\chi^2 = 11.31$	0.02	3.33 (0.90)	3.70 (0.82)	$\chi^2 = 5.14$	0.27
Knowledge	0-10	5.02 (1.99)	5.45 (2.08)	5.35 (2.16)	<i>t</i> = 0.49	0.63	5.33 (2.02)	4.86 (1.93)	<i>t</i> = 2.39	0.02

^a n=802. Means calculated using post-stratification weights. ^b n=200. ^c n=201. ^d Higher mean scores reflect greater intention to act in support of recovery, greater support for management practices, higher perceived risk from panthers, more positive attitudes toward panthers and recovery, greater perceived social pressure to support recovery, and higher knowledge levels about panthers, respectively.

Table 3-4. Means and comparisons for response variables between rural and urban strata.

Variable ^d	Range	Total Sample ^a	Southwest ^b				South Central ^c			
			Rural	Urban	Group Comparisons		Rural	Urban	Group comparisons	
		Mean (SD)	Mean (SD)	Mean (SD)	test statistic	<i>p</i>	Mean (SD)	Mean (SD)	test statistic	<i>p</i>
Behavioral intentions	1-5	3.33 (0.78)	3.37 (0.85)	3.32 (0.83)	<i>t</i> = -0.61	0.55	3.35 (0.74)	3.32 (0.76)	<i>t</i> = -0.29	0.77
Management preferences	1-5	3.43 (0.18)	3.67 (0.74)	3.67 (0.65)	<i>t</i> = -0.02	0.98	3.74 (0.64)	3.67 (0.62)	<i>t</i> = -1.03	0.30
Risk perception	1-5	2.30 (0.20)	2.26 (0.57)	2.37 (0.58)	<i>t</i> = -1.77	0.08	2.21 (0.47)	2.30 (0.55)	<i>t</i> = -1.75	0.08
Attitudes	1-5	3.89 (0.49)	3.92 (0.49)	3.83 (0.51)	<i>t</i> = 1.72	0.09	3.95 (0.43)	3.90 (0.49)	<i>t</i> = 1.03	0.31
Social norm	1-5	3.36 (0.88)	3.28 (0.91)	3.33 (0.90)	χ^2 = 4.92	0.30	3.51 (0.84)	3.70 (0.82)	χ^2 = 4.66	0.32
Knowledge	0-10	5.02 (1.99)	5.45 (2.08)	5.33 (2.02)	<i>t</i> = 0.58	0.56	5.35 (2.16)	4.86 (1.93)	<i>t</i> = 2.38	0.02

^a n=802. Means calculated using post-stratification weights. ^b n=200. ^c n=201. ^d Higher mean scores reflect greater intention to act in support of recovery, greater support for management practices, higher perceived risk from panthers, more positive attitudes toward panthers and recovery, greater perceived social pressure to support recovery, and higher knowledge levels about panthers.

Table 3-5. Regression model for prediction of behavioral intention to support panther recovery.

Variable (R ² =0.44, p<0.01, n=473)	B	SE B	β	p-value
Panther management preferences ^b	0.32	0.07	0.25	<0.01
Attitudes toward panthers and recovery ^b	0.59	0.09	0.33	<0.01
Risk perception	-0.02	0.07	-0.01	0.80
Knowledge about panthers	0.03	0.02	0.08	0.06
Subjective norm for supporting recovery ^b	0.12	0.04	0.13	0.00
Interest in wildlife	0.04	0.03	0.05	0.26
Hunt or fish	0.03	0.07	0.02	0.70
Hike or camp	0.01	0.07	0.01	0.90
Believe that panthers live in county	-0.01	0.08	-0.01	0.86
Landownership	-0.07	0.04	-0.07	0.09
Livestock ownership	0.06	0.13	0.02	0.68
Current residence	0.06	0.06	0.05	0.31
Past residence	-0.02	0.03	-0.02	0.57
Duration of Florida residence	0.00	0.00	0.07	0.07
Children under 18 in household	-0.13	0.08	-0.07	0.10
Pet ownership (dogs or cats)	-0.01	0.06	-0.01	0.88
Education	0.00	0.01	0.01	0.79
Ethnicity (1=Latino, 0=non-Latino)	0.07	0.13	0.02	0.59
Race (1=white, 0=nonwhite)	-0.09	0.13	-0.03	0.48
Age	0.00	0.00	0.01	0.78
Income	-0.01	0.01	-0.02	0.72
Gender (1=male, 0=female)	-0.06	0.06	-0.04	0.33
Southwest/South Central (1=Southwest, 0=South Central)	0.10	0.06	0.06	0.13
Rural/Urban (1=rural, 0=urban)	-0.03	0.07	-0.02	0.67

^a Significant at p≤0.05. ^b Significant at p≤0.01.

Table 3-6. Regression model for prediction of panther management preferences.

Variable (R ² =0.53, p<0.01, n=477)	B	SE B	β	p-value
Attitudes toward panthers and recovery ^b	0.38	0.06	0.29	<0.01
Risk perception ^b	-0.28	0.05	-0.25	<0.01
Knowledge about panthers	0.00	0.01	0.01	0.72
Subjective norm for supporting recovery ^b	0.20	0.03	0.29	<0.01
Interest in wildlife ^a	0.05	0.02	0.08	0.05
Hunt or fish	-0.02	0.05	-0.02	0.61
Hike or camp	0.06	0.05	0.05	0.23
Believe that panthers live in county	0.03	0.05	0.02	0.62
Landownership	-0.05	0.03	0.07	-0.07
Livestock ownership	-0.14	0.09	0.06	0.14
Current residence	-0.01	0.04	-0.01	0.78
Past residence	-0.02	0.02	-0.03	0.44
Duration of Florida residence	0.00	0.00	0.06	0.09
Children under 18 in household ^a	-0.12	0.06	-0.08	0.03
Pet ownership (dogs or cats)	-0.00	0.05	-0.01	0.98
Education	-0.00	0.01	-0.01	0.84
Ethnicity (1=Latino, 0=non-Latino)	0.02	0.09	0.01	0.81
Race (1=white, 0=nonwhite)	0.08	0.09	0.03	0.41
Age ^b	-0.01	0.00	-0.15	0.00
Income	-0.01	0.01	-0.03	0.49
Gender (1=male, 0=female)	0.01	0.04	0.00	0.92
Southwest/South Central (1=Southwest, 0=South Central)	0.02	0.05	0.01	0.72
Rural/Urban (1=rural, 0=urban)	-0.01	0.05	-0.01	0.77

^a Significant at p≤0.05. ^b Significant at p≤0.01.

Table 3-7. Regression model for prediction of attitudes toward panthers and recovery.

Variable (R ² =0.39, p<0.01, n=495)	B	SE B	β	p-value
Risk perception ^b	-0.38	0.04	-0.43	<0.01
Knowledge about panthers ^a	0.02	0.01	0.10	0.01
Interest in wildlife ^b	0.01	0.02	0.23	<0.01
Hunt or fish ^a	-0.10	0.04	-0.10	0.02
Hike or camp	-0.01	0.04	-0.01	0.86
Believe that panthers live in home county	-0.03	0.05	-0.02	0.58
Landownership	-0.00	0.02	-0.01	0.87
Livestock ownership	-0.14	0.08	-0.07	0.09
Current residence	0.05	0.03	0.06	0.16
Past residence	0.00	0.02	0.00	0.99
Duration of Florida residence	-0.00	0.00	-0.02	0.58
Children under 18 in household	-0.05	0.05	-0.04	0.32
Pet ownership (dogs or cats)	0.05	0.04	0.05	0.23
Education	0.00	0.01	0.02	0.71
Ethnicity (1=Latino, 0=non-Latino)	-0.08	0.08	-0.04	0.29
Race (1=white, 0=nonwhite)	-0.07	0.08	-0.04	0.36
Age ^b	-0.00	0.00	-0.13	0.01
Income	-0.01	0.01	-0.07	0.10
Gender (1=male, 0=female)	-0.06	0.04	-0.06	0.12
Southwest/South Central (1=Southwest, 0=South Central)	-0.03	0.04	-0.03	0.43
Rural/Urban (1=rural, 0=urban)	-0.04	0.04	-0.04	0.38

^a Significant at p≤0.05. ^b Significant at p≤0.01.

Table 3-8. Regression model for prediction of risk perception.

Variable (R ² =0.28, p<0.01, n=506)	B	SE B	β	p-value
Knowledge about panthers ^b	-0.05	0.01	-0.19	<0.01
Interest in wildlife ^b	-0.10	0.02	-0.20	<0.01
Hunt or fish	0.06	0.05	0.05	0.25
Hike or camp	-0.06	0.05	-0.06	0.22
Believe that panthers live in county	-0.08	0.06	-0.06	0.16
Landownership	-0.03	0.03	-0.05	0.31
Livestock ownership	0.16	0.10	0.07	0.09
Current residence	-0.03	0.04	-0.04	0.44
Past residence	-0.02	0.02	-0.03	0.47
Duration of Florida residence	-0.00	0.00	-0.02	0.58
Children under 18 in household	-0.01	0.06	-0.01	0.83
Pet ownership (dogs or cats) ^b	-0.14	0.05	-0.13	0.00
Education	-0.01	0.01	-0.03	0.44
Ethnicity (1=Latino, 0=non-Latino) ^b	0.34	0.10	0.15	0.00
Race (1=white, 0=nonwhite) ^b	-0.27	0.09	-0.12	0.00
Age	0.00	0.00	0.08	0.11
Income	-0.02	0.01	-0.08	0.07
Gender (1=male, 0=female)	0.02	0.05	0.02	0.66
Southwest/South Central	0.09	0.05	0.08	0.07
Rural/Urban (1=rural, 0=urban)	-0.01	0.05	-0.01	0.85

^a Significant at p≤0.05. ^b Significant at p≤0.01.

Table 3-9. Regression model for prediction of subjective norm.

Variable (R ² =0.21, p<0.01, n=503)	B	SE B	β	p-value
Risk perception ^b	-0.40	0.08	-0.24	<0.01
Knowledge about panthers ^a	0.05	0.02	0.12	0.02
Interest in wildlife ^b	0.15	0.04	0.18	0.00
Hunt or fish ^b	-0.23	0.08	-0.13	0.01
Hike or camp	0.13	0.09	0.07	0.13
Believe that panthers live in home county	0.01	0.10	0.01	0.92
Landownership	0.06	0.05	0.06	0.24
Livestock ownership	0.01	0.17	0.00	0.95
Current residence	0.44	0.07	0.03	0.54
Past residence	0.02	0.04	0.02	0.72
Duration of Florida residence	0.00	0.00	0.05	0.32
Children under 18 in household	-0.05	0.10	-0.02	0.62
Pet ownership (dogs or cats)	0.14	0.08	0.08	0.10
Education	0.00	0.02	0.00	0.93
Ethnicity (1=Latino, 0=non-Latino)	0.21	0.17	0.06	0.21
Race (1=white, 0=nonwhite) ^a	-0.34	0.17	-0.09	0.05
Age	0.00	0.00	-0.04	0.48
Income	-0.03	0.02	-0.09	0.07
Gender (1=male, 0=female)	0.15	0.08	0.08	0.06
Southwest/South Central	-0.03	0.08	-0.02	0.71
Rural/Urban (1=rural, 0=urban)	-0.03	0.09	-0.02	0.74

^a Significant at p≤0.05. ^b Significant at p≤0.01.

