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Species-level Recovery Actions

- 1. Determine the current distribution of the Florida panther.** Although much information exists on the current distribution of the Florida panther, additional radio-telemetry investigations of panthers located in eastern Lee County may provide additional, important distributional data.
- 2. Protect/enhance existing south Florida panther population, associated habitats, and prey resources.** Although there are frequent reports of Florida panthers from many areas of the species' historic range, the only confirmed surviving population is in south Florida. The survival of the Florida panther depends upon the continued existence of this population.
 - 2.1 Manage existing panther population.** The implementation of the genetic restoration program and the continuing loss of habitat has resulted in the need to actively manage the extant panther population. Management, primarily, will be through continued monitoring and translocations to address population demographic needs.
 - 2.1.1 Translocate panthers as appropriate to address demographic needs and achieve better utilization of available habitat.** In order to manage the existing population genetics, expand the existing range, and provide stock for population reestablishment sites, translocation of subadult animals may be necessary. A protocol for translocations will be developed and presented to the FPIC for approval.
 - 2.1.2 Monitor translocation efforts.** Any translocation project will have to be carefully planned and closely monitored to determine if the expected results are achieved. Monitoring would include telemetry, health examinations, and radio-instrumentation of any offspring produced in a translocation project. The results of these monitoring endeavors would indicate if changes in the approved protocol were necessary.
 - 2.2 Continue implementation/monitoring of genetic restoration program.** The approved Genetic Management Plan will provide guidance and direction for the genetic restoration program. In addition, management considerations must include rationale for leaving/removing Texas cougar females, guidelines for achieving/maintaining scientific control, and using translocations and intercross project for identified genetic/demographic needs. Monitoring of this program includes radio-instrumentation of all progeny produced by female Texas cougars and Florida panthers.

2.2.1 Identify and implement actions to aid in maintaining scientific control. Radio-instrumentation of progeny is essential in this program. Likewise, eliminating the likelihood of male progeny backcrossing with female Texas cougars is paramount. Protocols to address these issues need to be developed and should identify male genetic restoration progeny, where they were born, when they were collared, when they may reach breeding age, as well as potential translocation areas. Translocations of these animals should follow the protocol developed in 1.1.3.1. An analysis of the need to eliminate backcrossing should also include the option of removing the female Texas cougars.

2.3 Develop/maintain emergency treatment/rehabilitation/holding capabilities at appropriate facilities. In addition to maintaining captive treatment/rehab capabilities, a field treatment/rehab facility should be developed on public land in south Florida. This facility would assist in treating injured or sick panthers closer to their territories. The GFC veterinarian would decide which facility an injured or sick animal would be placed in. This facility could also enable conditioning operations for captive held cats to take place in proximity to release sites. The facility could also serve as a soft-release site.

2.4 Utilize captive population as appropriate to enhance the wild population. The captive population may be used to augment and supplement the wild population, particularly in instances where one gender is not present. A conditioning/translocation protocol should be developed. Every precaution should be taken when releasing captive-held animals into the wild, and the candidate should be conditioned as close to the release site as practicable.

2.5 Manage/utilize captive population as appropriate to enhance population health. The captive population should be appropriately managed and used to enhance the health of the wild population, where possible. This may involve implementation of the captive breeding program for genetic management purposes or to provide stock for population reestablishment needs. As appropriate, the captive population should be used to develop/refine assisted reproductive techniques and technology (AI, IVF). The protocol for captive propagation should be developed and presented to the FPIC for consideration.

2.6 Continue to implement actions to address other population health concerns, i.e. immunize, etc. Continue to immunize all cats captured/placed in the wild for ??????. In addition, the health assessment and recommendations on courses of action to be undertaken during recollaring efforts should continue.

2.7 Identify and minimize causes of panther injury and mortality. In a small population such as the Florida panther, any additional mortality could be catastrophic. Minimizing human-related causes of mortality should be emphasized.

