

recommendations to the FPIC on specific actions; and 4) revise the recovery plan as needed. Expertise and input from other appropriate sources will be utilized by the subcommittee in accomplishing these objectives.

172. FWS will designate a Florida Panther Coordinator.

In order to supplement and increase FWS involvement in panther issues and activities, a full-time coordinator will be designated.

173. Develop Participation Schedules.

FWS, FGC, DEP, and NPS and the other involved agencies and groups will develop individual participation schedules which outline specific commitments to implement tasks contained in the implementation schedule of the recovery plan. These participation schedules will outline what will be done and when and document available funding.

18. FWS, NPS, FGC, DEP, FDOT, and MSIT will continue to evaluate present laws and regulations regarding hunting, ORV use, and public use in general, and to make changes necessary to insure the panther and its prey are protected.

There are many State and Federal laws and regulations that protect wildlife and the natural environment on lands under State or Federal jurisdiction. Some of these laws and regulations have been changed in recent years to benefit the panther. Agencies responsible for the panther must continue to review these laws and regulations in light of new information on the panther, and modify them where necessary. FGC has taken action, in cooperation with DEP, to close hunting of deer and hogs in that portion of Fakahatchee Strand lying south of Alligator Alley effective July 1, 1987.

19. Federal, State, and local agencies will implement habitat protection measures.

If the habitat of the panther is not protected and managed, the panther probably will not survive. It is incumbent on all agencies to do whatever they can to insure that their management and regulatory programs are compatible with panther recovery efforts.

191. All Federal, State, and local agencies will review their respective policies regarding land management and regulatory functions to insure actions are consistent with panther conservation.

All agencies should review agency policies that affect lands under their jurisdiction in south Florida, and insure that those policies benefit the panther. This may require policy revisions in some cases. Regulatory agencies must also utilize their authorities to insure that the panther and its habitat receive maximum allowable protection. The comprehensive Habitat Management Plan under task 221 will provide important guidance and direction needed by agencies in accomplishing this.

- A. FWS, FGC, NPS, and DEP will develop a contingency plan, including implementing criteria, for the removal of all free-ranging panthers from the wild.

If it is determined that panthers are unable to survive in the wild, the remaining animals will be removed from the wild and placed in facilities suitable for maintaining and breeding them in captivity.

- B. Federal and State Agencies should acquire land essential for the survival of the panther.

As lands are identified as essential for the panther, they should be acquired and appropriately managed by the responsible agencies.

- B1. FWS will establish FPNWR.

FWS has initiated acquisition actions for this refuge, which will total approximately 32,000 acres in size and be located north of Alligator Alley and west of SR-29. The Service should close on this very important tract of land as soon as possible. An Environmental Assessment on the acquisition of this tract has already been prepared by FWS.

- B2. FWS will staff and fund FPNWR.

B3. DEP will acquire "in-holdings" in FSSP.

DEP has established a field office in Naples to accelerate acquisition of these important habitat areas. They are in the process of purchasing land along the perimeter of FSSP which lies south of Alligator Alley and west of SR-29. DEP will also purchase "in-holdings" within the preserve. Only when all of the private lands in the preserve are under public ownership will DEP be able to pursue an aggressive management program for the panther there. Until such time, DEP must take into consideration the impact any program will have on private landowners in the area.

B4. FDOT, NPS, FWS, DEP and FGC will acquire additional lands as a result of the construction of I-75.

As part of the I-75 Interstate Highway project, State and Federal governments will purchase lands not scheduled for access to the Highway. This extensive acquisition project will increase considerably the amount of acreage in public ownership and has been identified as essential to the recovery of the panther.

B5. CARL program should aggressively pursue the purchase of lands within Golden Gate Estates, south of Alligator Alley.

DEP's field office in Naples is presently involved in acquisition efforts for these lands which are occupied by the panther and are considered essential to its recovery.

B6. Secure Jet Port Property.

Panthers have recently been documented on this tract which is owned by Dade County. FGC and NPS currently have separate agreements with the County dealing with various activities including regulating some types of recreational use and fire management. The FPIC should evaluate the existing agreements to determine if additional features should be incorporated in order to provide for improved conditions for the panther. Furthermore, should an action or actions be contemplated in the future by Dade County which would likely significantly reduce the value

of the property as panther habitat, immediate steps must be taken by the FPIC to provide for an appropriate level of long-term security of the habitat. This could be accomplished through fee title acquisition or some other appropriate means.