Table 3-10. Regression model for prediction of knowledge level.

Variable (R ² =0.19, p<0.01, n=575)	B	SE B	β	p-value
Interest in wildlife ^b	0.59	0.08	0.32	<0.01
Hunt or fish	-0.02	0.18	-0.01	0.91
Hike or camp	0.19	0.18	0.05	0.29
Landownership	-0.05	0.11	-0.02	0.64
Livestock ownership	-0.01	0.37	0.00	0.97
Current residence	0.18	0.15	0.06	0.24
Past residence	0.06	0.09	0.03	0.46
Duration of Florida residence	0.01	0.01	0.07	0.09
Children under 18 in household	0.01	0.22	0.00	0.98
Pet ownership (dogs or cats)	0.12	0.17	0.03	0.49
Education	0.02	0.04	0.03	0.51
Ethnicity (1=Latino, 0=non-Latino) ^a	-0.78	0.37	-0.09	0.03
Race (1=white, 0=nonwhite)	0.13	0.37	0.02	0.72
Age	-0.01	0.01	-0.08	0.09
Income	0.03	0.04	0.04	0.39
Gender (1=male, 0=female) ^b	0.47	0.17	0.12	0.01
Southwest/South Central ^b (1=Southwest, 0=South Central)	0.43	0.16	0.11	0.01
Rural/Urban (1=rural, 0=urban)	-0.19	0.18	-0.05	0.29

^a Significant at p≤0.05. ^b Significant at p≤0.01.

Table 3-11. Effect size on behavioral intention of all predictor variables calculated from standardized regression coefficients (β).

Independent Variable	Dependent variable: Behavioral intention		
	Total Effect Coefficient	Direct Effects	Indirect Effects
Panther management preferences	0.25	0.25	0.00
Attitudes toward panthers and recovery	0.40	0.33	0.07
Risk perception	-0.24	0.00	-0.24
Knowledge about panthers	0.09	0.00	0.09
Subjective norm for supporting recovery	0.21	0.13	0.07
Interest in wildlife	0.19	0.00	0.19
Hunt or fish	-0.05	0.00	-0.05
Children under 18 in household	-0.02	0.00	-0.02
Pet ownership (dogs or cats)	0.03	0.00	0.03
Ethnicity (1=Latino, 0=non-Latino)	-0.04	0.00	-0.04
Race (1=white, 0=nonwhite)	0.01	0.00	0.01
Age	-0.05	0.00	-0.05
Gender (1=male, 0=female)	0.01	0.00	0.01
Southwest/South Central (1=Southwest, 0=South Central)	0.01	0.00	0.01

Table 3-12. Means and comparisons for media variables between southwest and south central Florida strata.

Variable ^d	Total	Rural				Urban			
	Sample ^a	Southwest ^b	South	Group		Southwest ^b	South	Group	
	Mean (SD)	Mean (SD)	Central ^c	χ^2	<i>p</i>	Mean (SD)	Central ^c	χ^2	<i>p</i>
Panther news ^{ef}	0.35 (0.48)	0.62 (0.49)	0.29 (0.45)	43.43	0.00	0.61 (0.49)	0.28 (0.45)	43.40	0.00
Panther news source									
Television	0.39 (0.49)	0.40 (0.49)	0.45 (0.50)	0.39	0.53	0.36 (0.48)	0.40 (0.49)	0.31	0.58
Internet	0.03 (0.17)	0.03 (0.18)	0.04 (0.19)	0.01	0.93	0.02 (0.13)	0.04 (0.19)	0.63	0.43
Newspaper	0.51 (0.50)	0.50 (0.50)	0.43 (0.50)	0.70	0.40	0.61 (0.49)	0.47 (0.50)	2.89	0.09
Radio	0.05 (0.21)	0.02 (0.16)	0.05 (0.23)	0.97	0.33	0.01 (0.09)	0.07 (0.26)	5.52	0.02
Magazine	0.01 (0.11)	0.01 (0.09)	0.02 (0.13)	0.32	0.57	0 (0)	0.02 (0.14)	2.16	0.14
Other	0.01 (0.08)	0.04 (0.20)	0.02 (0.13)	0.64	0.42	0.01 (0.09)	0 (0)	0.47	0.49
Adequacy of media coverage:									
Not enough ^f	0.65 (0.48)	0.61 (0.49)	0.73 (0.45)	5.23	0.02	0.50 (0.50)	0.68 (0.47)	11.16	0.00
Adequate ^f	0.34 (0.47)	0.38 (0.49)	0.27 (0.45)	4.23	0.04	0.49 (0.50)	0.31 (0.46)	11.26	0.00
Too much	0.01 (0.10)	0.01 (0.11)	0 (0)	2.19	0.14	0.01 (0.11)	0.01 (0.11)	0	0.99
Truth of media coverage:									
Usually true ^f	0.46 (0.50)	0.48 (0.50)	0.36 (0.48)	4.69	0.03	0.53 (0.50)	0.45 (0.50)	1.91	0.17
Sometimes true	0.44 (0.50)	0.42 (0.50)	0.48 (0.50)	1.33	0.25	0.41 (0.49)	0.45 (0.50)	0.52	0.47
Rarely true	0.07 (0.25)	0.08 (0.27)	0.11 (0.31)	0.64	0.42	0.05 (0.22)	0.07 (0.25)	0.52	0.47
Untrue	0.03 (0.17)	0.02 (0.14)	0.05 (0.21)	2.12	0.15	0.01 (0.11)	0.03 (0.17)	1.33	0.25
Best source for information									
Wildlife Agencies ^f	0.70 (0.46)	0.63 (0.48)	0.69 (0.46)	1.51	0.22	0.63 (0.49)	0.72 (0.45)	4.20	0.04
Politicians	0.01 (0.11)	0.01 (0.07)	0 (0)	1.04	0.31	0.01 (0.10)	0.02 (0.12)	0.16	0.69
Environmental groups	0.23 (0.42)	0.28 (0.45)	0.26 (0.44)	0.32	0.57	0.28 (0.45)	0.21 (0.41)	2.81	0.09

Table 3-12. Continued

Variable ^d	Total Sample ^a	Rural				Urban			
		Southwest ^b	South Central ^c	Group Comparisons		Southwest ^b	South Central ^c	Group Comparisons	
				Mean (SD)	χ^2			<i>p</i>	Mean (SD)
Sportsmen	0.06 (0.23)	0.08 (0.27)	0.05 (0.22)	1.31	0.25	0.08 (0.27)	0.05 (0.22)	1.31	0.25
General news source									
Television	0.50 (0.50)	0.51 (0.50)	0.57 (0.49)	1.25	0.26	0.51 (0.50)	0.49 (0.50)	0.21	0.65
Newspaper	0.29 (0.45)	0.27 (0.45)	0.23 (0.43)	0.75	0.39	0.34 (0.47)	0.28 (0.45)	1.26	0.26
Radio	0.06 (0.24)	0.06 (0.24)	0.05 (0.21)	0.42	0.52	0.03 (0.17)	0.07 (0.26)	3.33	0.07
Internet	0.13 (0.33)	0.14 (0.34)	0.12 (0.33)	0.17	0.68	0.08 (0.27)	0.14 (0.35)	3.62	0.06
Magazine	0.02 (0.16)	0.02 (0.14)	0.03 (0.17)	0.43	0.51	0.04 (0.20)	0.02 (0.12)	2.36	0.12

^a n=802. Means calculated using frequency weights to reflect the actual populations in each of the strata without inflating the sample size. ^b n=200. ^c n=201. ^d Range for all media variables is 0/1. ^e Asked whether respondent had heard about panthers in the past six months. ^f Difference between at least one strata pair significant at $p \leq 0.05$.

Table 3-13. Means and comparisons for media variables between rural and urban strata.

Variable ^d	Total Sample ^a	Southwest ^b				South Central ^c			
		Rural	Urban	Group Comparisons		Rural	Urban	Group Comparisons	
				Mean (SD)	Mean (SD)			χ^2	<i>p</i>
Panther news ^e	0.35 (0.48)	0.62 (0.49)	0.61 (0.49)	0.03	0.87	0.29 (0.45)	0.28 (0.45)	0.03	0.86
Source of panther news									
Television	0.39 (0.49)	0.40 (0.49)	0.36 (0.48)	0.42	0.52	0.45 (0.50)	0.40 (0.49)	0.25	0.62
Internet	0.03 (0.17)	0.03 (0.18)	0.02 (0.13)	0.63	0.43	0.04 (0.19)	0.04 (0.19)	0.00	0.99
Newspaper	0.51 (0.50)	0.50 (0.50)	0.61 (0.49)	3.16	0.08	0.43 (0.50)	0.47 (0.50)	0.22	0.64
Radio	0.05 (0.21)	0.02 (0.16)	0.01 (0.09)	0.97	0.33	0.05 (0.23)	0.07 (0.26)	0.17	0.68
Magazine	0.01 (0.11)	0.01 (0.10)	0 (0)	0.98	0.32	0.02 (0.13)	0.02 (0.14)	0.00	0.99
Other	0.01 (0.08)	0.04 (0.20)	0.01 (0.09)	2.63	0.10	0.02 (0.13)	0 (0)	0.99	0.32
Adequacy of media coverage									
Not enough ^f	0.65 (0.48)	0.61 (0.49)	0.50 (0.50)	4.06	0.04	0.73 (0.45)	0.68 (0.47)	0.55	0.46
Adequate ^f	0.34 (0.47)	0.38 (0.49)	0.49 (0.50)	4.06	0.04	0.27 (0.45)	0.31 (0.46)	2.12	0.15
Too much	0.01 (0.10)	0.01 (0.11)	0.01 (0.11)	0.00	0.97	0 (0)	0.01 (0.11)	0.96	0.33
Truth of media coverage									
Usually true	0.46 (0.50)	0.48 (0.50)	0.53 (0.50)	0.79	0.38	0.36 (0.48)	0.45 (0.50)	2.83	0.09
Sometimes true	0.44 (0.50)	0.42 (0.50)	0.41 (0.49)	0.03	0.85	0.48 (0.50)	0.45 (0.50)	0.39	0.53
Rarely true	0.07 (0.25)	0.08 (0.27)	0.05 (0.22)	1.41	0.24	0.11 (0.31)	0.07 (0.25)	1.63	0.20
Untrue	0.03 (0.17)	0.02 (0.14)	0.01 (0.11)	0.23	0.63	0.05 (0.21)	0.03 (0.17)	0.63	0.43
Best source for information									
Wildlife Agencies	0.70 (0.46)	0.63 (0.48)	0.63 (0.49)	0.03	0.87	0.69 (0.46)	0.72 (0.45)	0.47	0.49
Politicians	0.01 (0.11)	0.01 (0.07)	0.01 (0.10)	0.36	0.55	0 (0)	0.02 (0.12)	3.07	0.80
Environmental groups	0.23 (0.42)	0.28 (0.45)	0.28 (0.45)	0.00	1.00	0.26 (0.44)	0.21 (0.41)	1.25	0.26
Sportsmen	0.06 (0.23)	0.08 (0.27)	0.08 (0.27)	0.00	0.95	0.05 (0.22)	0.05 (0.22)	0.00	0.97