- 2.7.1 Address highway risks.** Wildlife crossings that benefit the panther have been installed on several major roadways in areas of high density panther use or areas with a high incidence of road mortalities. As additional areas of concern are identified, appropriate measures should be implemented. Likewise, additional design options should be investigated in order to identify the most cost efficient type of structure that wildlife will utilize.
 - 2.7.2 Address other threats.** In general, threats to the panther revolve around the fact that the single, small population provides little security against extinction, population health appears to be compromised by numerous physiological and reproductive abnormalities, and suitable habitat for occupation is limited and under immense developmental pressure. Programs are underway to address these obvious risk factors, however, emphasis must be placed on continuing population monitoring actions to identify other threats and be prepared to address them.
- 2.8 Protect/monitor/enhance prey resources.** Identify areas where prey may be a limiting factor to panther use and develop programs to enhance the prey base in these locations.
 - 2.8.1 On public lands.** Establish prey density baselines for newly acquired lands to identify, implement, and monitor management actions designed to address prey resource questions.
 - 2.8.2 On private lands.** Obtain prey density data from GFC, where available. Evaluate the data to determine if prey availability may be a limiting factor to panther use. Offer to work with private landowners in the development, implementation, and monitoring of management plans to ensure adequate prey resources. Incorporate this information into 1.2.1 in order to assess the effects mosaic land uses have on prey densities and use patterns.

3. Conduct additional research on the biology and life history of the Florida panther

3.1 Continue/expand population demographic investigations.

- 3.1.1 Continue current activities and expand to areas north of Caloosahatchee River.** The Habitat Preservation Plan (HPP) identified approximately 512,000 acres of suitable panther habitat, contained within three ecological units north of the Caloosahatchee River. Limited capture efforts in 1988 resulted in the capture and radio-instrumentation of a male panther in this area. Emphasis should be placed on systematic field surveys to ascertain the existence of panthers north of the river. Actions should be taken to radio-instrument panthers verified north of the river.

- 3.1.2 Strive to achieve acceptable satellite/GPS tracking capability.**

Continue to investigate the use of satellite tracking equipment. This type of equipment would better enable biologists to determine how panthers move through the landscape by gathering data at night when the animals are most active.

3.1.3 Continue/expand population health investigations. This task is essential for determining the success of the genetic restoration program as well as monitoring general population health. It should be continued and expanded as needed.

3.1.4 Continue/expand population genetic investigations. This is a requirement for maintaining scientific control over the population genetics of the Florida panther, and will be essential when determining where reestablishment population stock will come from.

3.2 Continue studying mercury and other environmental contaminants in panthers and take appropriate action. Mercury investigations should continue. One mortality has been attributed to mercury toxicity, mercury levels high enough to cause concern in other panthers have been documented. Concerns have also been raised regarding possible environmental contaminants/estrogenic-related problems in panthers.

4. Monitor existing south florida panther population, associated habitats, and prey resources.

4.1. Continue/expand investigations and monitoring of panther population. It is essential that monitoring of the extant population continue and expand. In order to accomplish this task and the needs identified under 2.1.1., consideration should be given to the establishment of an Interagency Backup Capture Team. The purpose of this capture team would be to support, compliment, and expand the capabilities of the existing capture team. This capture team should explore alternative capture methods and emphasize capture of uncollared animals outside of the core population area. As a minimum, backup personnel should be trained to assist the existing capture team as needed and fill in in the absence of team members.

5. Increase public outreach efforts for the Florida panther and the recovery program.

5.1 Establish Public Outreach Subcommittee within the Florida Panther Interagency Committee. Although this task is primarily related to the range-wide recovery of the panther through population reestablishment, the South Florida Ecosystem Office would cooperate with and implement the recommendations of the Subcommittee as appropriate.

5.2 Utilize captive population as a tool to achieve outreach and other recovery

objectives. Many of the captive facilities in the State of Florida display panthers in South Florida, the South Florida Ecosystem Office would be involved as appropriate in this task.

6. Coordinate Recovery Activities, Monitor and Evaluate Progress; and Update/Revise the Recovery Plan.

6.1 Continue active role of the Florida Panther Interagency Committee and its Technical Subcommittee in recovery program. The South Florida Ecosystem Office will maintain an active role in FPIC meetings and related activities.