2. Establish positive public opinion support for the management of Florida panther.

To actively pursue a recovery program, it is essential the public understand and support the effort. It is incumbent on every agency involved to insure its part in the recovery effort is clearly explained to the public.

21. Establish Public Affairs Subcommittee to inform the public about the panther and its habitat requirements.

The most important effort in the recovery of the panther must be directed at protecting its habitat. The public must be made aware of the uniqueness of this animal, its specific habitat requirements, and the need to preserve the integrity of the habitat through TV, radio, and newspaper and popular articles. The Public Affairs Subcommittee will consist of a representative from each agency on the FPIC.

211. FGC, FWS, DEP and NPS will work with sportsmen and other recreational users to encourage cooperation to provide maximum protection for the panther.

The hunting community can be a valuable ally in the protection and recovery of the panther. It is imperative that the agencies work with these groups to insure that the value of the panther is recognized and their active participation in panther conservation is solicited.

212. FGC, FWS, DEP, and NPS will work with conservation groups to encourage support for the recovery efforts for the panther.

Several conservation organizations have been extremely supportive of efforts to protect the panther. These organizations should be kept informed of progress made in the recovery effort. The proper distribution of the Florida panther newsletter, "Coryi," will aid in accomplishing

this.

213. FDOT, DEP, and NPS will post interpretive road signs on Alligator Alley, SR 29, Tamiami Trail, and other roads as necessary.

As tourism increases in south Florida, it is important to alert drivers about the panther. Panthers have been killed or injured on all three of these highways over the last several years. At present, interpretive road signs have been posted in certain areas warning motorists about the panther and the need to drive with caution. Similar signs may be required on other highways as well, such as US-27.

214. Federal and State holdings, such as EVER, BCNP, FSSP and FPNWR will distribute literature about the panther, its habits, and ways the public can assist in its recovery.

As tourism increases, visits to Federal and State installations will increase. It would be useful to distribute literature about the panther and the recovery efforts at these facilities. This literature should identify ways the public can help in the effort, and provide addresses where more information can be obtained, or a monetary contribution submitted.

215. All agencies will participate in the production and distribution of audio-visual aids.

To reach more of the general public with information about the panther and its needs, movies, slide, and video programs should be presented to church groups, schools, fraternal organizations, etc.

216. FDOT will develop a "Traveler Information Service" for radios on Alligator Alley, SR-29, Tamiami Trail, and other roads as necessary.

This service will alert motorists about the panther and protective traffic regulations in the areas involved.

217. FWS will develop a "popularized" recovery plan for distribution to the general public.

A technique that has not been attempted before is to prepare a "popular" version of a Recovery Plan. This document should explain how a private citizen can become involved in the recovery effort and facilitate participation in recovery through donations or by other types of support for management agencies. It will be reviewed and approved by the FPIC prior to distribution.

22. Involve private landowners in the recovery of the panther.

Over half of the known panthers survive on private lands. To recover this species, it is important that private land owners become actively involved in the recovery effort.

221. FWS and FGC will develop a Comprehensive Habitat Management Plan for the panther on private lands, in cooperation with the landowners within the known distribution of the panther.

As the human population of south Florida continues to grow and agriculture expands into previously undisturbed areas, more and more of the large private land holdings will be sold or otherwise removed from cattle ranching and converted to subdivisions, citrus or other row crops. This will compromise prime panther habitat that supports large numbers of prey species. In an attempt to provide for the panthers on these lands, FWS and FGC will work in cooperation with the principal landowners, to develop a Comprehensive Habitat Management Plan that will address development issues and habitat management programs. The Management Plan should address the management needs of the total system in order to better evaluate the impact of individual projects, identify the need to provide wildlife corridors across south Florida, maintain habitat for prey species and for panthers, and outline projects landowners can undertake to enhance the survival of both. DEP will participate for those lands that are part of, or immediately adjacent to, the Fakahatchee Strand system. It is necessary to gain private landowners' cooperation in this endeavor, otherwise private lands to the north of BCNP may become fragmented and unsuitable for

panthers. Realizing that today's economics require the landowner to use his land for economic gain, the plan will also develop a full range of economic incentives. This will cover such things as purchase of the remaining woodlands, wildlife and hunting easements, and any other viable methods of protecting panther habitat and food sources, while providing the landowner economic compensation. In order to enhance the actual application of the Habitat Management Plan, it should be integrated with all appropriate local governmental comprehensive plans.