Table 3-13. Continued

Variable ^d	Total Sample ^a	Southwest ^b				South Central ^c			
		Rural	Urban	Group Comparisons		Rural	Urban	Group Comparisons	
		Mean (SD)	Mean (SD)	Mean (SD)	χ^2	<i>p</i>	Mean (SD)	Mean (SD)	χ^2
General news source									
Television	0.50 (0.50)	0.51 (0.50)	0.51 (0.50)	0.00	0.96	0.57 (0.49)	0.49 (0.50)	2.31	0.13
Newspaper	0.29 (0.45)	0.27 (0.45)	0.34 (0.47)	1.81	0.18	0.23 (0.43)	0.28 (0.45)	1.19	0.28
Radio	0.06 (0.24)	0.06 (0.24)	0.03 (0.17)	2.06	0.15	0.05 (0.21)	0.07 (0.26)	1.10	0.29
Internet	0.13 (0.34)	0.14 (0.34)	0.08 (0.27)	3.10	0.08	0.12 (0.33)	0.14 (0.35)	0.31	0.58
Magazine	0.02 (0.15)	0.02 (0.14)	0.04 (0.20)	1.40	0.24	0.03 (0.17)	0.02 (0.12)	1.05	0.30

^a n=802. Means calculated using post-stratification weights. ^b n=200. ^c n=201. ^d Range for all media variables is 0/1. ^e Asked whether respondent had heard about panthers in the past six months. ^f Difference between at least one strata pair significant at $p \leq 0.05$.

Table 3-14. Pearson correlation coefficients for response variables.

Variable ^b	PROBEHAVIOR	PROMANAGE	HIGHRISK	PROATTITUDE	SOCIALNORM	KNOWLEDGE
PROBEHAVIOR	1	0.60	-0.39	0.58	0.49	0.31
PROMANAGE		1	-0.55	0.63	0.57	0.32
HIGHRISK			1	-0.54	-0.37	-0.35
PROATTITUDE				1	0.50	0.33
SOCIALNORM					1	0.25
KNOWLEDGE						1

^aAll correlations significant at $p < 0.01$.

^bPROBEHAVIOR = behavioral intentions regarding panther recovery

PROMANAGE = panther management preferences

HIGHRISK = perception of risk from panthers

PROATTITUDE = attitudes toward panthers and panther recovery

SOCIALNORM = perceived social pressure to support panther recovery

KNOWLEDGE = knowledge of panthers

Table 3-15. Pearson correlation coefficients for response variables and demographics.

Variable ^b	PROBEHAVIOR	PROMANAGE	HIGHRISK	PROATTITUDE	SOCIALNORM	KNOWLEDGE
Interest in wildlife	0.31**	0.34**	-0.35**	0.37**	0.27**	0.35**
Landownership	0.02	0.07*	-0.16**	0.06	0.10**	0.08*
Current residence	0.07*	0.06	-0.12**	0.09**	0.09**	0.06
Past residence	0.05	0.01	-0.01	0.04	0.00	0.04
Length of Florida residence	0.07*	0.05	-0.09*	0.01	0.05	0.09*
Education	0.05	0.11**	-0.18**	0.14**	0.06	0.14**
Age	-0.13**	-0.23**	0.14**	-0.16**	-0.15**	-0.13**
Income	0.05	0.12**	-0.17**	0.05	0.03	0.16**

^a * $p \leq 0.05$. ** $p \leq 0.01$.

^b PROBEHAVIOR = behavioral intentions regarding panther recovery
 PROMANAGE = panther management preferences
 HIGHRISK = perception of risk from panthers
 PROATTITUDE = attitudes toward panthers and panther recovery
 SOCIALNORM = perceived social pressure to support panther recovery
 KNOWLEDGE = knowledge of panthers

Table 3-16. Mean comparisons for management preferences between proponents-undecided-opponents.

Questions	Proponents	Undecided	Opponents	Group comparisons ^c		
	Mean (n=297) or %	Mean (n=387) or %	Mean (n=117) or %			
	1	2	3	1&3	1&2	2&3
Overall, do you support or oppose efforts to help the panther population in Florida by increasing the number of panthers in the wild?	2.89	2.53	2.08	**	**	**
Management preferences:						
Panthers should...						
...be removed from the wild anywhere they are found close to people's home. ^b	1.38	1.68	1.67	**	**	ns
...not be removed from the wild under any circumstances. ^b	2.21	1.94	1.95	*	**	ns
To what extent would you support or oppose...						
...moving panthers into your county to increase the number of panthers in the wild? ^b	2.84	2.37	1.86	*	**	**
...protecting natural lands in your county? ^b	2.92	2.69	2.26	**	**	**
Protecting people from panthers is the responsibility of...						
...homeowners.	0.17	0.11	0.09	ns	*	ns
...the government.	0.04	0.11	0.16	**	**	ns
...both.	0.79	0.78	0.74	ns	ns	ns
Panthers should be protected...						
...everywhere.	0.79	0.62	0.44	**	**	**
...only on public lands.	0.06	0.35	0.50	**	**	**
...nowhere.	0.04	0.04	0.06	ns	ns	ns

^a Groups formed from mean scores on behavioral intention scale after weighting. Proponents $y > 3$, Undecided $y = 3$ and Opponents $y < 3$. ^b Mean scores for single 5-point Likert scale questions collapsed into 3 levels (Agree/Support=3, Undecided=2, Disagree/Oppose = 1) for this analysis. ^c * $p \leq 0.05$. ** $p \leq 0.01$. ns=not statistically significant.

Table 3-17. Mean comparisons for attitudes between proponents-undecided-opponents.

Questions	Proponents	Undecided	Opponents	Group comparisons		
	Mean	Mean	Mean	1&3	1&2	2&3
	(n=297)	(n=387)	(n=117)			
1	2	3				
Attitude statements: ^b						
Positive aspects of protecting panthers...						
...it saves natural lands where they live in Florida.	2.93	2.86	2.61	**	**	**
...it is important to know that they exist in Florida.	2.91	2.88	2.65	**	ns	**
...panthers are one of the world's most endangered animals.	2.86	2.74	2.40	**	*	**
...panthers help maintain balance in prey species.	2.84	2.73	2.62	**	**	**
...panthers have a right to live wherever they are.	2.71	2.58	2.26	**	*	**
...future generations should be able to see panthers in Florida.	2.95	2.92	2.60	**	ns	**
...panthers are beautiful animals.	2.93	2.96	2.73	**	*	**
...panthers are intelligent animals.	2.89	2.80	2.41	**	*	**
...it helps keep a healthy environment.	2.90	2.84	2.50	**	*	**
Negative aspects of protecting panthers...						
...it is a waste of money.	1.07	1.24	1.57	**	**	**
...it restricts access to public lands.	1.70	1.75	1.90	*	ns	ns
...it is a threat to the economic prosperity of Florida.	1.25	1.28	1.57	**	**	**
...it restricts how private land owners can manage their land.	1.89	1.98	2.19	**	**	*
...panthers are vicious murderers.	1.11	1.26	1.31	**	**	*
...panthers compete with hunters for game animals such as deer.	1.87	2.08	2.09	**	**	ns

^a Groups formed from mean scores on behavioral intention scale after weighting. Proponents $y > 3$, Undecided $y = 3$, and Opponents $y < 3$. ^b Mean scores for single 5-point Likert scale questions collapsed into 3 levels (Agree/Support=3, Undecided=2, Disagree/Oppose=1) for this analysis. ^c * $p \leq 0.05$. ** $p \leq 0.001$. ns=not statistically significant.

Table 3-18. Means and comparisons on knowledge questions for total sample, proponents, undecideds, and opponents.

Questions	Total Sample %	Proponent	Undecided	Opponent	Group comparisons ^b		
		% (n=297)	% (n=387)	% (n=117)	1&3	1&2	2&3
		1	2	3			
The greatest cause that panthers are endangered is...							
...hunting.	7	4	9	5	ns	**	ns
...car accidents.	15	13	16	19	ns	ns	ns
...disease.	1	1	2	1	ns	ns	ns
...not enough natural land or habitat.	66	80	67	61	**	**	ns
Knowledge index: ^c							
Do you believe that Florida panthers still live in Florida?	93	97	92	87	**	**	ns
Less than 100 panthers live in Florida today.	36	52	29	19	**	**	*
A male panther weighs about 200 pounds. ^d	32	36	31	26	ns	ns	ns
More than 1000 panthers live in Florida today. ^d	53	72	43	41	**	**	ns
Deer are one of the main food items of panthers.	49	49	51	43	ns	ns	ns
Panthers are only active during the day. ^d	73	86	67	63	**	**	ns
In the western United States, panthers are also known as mountain lions.	60	63	59	55	ns	ns	ns
There has never been a panther attack on a human being in Florida.	14	22	10	5	**	**	*
What is the status of panthers in Florida?	62	73	60	44	**	**	**
What is the best way to respond to a panther that is approaching you aggressively?	28	29	28	24	ns	ns	ns

^a Groups formed from mean scores on behavioral intention scale after weighting. Proponents $y > 3$, Undecided $y=3$ and Opponents $y < 3$. ^b* $p \leq 0.05$. ** $p \leq 0.01$. ^c Percentages reflect the proportion of the group that answered correctly. Correct answers: yes; yes; no; no; yes; no; yes; yes; endangered; shout and try to look as large as possible. ^d False statements: reverse-coded before inclusion in the knowledge index.