6.2 Update/revise recovery plan. The South Florida Ecosystem Office, in coordination with the Florida Panther Coordinator and Assistant Coordinator will revise the South Florida recovery plan for the Florida panther as necessary.

Habitat-level recovery actions

1. Protect/enhance panther habitat in south Florida. The HPP will provide guidance for this recovery task. The HPP should be updated, as appropriate.

1.1 Develop and implement a panther habitat preservation strategy and monitoring program. This task should integrate the HPP into a GIS system in order to analyze how the landscape and Priority 1 and 2 lands have changed since the HPP was published 1993. This project should result in revision of the HPP, as appropriate.

1.2 Preserve panther habitat. Habitat loss, degradation, and fragmentation continue to be the major limiting factor in panther recovery. Native vegetative communities need to be preserved in order for the extant population to survive.

1.2.1 Emphasize cooperative habitat preservation programs with landowners. The FWS should make every effort to involve private landowners in programs to protect panther habitat. The programs should involve perpetual conservation easements, cooperative agreements, management funds through Partners in Wildlife or the Farm Bill, and other means as appropriate or available. In addition, a compensation program aimed at encouraging private landowners to maintain panther habitat or important corridors on their lands should be developed. The FWS should encourage and support grassroots efforts to link Federal estate tax reform with voluntary endangered species habitat preservation.

1.2.2 Continue to acquire additional lands. Nearly 400,000 acres of priority habitat are on a State or Federal acquisition list. The FWS should work with appropriate entities to see that these projects are completed in a

timely fashion. Willing sellers should continue to be identified. Land acquisition may involve fee simple or less than fee simple means.

1.3 Manage/enhance panther habitat.

1.3.1 Continue efforts to develop/identify effective habitat management techniques. Efforts to increase prey base and restore habitat to better serve the panthers life history needs should be continued.

1.3.2 Implement/continue to management actions on public lands. Public lands in south Florida constitute the largest contiguous block of land protected from developmental or agricultural pressures. These lands should be managed to optimize ecosystem functions and better benefit the Florida panther.

1.3.3 Establish habitat management partnerships with private landowners. In addition to the preservation mechanisms identified in 1.2.1, programs to cooperate with private landowners by providing technical assistance and funding sources for appropriate management of panther habitat on private lands need to be developed.

1.3.4 Maintain important habitat linkages. This task is essential in maintaining and expanding the present panther population in South Florida and will also be important for population reestablishment sites.

2. Restore panther habitat wherever possible.

2.1 Manage habitat to enhance conditions for panthers. Fire management, removal of dense stands of exotic vegetation that affords minimal value to wildlife species, and other actions as appropriate should be implemented.

2.2 Manage public use activities to minimize panther disturbance, harassment, and competition for prey resources. Although scientific data may be limited, human recreational activity can disturb/disrupt normal panther activity. Efforts to develop a better understanding of this relationship is needed. Disturbance related to human recreational activity needs to be minimized, particularly during the denning season.

2.3. reestablish important habitat linkages. This task is essential in maintaining and expanding the present panther population in South Florida and will also be important for population reestablishment sites.

3. Perform additional research on panther/habitat interactions and relationships.

- 3.1 Use advanced satellite radio-telemetry to refine panther habitat preferences and use patterns.** Once programmable transmitters are available, panthers may be monitored any time during the day. This will enable researchers to monitor habitat utilization and preferences during periods of panther activity. Current data focuses on areas used for day rest and cover.
 - 3.2. Analyze the more refined data set.** Perform analyses on panther movements to determine how habitat fragmentation and mosaic land uses affect panther movements and territory configuration.
- 4. Monitor panther habitat as identified in task 1.1.** Using the HPP as a template, analyze recent satellite imagery to document additional habitat loss since the publication of the HPP. Incorporate the results of this analysis into revisions of the HPP.
- 5. Increase public awareness concerning panther habitat.** The outreach program for habitat-related issues should focus education efforts on maintaining large, contiguous blocks of habitat, and reestablishing important corridors between these blocks of habitat.