3. FGC will reintroduce Florida panthers into areas of suitable habitat.

Areas that appear to be suitable panther habitat occur outside of south Florida and are apparently unoccupied. Successfully introducing Florida panthers into such areas would help reduce the risk of extinction for the subspecies. In order to re-establish populations suitable Florida panther stock will have to be introduced into areas where re-establishment is socially and ecologically sound.

31. Determine where areas of suitable habitat exist.

The first and most important task in the re-establishment of Florida panthers into unoccupied areas is to determine if suitable habitat still exists within the historic range, other than south Florida. The best way to determine if an area is suitable for panthers is to introduce panthers and monitor them. However, because of the endangered status of Florida panthers, these preliminary introductions need to be initiated using a non-endangered subspecies as a surrogate.

311. Develop priority list of potential reintroduction sites.

The study area for these initial re-establishment efforts will be chosen from a priority list of potentially suitable areas which will be determined using standardized evaluation criteria. The primary factors in determining the suitability of an area for a panther population are landowner cooperation, size, prey base, land use, and the human population density surrounding the area. A panther habitat evaluation criteria form will be developed and mailed to FGC biologists and others knowledgeable regarding large tracts of land potentially suitable for

panther reintroduction.

312. Coordinate panther reintroductions with private, State, and Federal landowners.

Landowner attitudes concerning the re-establishment of panthers and landowner management priorities need to be taken into consideration when choosing reintroduction sites. It is generally accepted that public ownership of panther habitat gives greater protection against future habitat loss due to human developments. Depending on the goals and policies of the managing agency, however, this benefit can be offset by emphasis on management programs that do not feature the panther. Since the U.S. Forest Service and Department of Defense own large tracts of land within the historic range of the panther, consideration will be given to utilizing such areas as potential re-establishment sites. Habitat management schemes that enhance deer density or management for increased densities of wild hog populations may not be compatible with landowner management policies. Also the landowner(s) may have reservations about the re-establishment of panthers due to concerns over personal liability, the threat of livestock depredation, and hunting privileges.

313. Public attitudes toward panther re-establishment will be determined in the vicinity of potential reintroduction sites.

Apart from an area having the necessary components of good panther habitat, people who live around the reintroduction site must be supportive of the idea of panther introduction. Public attitudes will probably be the major factor affecting success of re-establishment efforts, and these attitudes need to be examined prior to any trial releases. Once public attitudes have been determined, information and education (I&E) efforts can be directed toward cultivating public acceptance of the program. A statistician will be consulted on the design and analysis of questionnaire and interview surveys. Surveys will be conducted in the vicinity of potential panther habitat to determine public attitudes toward re-establishing panthers. Public meetings will be conducted and television programs, slide series, and popular literature will be

produced and distributed to enhance public attitudes as appropriate.

314. Potential reintroduction sites will be surveyed for the presence or absence of parasites and infectious diseases potentially harmful to panthers.

Roelke et al. (1985) have identified several major diseases and parasites that may be complicating Panther survival in south Florida. Potential reintroduction sites need to be surveyed for these diseases and parasites and appropriate actions taken where necessary to deal with them. A statistically adequate sample of small carnivores will be collected in the areas potentially suitable for panther reintroduction. Through necropsy, serology, and live-capture blood work, these animals will be tested for parasites and infectious diseases associated with panthers.

315. The presence or absence of existing panthers in potential reintroduction areas will be determined by conducting field searches.

A survey will be made in potential reintroduction areas to determine whether or not panthers already exist in the area. This will be done to avoid possible disruption of the social structure of any existing populations and to avoid Florida panther hybridizations with any released/escaped captive animals of other subspecies. A system of transects utilizing woods-roads and firelanes will be established and surveyed for the presence or absence of panther sign in areas that meet the criteria of panther habitat.