Table 3-19. Comparisons of media preferences between proponents-undecided-opponents

Questions	Proponents	Undecided	Opponents	Group comparisons ^b		
	Percentage (n=297)	Percentage (n=387)	Percentage (n=117)	1&3	1&2	2&3
Have you heard anything about panthers in the last six months?	41	29	37	ns	**	ns
Where did you hear it?						
Television	36	37	54	*	ns	ns
Internet	3	4	0	ns	ns	ns
Newspaper	48	57	45	ns	ns	ns
Radio	9	2	0	*	*	ns
Magazine	3	0	0	ns	ns	ns
Other	1	0	0	ns	ns	ns
Coverage of panthers in the media is...						
...not enough.	78	59	48	**	**	ns
...adequate.	21	41	48	**	**	ns
...too much.	1	0	4	*	ns	**
Coverage of panthers in ...						
...usually true.	45	49	36	ns	ns	*
...sometimes true.	42	43	55	*	ns	*
...rarely true.	10	5	5	ns	*	ns
...untrue.	4	2	4	ns	ns	ns
The best source for information about panthers is...						
...wildlife agencies.	45	49	36	ns	ns	ns
...politicians.	0	2	0	ns	*	ns
...environmental groups.	27	20	21	ns	*	ns
...sportsmen.	5	6	6	ns	ns	ns
How do you prefer to get your news?						
Television	47	55	45	ns	*	ns
Newspaper	32	24	35	ns	*	*
Radio	6	6	6	ns	ns	ns
Internet	13	13	14	ns	ns	ns
Magazine	3	2	1	ns	ns	ns

^a Groups formed from mean scores on behavioral intention scale after weighting. Proponents $y > 3$, Undecided $y=3$ and Opponents $y < 3$. ^b* $p \leq 0.05$. ** $p \leq 0.01$. ns=not

statistically significant

Table 3-20. Comparisons of demographic variables between proponents-undecided-opponents

Questions	Proponents	Undecided	Opponents	Group comparisons ^b		
	Mean or Percentage (n=297)	Mean or Percentage (n=387)	Mean or Percentage (n=117)			
	1	2	3	1&3	1&2	2&3
Interest in wildlife ^c	3.29	2.47	2.22	**	**	**
In the last two years, have you...						
...hunted or fished.	35	29	33	ns	ns	ns
...hiked or camped.	42	33	26	**	*	ns
Do panthers live in your county?	68	61	69	ns	ns	ns
How much land do you own in Florida?						
None	17	18	29	**	ns	**
Less than 1 acre	57	64	51	ns	ns	*
1 to 5 acres	19	15	15	ns	ns	ns
6 to 20 acres	6	1	3	ns	**	ns
More than 20 acres	2	2	1	ns	ns	ns
Current residence						
City	10	14	10	ns	ns	ns
Suburb	65	63	68	ns	ns	ns
Rural non-farm	23	23	21	ns	ns	ns
Rural farm	2	1	1	ns	ns	ns
Past residence						
City	17	19	14	ns	ns	ns
Suburb	41	42	41	ns	ns	ns
Rural non-farm	26	23	32	ns	ns	ns
Rural farm	15	16	13	ns	ns	ns
Length of Florida residence	26.51	19.86	20.18	**	**	ns
Children under 18 in the household	19	21	14	ns	ns	ns
Pet ownership	61	45	45	**	**	ns
Livestock ownership	2	4	4	ns	ns	ns
Education level ^d	3.03	2.85	2.89	ns	**	ns
Ethnicity (% Latino)	8	12	4	ns	ns	*
Race (% white)	92	91	99	*	ns	*
Age	55.90	56.43	62.99	**	ns	**
Income ^e	6.01	5.73	5.97	ns	ns	ns
Gender (% male)	42	39	37	ns	ns	ns
Southwest or South Central (% Southwest)	23	19	29	ns	ns	*
Rural or urban (% rural)	15	13	16	ns	ns	ns

^a Groups formed using weighted means from intention scale. Proponents>3, Undecided=3 and Opponents<3. ^b* p≤0.05. ** p≤0.01. ^c Included 4 retrospective wildlife-related activities. Range: 0/4. Higher response reflects greater interest. ^d Levels: 0=None, 1=Elementary school, 2=High school, 3=College, 4=Graduate or Professional school. ^e Levels: 1) < \$10,000; 2) \$10-\$19,000; 3) \$20-29,000; 4) \$30-\$39,000; 5) \$40-49,000; 6) \$50-\$59,000; 7) \$60-\$79,000; 8) \$80-\$99,000; ; 9) \$100-\$150,000; 10) > \$150,000.

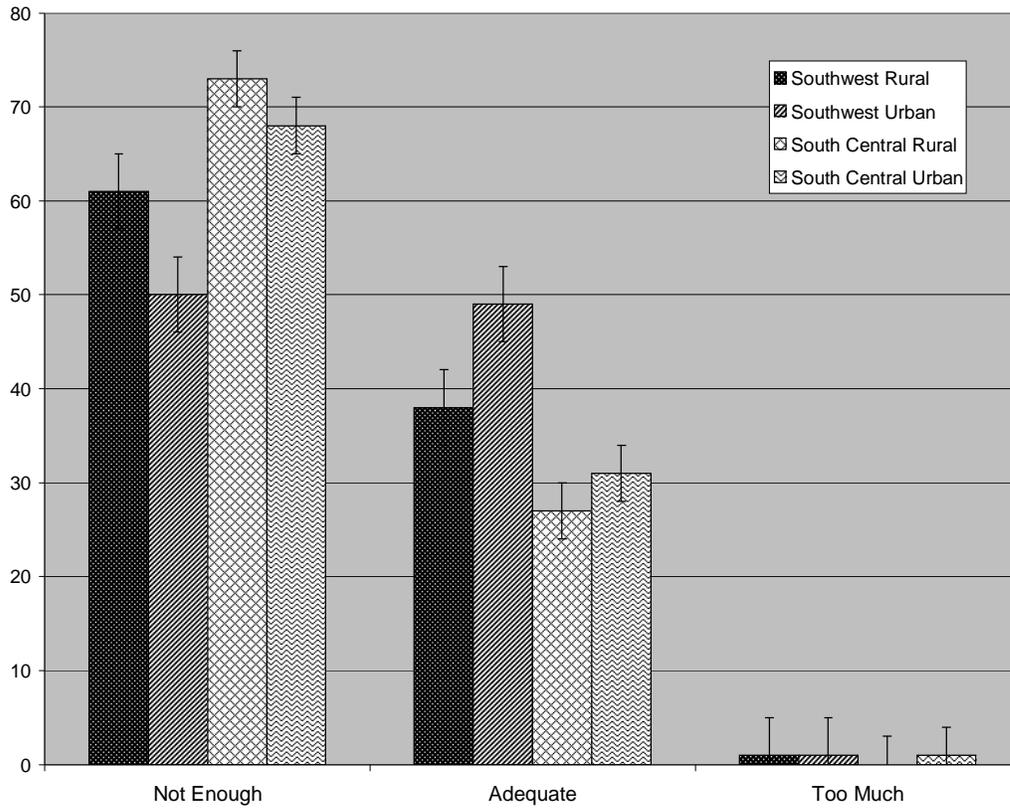


Figure 3-1. Perceived adequacy of panther media coverage by stratum.

CHAPTER 4 DISCUSSION

Comparison of Support for Panther Recovery Across Strata

The majority of respondents supported panther recovery. This was true across all strata, whether rural or urban, and with residency in Southwest or South Central Florida. The trend across response was strongest for items showing general positive attitudes toward panthers and was less strong for specific management interventions or intentions to personally take action to protect panthers.

Consistent with other attitudinal studies of proposed large carnivore reintroductions, translocation of panthers was a less popular management intervention than protection of natural lands. Previous experience with reintroduction of wolves in Yellowstone and attempts to reintroduce panthers in North Florida has demonstrated that a small, vocal group of opposed citizens can stall reintroduction efforts indefinitely (Fritts & Carbyn 1995; Belden & McCown 1996). This makes it critical to understand who is likely to support or oppose panther activities. This enables managers to reinforce positive attitudes, influence neutral attitudes and better understand negative attitudes in order to address specific beliefs about a species. Involving potential opponents in the recovery process in advance of any plans for reintroduction could help build a broader constituency for action. Respondents who intended to act in opposition to recovery were supportive of protection of natural lands but not translocation of panthers into their county. In other studies, rural residents were more inclined to oppose translocation, and to be less tolerant of panthers near areas occupied by people than urban residents because they perceived themselves to be at greater risk (Manfredo et al. 1998; Riley & Decker

2000). However, in this study, both urban and rural respondents tended to support translocation.

Urban residents of Southwest Florida were significantly more likely than urban residents in South Central Florida to prefer that panthers be protected only on public lands, rather than everywhere. This difference may result from landowner rights issues, which are likely to be more salient to residents in core panther habitat who are more likely to be affected by land use restrictions. Still, residents in both locations agreed that panthers should be protected, and few differences in levels of support were found between urban-rural or Southwest-South Central strata pairings, in spite of a fairly large number of demographic differences.

Whereas other studies have found lower levels of knowledge about predators among urban residents to be correlated with more positive attitudes (Kellert 1983), and Arizona residents have been found to simultaneously have positive attitudes and very little knowledge of pumas (Casey et al. 2005), in this study, knowledge about panthers was positively correlated with attitudes and level of support, and negatively correlated with risk perception. In fact, the high level of knowledge, low perceived risk, and highest level of support expressed by rural residents of South Central Florida compared to all other strata is a promising finding in light of the fact that support from this stratum may be the most critical to any proposed translocation. The relatively higher knowledge level of urban residents of Southwest Florida than those in South Central Florida is also promising news for outreach and education efforts currently underway in core panther habitat, considering the apparent relationship between knowledge levels and support for recovery and low perception of risk.

Perception of risk was consistently low, with a majority of respondents unlikely to feel concerned about panthers living nearby in either their neighborhoods or natural areas. This is consistent with studies of pumas in the western United States, where puma populations number in the thousands (Riley & Decker 2000; Casey et al. 2005). Unlike a study of Colorado residents (Zinn & Pierce 2002), we found no significant differences in risk perception between males and females. Gender did predict knowledge levels, however, and may therefore indirectly affect risk perception. Additionally, unlike Zinn and Pierce (2002), presence of children under 18 in the household did not predict risk perception in our study, although the two were negatively correlated.

Duration of Florida residence was correlated with lower levels of risk perception, unlike results from a study measuring risk perception from pumas in Montana which found no relationship between duration of residence and perceived risk (Riley & Decker 2000). Duration was also positively correlated with level of support, which may be of particular importance with regard to Southwest Florida, which has a high seasonal influx of part-year retirees (S.K. Smith & M. House, unpublished data). Indeed, all Florida locations have a high immigration rate relative to other parts of the country. Shorter residency time, combined with an aging population, may lead to decreased support for recovery. Consistent with other studies of environmental behavior, proponents of panther recovery tended to be slightly younger, and more highly educated than either undecided respondents or opponents (Hines et al. 1986; Jones & Dunlap 1992; Berger 1997).

Factors Influencing Public Support for Panther Recovery

Panther recovery is a multi-dimensional challenge due to characteristics of both the panther and its human neighbor; any solution must address a wide array of human behaviors with similarly diverse motivations. This study used the TRA (Ajzen &

Fishbein 1980) to address this need by testing relationships between the individual factors theorized to influence support for recovery. The resulting model explained 43% of the variance in behavioral intentions, and 51% of the variance in panther management preferences. This suggests that it is relatively effective for predicting public support for panther recovery and providing insight into the cognitive, affective and demographic characteristics associated with the behavioral intentions measured. If carefully interpreted, it can be used to assist wildlife managers and policy-makers in anticipating support for panther recovery by providing detailed information on the levels of support for specific management interventions, potential informational gaps, and attitudinal differences likely to be found in those who intend to act in support of or opposition to recovery.

Behavioral intentions were best predicted by management preference, attitudes, and subjective norm, meaning that each explained a unique part of the variance in behavioral intentions. Additionally, both attitudes and subjective norm were identified as predictive variables in the regression analysis of management preferences. These findings offer statistical support for the placement of management preferences as a moderating variable in the resulting model (Figure 4-1). Management preferences were strongly correlated with behavioral intentions, although regression analysis showed that both attitudes and subjective norms were also independent predictors of intentions. Since the same unit of measurement was used for all ordinal scales, comparing the unstandardized path coefficients provides some insight into the relative size of effect of each on behavioral intentions. Based on this comparison, attitudes are the most important predictor of behavioral intentions of the theoretical variables included in the model. This finding

implies that perceived consequences of panther protection may present the most effective target for communication strategies. Risk perception, although not a direct predictor, negatively influenced behavioral intentions through attitudes, management preferences and subjective norms. This offers support for the importance of maintaining low perceived risk in order to encourage support for recovery. Greater knowledge, as expected, was correlated with a lower risk perception, affirming that education can be important to maintaining low perceived risk by reducing the likelihood of negative human-panther encounters.

Although demographic variables were not found to directly predict behavioral intentions, they exerted an indirect effect through all five theoretical variables, which can help to define target audiences and messages for outreach strategies, for example, to promote awareness. People who expressed greater interest in wildlife by participating in more wildlife-related activities were likely to perceive less risk and to be more supportive of panther recovery. Contrary to expectations, pet ownership also predicted lower perceived risk. Respondents who had hunted or fished within the last two years, however, tended to have more negative attitudes and subjective norms, potentially making them less supportive of recovery efforts. Older respondents tended to be less supportive of recovery efforts and to have more negative attitudes than younger ones. Those with children under 18 in the household tended to be less supportive of recovery efforts. Although white respondents perceived less risk from panthers than nonwhites, they also perceived less social pressure to support recovery. Ethnicity played a part in risk perception and knowledge levels, with Latino respondents tending to perceive greater risk and know less about panthers than did non-Latino respondents. Finally, residents of

Southwest Florida tended to know more about panthers than did residents of South Central Florida, and males tended to know more than females.

Proponent-Undecided-Opponent Comparisons

Proponents, opponents and undecided respondents differed not only in their reactions to specific management interventions, but in their desire for greater media coverage of the issue, and their beliefs about potential consequences of panther protection. Opponents were more likely to believe that protecting panthers would restrict landowner development rights, and that panthers would compete with hunters for game. They tended to object to translocation of panthers into their home county. These findings suggest that understanding the social context of panther recovery requires posing specific questions about the perceived consequences or costs associated with recovery efforts. For example, when asked whether or not saving panthers is a threat to the economic prosperity of Florida, 11% of the total sample agreed, and 80% disagreed. However, when asked whether protecting panthers restricts how private landowners can manage their land, 38% agreed and 40% disagreed. Most Florida residents may agree that panthers should be saved, but these findings suggest that they are likely to differ in the strength of that belief and, consequently, at what personal cost they are willing to support it.

Proponents, undecided respondents and opponents all felt that panthers should not be removed whenever they were found in close proximity to areas occupied by people. However, both opponents and undecided respondents tended to disagree that panthers should not be removed from the wild under any circumstances, suggesting that there are circumstances under which these groups would prefer that panthers be removed. When asked whether panthers should be protected everywhere, in public lands only, or

nowhere, proponents were more likely to believe that panthers should be protected everywhere, whereas opponents and undecided respondents tended to feel that panthers should be protected on public lands only.

The fact that the majority of respondents identified habitat loss as the greatest cause of panther endangerment suggests people can identify successful management interventions to support recovery. For example, people who are not aware that habitat loss is the primary cause of endangerment may be less concerned that panther protection may conflict with development goals and economic growth in their home county. Providing this new information might increase support for management interventions. Furthermore, expressions of support from people who are aware that panthers need more habitat are more likely to be durable. Our findings differed from the results of a 1994 public survey about panthers in that the percentage of people attributing panther endangerment to car accidents increased from 7% to 15% (Duda & Young 1995) (Table 4-1). This may be a result of media coverage of the record number of panther fatalities from vehicular trauma reached by June 2007 (Florida Fish and Wildlife Commission 2007). If highway mortality becomes a serious impediment to recovery, the success of interventions, such as highway underpasses, should be made clear. These should be well received by the public as they do not require any personal actions on the part of individuals.

Limitations of the Study

The low response rate for this survey relative to the panther survey administered in 1995 (Duda & Young 1995) is consistent with declining response rates for telephone surveys over the past quarter century (Curtin et al. 2005). Low response rates may not yield high nonresponse errors, provided that nonrespondents are similar to respondents

(Keeter et al. 2000). Alternatively, studies on political opinion have shown that nonrespondents may be less interested in the survey topic than respondents (Brehm 1993; Couper 1997). Non-respondent interviews were not conducted due to financial constraints. However, the fact that a much higher proportion of our respondents engaged in wildlife viewing around their property (69%) than Florida respondents to the National Survey of Hunting, Fishing and Wildlife-Associated Recreation in 2001 (22%) suggests that respondents to this survey may have been more interested in wildlife than non-respondents (U.S. Fish and Wildlife Service 2001).

The rural designation we used was entirely based on population density, whereas rural sociology employs numerous competing definitions of rurality. Characteristics generally included in these definitions besides an area's population density are its location relative to urban areas, homogeneity of the culture, and economic/social character (Switzer 2001). Our study sought to generalize to the total population of both study sites, and the cost of screening for these criteria would have been prohibitively expensive and difficult to maintain at this scale.

Recommendations for Public Outreach for Panther Recovery

1. Incorporate perceived benefits of panther protection into outreach messages.

Beliefs can be bolstered or weakened based on new information and new ideas (Ajzen & Fishbein 1980). Attitudes figured prominently in the model predicting behavioral intentions, suggesting that communication strategies may be most effective if

they include messages about perceived benefits of protecting panthers and positive characteristics associated with the cats in messages. Proponents, undecideds, and opponents all tended to agree that protecting panthers had positive consequences. In the total sample, 92% believed that future generations should be able to see panthers in Florida, 90% agreed that it is important to know that panthers exist even though they will probably never see them in the wild, 88% of respondents agreed that protecting panthers helps to save natural lands, 85% agreed that protecting panthers keeps the environment healthy, 79% believe that panthers maintain balance in prey species, and 75% agreed that panthers have a right to exist wherever they are. Outreach might incorporate these perceived benefits, which are likely to resonate with a broad audience and reinforce existing positive beliefs, in messages to encourage behaviors which benefit panthers. For example, a billboard discouraging speeding in core panther habitat might be combined with a message about the need to protect every panther so they will be around for future generations to see.

2. Reach specific audiences with information.

New information can also be used to challenge existing beliefs (Fishbein & Ajzen 1975), although it is unlikely to sway individuals with strongly held beliefs (Rabin & Schrag 1999). The introduction of new information is particularly relevant to the social context of panther recovery because respondents who were undecided regarding their intention to act, and who may not have strong beliefs about panther recovery, made up nearly half (48%) of the total sample. Undecided respondents were less likely than proponents to have heard anything about panthers in the past six months, so targeting these individuals to communicate the endangered status of panthers may be an effective

outreach strategy for increasing support. Because people are unlikely to be concerned about the peril of a species with which they have no familiarity or emotional connection, these messages might be more effective if they feature attractive photos of panthers.

A larger proportion of undecided respondents in this study were Latino (12%) than either proponents (8%) or opponents (4%). This may be an area for further investigation, particularly in light of the fact that Latinos are projected to become the largest minority group within the next decade (Hill & Moreno 2001). Agencies may be able to reach out to this constituency by identifying and developing relationships with gatekeeper organizations, such as churches, schools or community centers, and ensuring outreach materials are linguistically and culturally appropriate.

3. Address concerns of specific stakeholder groups, such as hunters.

Less supportive respondents expressed concerns about land use restrictions and the effects of panthers on game species, rather than any inherent dislike of panthers. These types of cost-related concerns have been cited in making wolves in Yellowstone a “biophysical pawn” in a larger debate over resource management (Nie 2001). In addition to holding more negative attitudes toward panthers and panther protection, respondents who had hunted or fished within the past two years were less likely to feel social pressure to support recovery. It may be helpful for agencies to provide information about the likely impact of panthers on game species, the current size of deer populations in Florida, or the benefits of top-down trophic control to the fitness of deer herds. Government agencies are often considered a credible and trustworthy source of environmental information, but the use of other spokespersons to address this stakeholder group should also be considered. In the event that the negative relationship between hunting

demographics and support for recovery indicates an underlying conflict, considerable care should be given to selecting the spokesperson for information, such as using well-known hunting advocate. Alternatively, involving members of the hunting community in data collection for panther research may help to both foster trust between wildlife managers and hunters, and to increase faith in the information produced.

4. Target key stakeholders, such as large landowners, with practical information and alternatives.

Based on experience with wolf reintroductions in Yellowstone, concerns about restrictions of land use may be best addressed by focusing on improving relations between wildlife agencies and local landowners and fostering trust through regular, transparent communication (Fritts & Carbyn 1995; Jacobson 1999). For wolf recovery, a persuasive argument for landowners regarding reintroduction was that reintroduced wolves would be considered “experimental” animals, and offered landowners more options if they became a nuisance, than if wild wolves simply repopulated the Yellowstone ecosystem. If this will be true of translocated panthers, this should be made apparent. Large landowners are most likely to feel unfairly burdened by the costs of preserving panthers. Indeed, when ownership of more than 20 acres is included in the regression analysis for behavioral intentions as a dichotomous variable, it is a significant negative predictor of intention to act in support of panther recovery ($B=-0.47$, $p<0.05$). Furthermore, those who intended to oppose panther recovery were significantly more likely to believe that panthers should only be protected on public lands. This highlights the importance of continuing to advance landowner incentive programs such as the Rural Land Stewardship legislation in Collier County, which make listed species such as

panthers a benefit rather than a cost to the private landowners upon whom their long term persistence largely depends.