32. Determine the feasibility of using captive-bred offspring in the re-establishment or supplementation of Florida panther populations.

There are two primary methods to be considered in obtaining panther stock for reintroduction. These are the translocation of adult or subadult animals directly from the wild to the reintroduction area and the translocation of wild-caught stock into a captive situation where they would be kept as brood stock in a captive-breeding program with the properly conditioned offspring being introduced into the wild. Both of these methods need to be objectively evaluated using surrogate subspecies.

321. An evaluation will be made to determine if wild-caught adult panthers can successfully produce offspring in captivity.

In the wild to captive-breeding method of obtaining reintroduction stock, the initially captured panthers could come from any age class. Bringing adult animals into the program from the wild would provide earlier offspring if they can be successfully bred. Due to an unfortunate highway accident, a young adult male Florida panther is presently available for use in the captive breeding program. He will need to be tested for breeding performance. The most time-consuming, but more conservative approach, would be to first capture kittens in the wild and hand raise them for use as breeding stock. Data collected during radio-telemetry studies in south Florida indicate that if a female loses a litter, she will recycle and produce a second (Belden, unpublished data). By taking an entire litter of kittens for use in the captive-breeding program, the wild female should produce a second litter resulting in very little impact on the resident population. Experts familiar with captive breeding of large cats will be consulted for advice on all aspects of the captive breeding program.

3211. The primary captive-breeding facilities will be built at White Oak Plantation.

Even though the primary breeding facilities will be maintained at White Oak Plantation, consideration may be given to establishing a second program elsewhere. Not only might this provide for an enhanced level of overall safety to the captive-breeding effort, it may also allow for differences in breeding techniques and approaches to be tested and evaluated, possibly resulting in a significant saving of time. Two or three wild-caught female panthers from a non-endangered panther subspecies will be obtained and moved to the White Oak Plantation. The non-endangered female panthers will be bred to the male Florida panther already in captivity.

322. Offspring obtained from the Florida panther and non-endangered panther matings will be conditioned for release into the wild.

Offspring will be conditioned for release into the wild by placing them and their mothers in large pens where the kittens will learn to make kills and survive on their own. The necessary conditioning facilities will be built at White Oak Plantation. The captive-bred offspring will be surgically sterilized, radio-instrumented, and moved to the conditioning facilities with their mothers at approximately six months of age. The mothers will remain with the offspring while they learn to hunt and feed themselves.

323. The feasibility of re-establishing panther populations with captive-raised animals will be determined.

The conditioned captive-raised offspring will be transferred into a previously determined suitable wild area and monitored daily for at least one year. At the end of the one year evaluation period the captive raised offspring will be recaptured and removed from the wild.

324. Captive-raised panthers will be used to supplement existing populations where necessary.

If it is determined that captive-raised panthers can be successfully reintroduced into the wild, they can be used to supplement existing populations where necessary. The feasibility of these supplementations would have to be determined on a case by case basis. They would generally be in areas where sufficient resources were available to support a higher panther population, but recruitment was unable to provide the natural increase.

33. Determine the feasibility of using translocated wild panthers in the re-establishment of Florida panther populations.

The only work done to date where panthers were translocated from one area to another is that of McBride (1977), in which eight panthers were translocated from the desert mountains of the Trans-Pecos to a flat subtropical area of south Texas. Transmitter failure resulted in the almost immediate loss of three, but conclusive data were obtained from the remaining five. The

transplanted panthers adapted easily to the new terrain, even though it contrasted greatly to their previous habitat. If this technique works and surplus Florida panthers are available, it would be the easiest and most economical method of re-establishing populations.

331. Three wild-caught adult females and two wild-caught adult males from a non-endangered subspecies will be obtained and transferred to Florida.
 332. These animals will be surgically sterilized, fitted with radio-transmitter collars, and release into suitable wild areas.
 333. These animals will be monitored daily for at least one year.
 334. At the end of the evaluation period, the translocated non-endangered subspecies will be recaptured and removed from the wild.
34. Properly conditioned Florida panthers will be introduced into the wild if determine feasible.

When the best alternative is determined, the appropriate Florida panthers can be captured for translocating or use in the captive-breeding program. Properly conditioned Florida panther stock can then be introduced into suitable habitat and monitored to evaluate the success of the reintroduction.