5. Provide creative outreach to newcomers to Florida.

The mean length of Florida residence for proponents was at least 6 years longer than either undecideds or opponents. Respondents who had lived in Florida between 20 and 50 years had the most positive attitudes toward panthers, and the lowest perceived risk. Those who had lived in Florida for less than 20 years or greater than 50 years generally had less positive attitudes toward panthers, although the latter was likely a consequence of age. This suggests that newer residents of Florida may be a target audience for communication campaigns, to maintain high public support for panther recovery and low levels of human-panther interaction. Welcome billboards in panther habitat might visually introduce new residents to a photograph of the Florida state animal, while advocating that drivers be vigilant about their speed. Brochures or magnets could be introduced in welcome packets disseminated to new residents by chambers of commerce, or exhibits at airports may reach new residents.

6. Support current outreach efforts.

Risk may not currently have direct association with behavioral intention because levels of human-panther interaction are so low. One widely publicized incident could potentially change the relationship between risk perception and support, making it much more critical predictor of intentions. However, the relationship between greater knowledge levels and lower risk perception offers support for the importance of current outreach and education efforts underway to teach residents in panther habitat about how to safely coexist with panthers.

7. Emphasize rarity of panthers and hopeful progress in outreach messages.

Only a minority of respondents were able to correctly respond to a series of knowledge questions about Florida panthers. These included facts such as the number of wild panthers remaining in Florida: only 36% responded fewer than 100; however, significantly more proponents (52%) than opponents (19%) responded correctly. Proponents were also more aware of the reasons for panther endangerment, and the status of panthers. Few respondents regardless of their levels of support were aware of other information about panthers, such as lack of any attack on a human by a panther in Florida (14% overall correct), or the best way to respond to a panther which is approaching aggressively (28% correct).

All of these are potential areas of emphasis in an outreach strategy. People value rare things, and proponents were more aware of the endangered status of panthers. Environmental behavior can be motivated by a sense of urgency to an extent, provided that the problem is not perceived as overwhelming, and action consequently futile. To that end, outreach messages to the general public should combine the endangered status of panthers with updates on what progress has been made in increasing the number of panthers in the wild. Since our results indicate that media outlets such as television and newspapers are reaching proponents, undecided respondents and opponents alike, it is important that agencies maintain strong relationships with representatives of local and regional media. Sending updates via a broadcast email to reporters who commonly handle environmental news stories would be reasonably simple, requiring only a current contact list. Establishing personal relations with media representatives is an important precursor for good coverage (Jacobson 1999).

8. Promote panther recovery along with efforts to protect natural lands.

The fact that respondents generally identified habitat loss as the primary reason for panther endangerment may facilitate obtaining public support for management interventions such as protection of natural lands. In fact, support for this measure was high across all strata, and among proponents, opponents and undecided respondents alike. It may now be important that residents not only be aware of habitat loss as the greatest cause, but understand how much land panthers actually need. Environmental organizations in New England have successfully tied the fate of the wolf to that of wilderness (Nie 2001). Beliefs about the positive consequences of panther protection found in this study, combined with the high levels of support for protecting natural lands, suggest that panthers might best be marketed to the public as part of a larger campaign to preserve habitat in Florida, and “keep Florida beautiful”.

9. Develop relationships and communicate with demographic groups more likely to oppose translocation.

Translocation, or reintroduction, is often one of the most controversial issues in large carnivore conservation, and the findings in this study were consistent with previous studies (Clark et al. 1996; Lohr et al. 1996). Respondents who opposed translocation in this survey were less likely to engage in outdoor activities, and were generally older, poorer and less educated than those who supported translocation. As a result, these individuals are unlikely to see signage or receive educational materials in public parks. A majority (67%) of those who opposed translocation were female, compared to 56% of supporters. The fact that the mean age of those who opposed translocation was nearly 10 years older than that of supporters highlights the importance of future monitoring as

Florida's population continues to age (U.S. Census Bureau 2000). The majority of both undecideds (54%) and opponents (58%) reported a preference for getting their news from television, with an additional third of each group preferring newspaper sources, indicating that either outlet may be an effective way of reaching these individuals. Since support for translocation was correlated with lower risk perception and greater knowledge levels, educational strategies which use these outlets to address knowledge gaps regarding how to live safely in panther habitat may increase support for translocation. Wildlife managers can involve these demographic groups in citizen task forces, advisory councils or stakeholder planning teams, which would assist the agencies in selecting the most appropriate means of preparing local residents for any proposed translocation (Decker et al. 2001).

10. Continue to monitor public support and concern for panther recovery and assess the effectiveness of various outreach efforts.

Attitude salience and levels of support are likely to change as demographic characteristics of Florida residents change and new challenges or opportunities in panther recovery arise. Future evaluation and monitoring efforts will be needed, particularly if translocation is to take place, in order to ensure that agency goals address stakeholder views, and that stakeholders most directly affected by translocation know how to coexist safely with panthers.

Table 4-1. Comparisons with other attitudinal studies on mountain lions. ^a

Current Study	Duda and Young (1995)	Riley and Decker (2000)	Casey et al (2005)
<p>“What is the status of panthers in Florida?”</p> <p>62% correctly identified the status as “endangered”.</p>	<p>“What is the status of panthers in Florida?”</p> <p>58% correctly identified the status as “endangered”.</p>	N/A	N/A
<p>“Less than 100 panthers live in Florida today.”</p> <p>36% of respondents believed that less than 100 panthers remain.</p> <p>“More than 1000 panthers live in Florida today.”</p> <p>17% believed that more than 1000 panthers remained.</p>	<p>“How many panthers live in Florida today?”</p> <p>25% of respondents believed that less than 100 panthers remained, and 8% believed that more than 1000 remained.</p>	N/A	N/A
<p>“What is the greatest cause of the panther being endangered?”</p> <p>66% attributed endangerment to habitat loss, and 15% to car accidents.</p>	<p>“What is the greatest cause of the panther being endangered?”</p> <p>58% of respondents attributed endangerment to habitat loss, and 7% to car accidents.</p>	N/A	N/A
<p>“Overall do you support or oppose efforts to help the panther population in Florida by increasing the number of panthers in the wild?”</p> <p>71% of respondents supported.</p>	<p>“Overall, do you support or oppose efforts to save the Florida panther from extinction?”</p> <p>91% of respondents supported.</p>	N/A	N/A

Table 4-1. Continued.

Current Study	Duda and Young (1995)	Riley and Decker (2000)	Casey et al (2005)
<p>“I am concerned about the safety of pets because panthers may live nearby.”</p> <p>63% of respondents were NOT concerned about the safety of pets because of panthers.</p>	<p>“Is panther reintroduction a concern for you because you think it is likely that panthers will harm pets?”</p> <p>72% of respondents were NOT concerned that reintroduced panthers would harm pets.</p>	<p>N/A</p>	<p>N/A</p>
<p>“I am concerned about the safety of livestock because panthers may live nearby.”</p> <p>62% of respondents were NOT concerned about the safety of livestock because of panthers.</p>	<p>“Is panther reintroduction a concern for you because you think it is likely that panthers will harm livestock?”</p> <p>58% of respondents were NOT concerned that reintroduced panthers would harm livestock.</p>	<p>“Mountain lions are an unacceptable threat to livestock.”</p> <p>46% of respondents did NOT feel that mountain lions were an unacceptable threat to livestock.</p>	<p>N/A</p>
<p>“Although I never see Florida panthers in the wild, it is important to know they exist in Florida.”</p> <p>90% of respondents agreed.</p>	<p>“Although I may never see a Florida panther in the wild, it is important to know they exist in Florida.”</p> <p>92% of respondents agreed.</p>	<p>N/A</p>	<p>N/A</p>

Table 4-1. Continued.

Current Study	Duda and Young (1995)	Riley and Decker (2000)	Casey et al (2005)
<p>“Maintaining panther populations in the wild is a threat to the economic prosperity of Florida.”</p> <p>80% of respondents disagreed.</p>	<p>“Maintaining panther populations in the wild is a threat to the economic prosperity of Florida.”</p> <p>82% of respondents disagreed.</p>	N/A	N/A
<p>“Panthers have a right to live wherever they are.”</p> <p>75% of respondents agreed.</p>	N/A	<p>“Mountain lions should have the right to exist wherever they may occur.”</p> <p>44% of respondents agreed.</p>	N/A
<p>“If, in order to increase the number of panthers in the wild, panthers would have to be moved into your county, to what extent would you support or oppose this action?”</p> <p>64% of respondents supported translocation into their home county.</p>	<p>“I favor the reintroduction of panthers in my county or surrounding counties.”</p> <p>77% of respondents supported reintroduction into either their home county or surrounding counties.</p>	N/A	N/A
<p>“Panthers should be removed from the wild anywhere they are found close to people’s homes.”</p> <p>67% of respondents disagreed.</p>	N/A	N/A	<p>“Mountain lions should be controlled (i.e., shot or trapped) anywhere they are found in association with human developments.”</p> <p>68% of respondents disagreed.</p>

Table 4-1. Continued.

Current Study	Duda and Young (1995)	Riley and Decker (2000)	Casey et al (2005)
<p>“Which of the following comes closest to your point of view:</p> <p>1) Panthers should be protected everywhere in Florida.</p> <p>2) Panthers should be protected ONLY within national parks and other nature reserves, NOT on private lands.</p> <p>3) Panthers should not be protected anywhere.”</p> <p>66% of respondents felt that panthers should be protected everywhere, 30% felt they should only be protected in parks, and 4% felt they should not be protected anywhere.</p>	<p>N/A</p>	<p>N/A</p>	<p>“Mountain lions should... ...be protected in all areas.”</p> <p>79% of respondents agreed.</p> <p>“Mountain lions should be protected only in national parks.”</p> <p>38% of respondents agreed.</p> <p>“Mountain lions should not be protected under any circumstances.</p> <p>6% of respondents agreed.</p>

^a Comparisons between these studies should be interpreted with caution, since the sampling frames, mode, context and question wording differed between surveys.

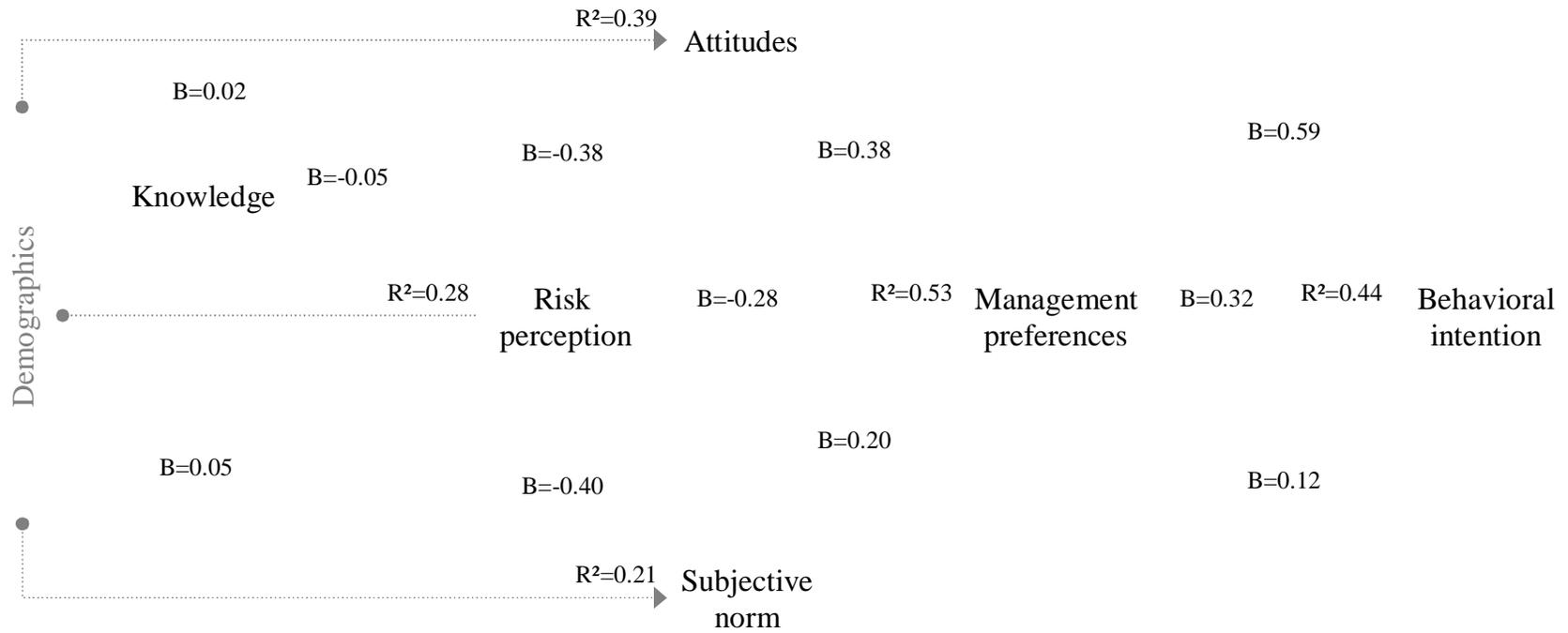


Figure 4-1. Path diagram showing unstandardized regression coefficients (B) and explained variance (R²) for regressions on all theoretical variables influencing intention to act in support of or opposition to panther recovery..

APPENDIX A
DISCUSSION QUESTIONS FOR STAKEHOLDER INTERVIEWS TO ELICIT QUESTIONS
FOR PUBLIC SURVEY

Background Information:

1. How long have you lived in this area?
2. What sorts of outdoor activities do you regularly engage in?
(Examples: 1) feeding wildlife; 2) hunting deer or hogs; 3) fishing; 4) hiking/birding)
3. Do you make any use of nearby public lands? Which lands and what do you do there?

Panther questions:

4. What do you think of when you hear the words "Florida panther"?
5. Please name three traits that you associate with Florida panthers.

At the moment several young male panthers have roamed throughout central Florida. However, since female panthers are not generally known to roam north of the Caloosahatchee River, panthers are not able to breed here. Therefore, panthers are currently confined to South Florida and cannot grow in number. Wildlife officials are considering helping female panthers to move north of the river in order to increase the chances that they will breed and increase the number of panthers in Florida.

6. Do you have an opinion about this?

Now I'd like to find out about the types of **IMPACTS** you feel that you, your family, your business or your community are likely to experience if this action is taken. Impacts are important events caused by wildlife, or management decisions about wildlife, that somehow affect your life. They can have a positive, negative or neutral effect on you. Please name any impacts that come to mind, and indicate whether each of them has a positive, negative or neutral effect on you. **There's no rush, please feel free to take a moment to think about it.**

- [For each impact identified] Do you feel that that is a positive or negative impact?

7. Have you read or heard anything about the Florida panther recently in the press?
 - What was the most **recent** report that you recall? Do you remember when you heard it?
 - Where/from whom did you hear about it?
 - [If they heard it from a friend or acquaintance] Do you recall seeing anything about panthers recently in the press?
 - What was the most **memorable** thing you remember hearing about the Florida panther?
8. How satisfied are you with current panther management decisions made by local, state and federal agencies? In your opinion, has the money spent thus far on efforts to save the Florida panther been worthwhile?
9. How would you like to see the total panther population change in the next five years?
10. In your mind, what should managers do to achieve these changes in the total panther population?

11. Have you participated in or do you know of any **landowner incentive programs** [e.g. Rural Land Stewardship legislation in Collier County] to preserve natural lands? What are your thoughts on these types of programs? Where do they succeed in meeting the needs of large landowners and where do they fail?

12. In general, do you support or oppose continuing efforts to save the Florida panther? If you had to choose one reason for your opinion, what would it be?

Knowledge questions about panthers:

13. How many pounds would you say a male panther weighs? A female?

14. What do panthers prey on?

15. How many Florida panthers do you think remain in the wild?

16. What is the status of the panther in Florida - would you say it is healthy and thriving, recovering, or still in danger of going extinct? I'm looking for your personal opinion, rather than the federally or state-listed status.

Additional Background Questions

17. What do you think are the most important wildlife issues in your local area right now?

18. How much land do you own or lease in South Florida?

19. Do you sell any agricultural products raised/grown on land in the study area? Do you raise cattle? (Do you have grazing rights to any public lands?)

20. Do you allow others to hunt on your property? Why/why not? What species are hunted on your property?

APPENDIX B SURVEY INSTRUMENT

Hello, my name is _____ and I'm calling from the University of Florida to ask your opinions on wildlife in Florida - specifically the Florida panther. This is not a sales call. This is an opportunity for you to have input into how the state manages your natural resources. In order for our results to be scientifically valid, we need to randomly pick someone within your household to interview. Of the people who currently live in your household who are 18 or older, who most recently celebrated a birthday? May I speak with him or her?

(INTERVIEWER: If the person who answers the phone IS the person with the most recent birthday, read Introduction A. If he or she is NOT, read Introduction B once the person with the most recent birthday comes to the phone.)

Introduction A: This interview is completely voluntary and confidential. There is no penalty for refusing to complete any or all of the survey. There is no monetary compensation for participating in this research. If I come to any question that you would prefer not to answer, just let me know and I will skip over it. The entire survey should take about 20 minutes. May I begin with your first name?

Introduction B: Hello, my name is _____ and I'm calling from the University of Florida to ask your opinions on wildlife in Florida - specifically the Florida panther. This is not a sales call. This is an opportunity for you to have input into how the state manages your natural resources. (The interview is completely voluntary and confidential. There is no penalty for refusing to complete any or all of the survey. There is no monetary compensation for participating in this research. If I come to any question that you would prefer not to answer, just let me know and I will skip over it.) The entire survey should take about 20 minutes. May I begin with your first name?

Please tell me whether or not you've participated in each of the following activities in the past two years.

- 1 Have you watched TV programs, videos or movies about wildlife?
1) Yes
2) No

- 2 Have you read about wildlife?
1) Yes
2) No

- 3 Have you gone hunting or fishing?
1) Yes
2) No

- 4 Have you gone hiking or camping?
1) Yes
2) No

- 5 (INTERVIEWER: Only ask of people who say "Yes" to Questions 3 and/or 4.)
Did you make use of public lands such as national, state or city parks for these activities?
1) Yes
2) No

- 6 During the past two years did you take a special interest in wildlife around your home, that is, closely observing, feeding or trying to identify wildlife near your home?
1) Yes
2) No
- 7 During the past two years, did you take any trips or outings in Florida of at least 1 mile away from home for the PRIMARY purpose of observing, photographing or feeding wildlife? Please do not include trips to the zoo, circus, aquarium, museum or trips for fishing or hunting.
1) Yes
2) No
- 8 Do you believe that Florida panthers still live in Florida?
1) Yes
2) No

(INTERVIEWER: Only if people answer "No" or "I don't know" to Question 8, say "Actually, although few people are aware of it, panthers still do live in parts of Florida.")

- 9 To the best of your knowledge, do panthers live in your county?
1) Yes
2) No

People have many different attitudes toward panthers. Please tell me whether you strongly disagree, disagree, neither disagree nor agree, agree or strongly agree with the following statements. If you do not have an opinion on an issue, you may answer "don't know". (INTERVIEWER: Read answer list after questions only if necessary.)

- 10 Protecting panthers is good because it helps to save the natural lands where they live in Florida.
1) strongly disagree
2) disagree
3) neither agree nor disagree
4) agree
5) strongly agree
- 11 Protecting panthers is a waste of money.
1) strongly disagree
2) disagree
3) neither agree nor disagree
4) agree
5) strongly agree
- 12 Although I never see Florida panthers in the wild, it is important to know that they exist in Florida.
1) strongly disagree
2) disagree
3) neither agree nor disagree
4) agree
5) strongly agree
- 13 Protecting panthers is good because they are one of the world's most endangered animals.
1) strongly disagree

- 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree
- 14 Protecting panthers restricts access to public lands.
(INTERVIEWER: Only if asked, say "Public lands are places such as parks or public forests.")
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree
- 15 Maintaining panther populations in the wild is a threat to the economic prosperity of Florida.
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree
- 16 Panthers are good because they help maintain deer and small animals in balance with their environment.
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree
- 17 Panthers have a right to live wherever they are.
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree
- 18 Protecting panthers restricts how private landowners can manage their land.
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree
- 19 Our grandchildren and future generations should be able to see panthers in Florida.
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree
- 20 Panthers are beautiful animals.
- 1) strongly disagree

- 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree
- 21 Panthers are vicious murderers.
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree
- 22 Panthers are intelligent animals.
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree
- 23 Panthers compete with hunters for game animals such as deer.
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree
- 24 Protecting panthers is good because helps keep a healthy environment.
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree

The next set of questions are designed to help us to better understand your opinions about potential encounters between panthers and people in Florida. Again, please tell me if you strongly disagree, disagree, neither disagree nor agree, agree or strongly agree with the following statements. If you do not have an opinion on an issue, you may answer "don't know". (INTERVIEWER: Read answer list after questions only if necessary.)

- 25 I am concerned about the safety of pets because panthers may live nearby.
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree
- 26 I am concerned about the safety of livestock because panthers may live nearby.
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree

- 4) agree
 - 5) strongly agree
- 27 I am concerned about the safety of children because panthers may live nearby.
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree
- 28 I am comfortable visiting natural areas where panthers may live nearby.
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree
- 29 I am comfortable being outdoors in my neighborhood, where panthers may live nearby.
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree
- 30 I am more concerned about being injured by a panther than being injured by a dog.
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree
- 31 I am more concerned about being injured by a panther than being injured by an alligator.
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree
- 32 I am more concerned about being injured by a panther than being bitten by a snake.
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree
- 33 Panther-human encounters are becoming more frequent.
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree

- 34 People can generally make choices about being exposed to the risks from panthers.
1) strongly disagree
2) disagree
3) neither agree nor disagree
4) agree
5) strongly agree
- 35 Panthers should be removed from the wild anywhere they are found close to peoples' homes.
1) strongly disagree
2) disagree
3) neither agree nor disagree
4) agree
5) strongly agree
- 36 Panthers should not be removed from the wild under any circumstances.
1) strongly disagree
2) disagree
3) neither agree nor disagree
4) agree
5) strongly agree
- 37 Most people who are important to me think I should support increasing the number of panthers in Florida.
1) strongly disagree
2) disagree
3) neither agree nor disagree
4) agree
5) strongly agree
- 38 Please tell me which of the following three statements comes closest to your view:
(INTERVIEWER: Read each response aloud. Respondent should select only ONE response.)
1) Protecting people from panthers is the responsibility of homeowners.
2) Protecting people from panthers is the responsibility of the government.
3) Protecting people from panthers is the responsibility of both homeowners AND the government.
- 39 Please tell me which of the following three statements comes closest to your view:
(INTERVIEWER: Read each response aloud. Respondent should select only ONE response.)
1) Panthers should be protected everywhere in Florida.
2) Panthers should be protected ONLY within national parks and other nature reserves, NOT on private lands.
3) Panthers should not be protected anywhere.

Now I'd like to learn more about your opinion on how panthers should be managed. Please tell me whether you strongly oppose, oppose, neither oppose nor support, support or strongly support each of the following options. Again, there are no right or wrong answers. If you don't have an opinion about any one of the measures, you may say "don't know". (INTERVIEWER: Read answer list after questions only if necessary.)

- 40 Overall, do you support or oppose efforts to help the panther population in Florida by increasing the number of panthers in the wild?
1) strongly oppose
2) oppose
3) neither support nor oppose
4) support
5) strongly support
- 41 If, in order to increase the number of panthers in the wild, panthers would have to be moved into your county, to what extent would you support or oppose this action? (INTERVIEWER: If asked whether the government intends to do this, say "This is only a hypothetical question by the University of Florida. It does not reflect any actual government plans.")
1) strongly oppose
2) oppose
3) neither support nor oppose
4) support
5) strongly support
- 42 If, in order to increase the number of panthers in the wild, it would be necessary to protect natural lands in your county, to what extent would you support or oppose this action?
1) strongly oppose
2) oppose
3) neither support nor oppose
4) support
5) strongly support

Please tell me whether you strongly disagree, disagree, neither agree nor disagree, agree or strongly agree with the following statements. (INTERVIEWER: Read answer list after questions only if necessary.)

- 43 I would write a letter to an elected official to support increasing the number of panthers in Florida.
1) strongly disagree
2) disagree
3) neither agree nor disagree
4) agree
5) strongly agree
- 44 I would pay a small additional amount of state tax to fund increasing the number of panthers in Florida.
1) strongly disagree
2) disagree
3) neither agree nor disagree
4) agree
5) strongly agree
- 45 I would vote for an elected official that favors development over panthers.
1) strongly disagree
2) disagree
3) neither agree nor disagree
4) agree
5) strongly agree

- 46 I would attend a local government meeting to oppose increasing the number of panthers in Florida.
- 1) strongly disagree
 - 2) disagree
 - 3) neither agree nor disagree
 - 4) agree
 - 5) strongly agree

These next statements are some things that people say about panthers. Please tell me whether you agree or disagree with each statement.

- 47 Less than 100 panthers live in Florida today.
- 1) Agree
 - 2) Disagree
- 48 A male panther weighs about 200 pounds.
- 1) Agree
 - 2) Disagree
- 49 More than 1000 panthers live in Florida today.
- 1) Agree
 - 2) Disagree
- 50 Deer are one of the main food items of panthers.
- 1) Agree
 - 2) Disagree
- 51 Panthers are only active during the day.
- 1) Agree
 - 2) Disagree
- 52 In the western United States, panthers are also known as mountain lions.
- 1) Agree
 - 2) Disagree
- 53 There has never been a panther attack on a human being in Florida.
- 1) Agree
 - 2) Disagree
- 54 Which of the following do you believe best describes the status of panthers in Florida?
- 1) Extinct
 - 2) Endangered
 - 3) Rare
 - 4) Common
- 55 In your opinion, what is the greatest cause of the panther being endangered?
- 1) Hunting
 - 2) Car accidents
 - 3) Disease

- 4) Not enough natural land or habitat
- 5) Not enough food

- 56 To the best of your knowledge, what is the best way to respond to a panther that is approaching you aggressively? Should you...
- 1) Lie down and play dead
 - 2) Shout and try to look as large as possible
 - 3) Run away
 - 4) Climb a tree
 - 5) Other

Now I'd like to ask you a couple of questions about what you may have seen or heard about Florida panthers in the news.

- 57 Within the last six months, have you seen anything about the Florida panther in the news?
- 1) Yes
 - 2) No

- 58 (INTERVIEWER: Only ask of people who say "Yes" to Question 57.)
Where did you hear about it? (INTERVIEWER: Record first response ONLY.)
- 1) Television
 - 2) Internet
 - 3) Newspaper
 - 4) Radio
 - 5) Magazine
 - 6) Other (Type in response)

- 59 Do you feel that newspaper coverage about the Florida panther is...
- 1) Not enough
 - 2) Adequate
 - 3) Too much

- 60 Do you feel that news about panthers in newspapers is...
- 1) Usually true
 - 2) Sometimes true
 - 3) Rarely true
 - 4) Untrue

- 61 Please tell me which of the following sources provides the most reliable information about panthers. (INTERVIEWER: Record first response ONLY.)
- 1) Wildlife agencies
 - 2) Politicians
 - 3) Environmental groups
 - 4) Sportsmen's clubs

- 62 Which of the following sources do you rely on primarily to get your news?
(INTERVIEWER: Record first response ONLY.)
- 1) Television
 - 2) Newspaper
 - 3) Radio
 - 4) Internet

5) Magazines

63 If you read a newspaper, what newspaper do you read? (INTERVIEWER: Type in response.)

Great, we're almost finished. The final set of questions I have will help us understand the answers of everyone taking the survey.

64 How much land do you own in Florida? (INTERVIEWER: Read all answers aloud.)

- 1) None
- 2) less than 1 acre
- 3) 1-5 acres
- 4) 6-20 acres
- 5) more than 20 acres

65 (INTERVIEWER: Only ask of people who have more than 20 acres.)

What is the primary use of this land?

- 1) Farming
- 2) Ranching
- 3) Forestry
- 4) Not being used
- 5) Residential
- 6) Commercial
- 7) Industrial
- 8) Investment
- 9) Other (Type in response.)

66 Do you own any livestock such as cows, goats, pigs, sheep or chickens?

- 1) Yes
- 2) No

67 (INTERVIEWER: Only ask of people who have livestock.)

Please tell me which, if any, of the following types of livestock you own.

- 1) Cows
- 2) Goats
- 3) Pigs
- 4) Sheep
- 5) Chicken
- 6) Other (Type in response.)

68 Please indicate which of the following best describes where you currently live:

- 1) In the downtown area of a city or town.
- 2) In the suburb of a city or town.
- 3) In a rural area but not on a farm.
- 4) On a farm.

69 Please indicate which of the following statements best describes where you grew up:

- 1) In the downtown area of a city or town.
- 2) In the suburb of a city or town.
- 3) In a rural area but not on a farm.
- 4) On a farm.

The remaining questions may seem a little personal. Your responses will be completely confidential and anonymous, and will help us to understand the answers of everyone taking the survey.

- 70 How many years have you lived in Florida? (INTERVIEWER: Type in response.)
- 71 Do you have any children under the age of 18 who live at home?
1) Yes
2) No
- 72 Do you have any dogs or cats?
1) Yes
2) No
- 73 What is the highest grade of school or year in college you yourself completed?
(INTERVIEWER: Please code response, not necessary to read choices.)
0) None
1) Elementary
2) Elementary
3) Elementary
4) Elementary
5) Elementary
6) Elementary
7) Elementary
8) Elementary
9) High School
10) High School
11) High School
12) High School
13) College (Associate's)
14) College (Associate's)
15) College
16) College
17) Some Graduate School
18) Graduate or Professional Degree
- 74 Are you of Spanish or Hispanic origin ?
1) Yes
2) No
- 75 How would you describe your race or ethnic background? (INTERVIEWER: If necessary read choices.)
1) White (Caucasian)
2) Black (African American)
3) Asian or Pacific Islander
4) American Indian or Alaska native
5) Other (Type in response)
6) Multi-racial or mixed race
- 76 May I ask your age?

- 77 Now consider your family's household income from all sources. As I read a list, please stop me when I get to the income level that best describes your household income in 2006 before taxes.
- 1) less than \$10,000
 - 2) \$10,000 to \$19,999
 - 3) \$20,000 to \$29,999
 - 4) \$30,000 to \$39,999
 - 5) \$40,000 to \$49,999
 - 6) \$50,000 to \$59,999
 - 7) \$60,000 to \$79,999
 - 8) \$80,000 to \$99,999
 - 9) \$100,000 to \$150,000
 - 10) Over \$150,000
- 78 (INTERVIEWER: Record gender.)
- 1) Male
 - 2) Female

This completes the survey. Thank you very much. Any questions or concerns you may have about your rights can be directed to the UFIRB office, Box 112250, University of Florida, Gainesville, FL 32611-2250.

(If you have any questions regarding the survey, you may contact Dr. Susan Jacobson, Professor at the Department of Wildlife Ecology and Conservation, University of Florida, Gainesville.)

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