Improving Prospects for the Florida Panther

by Deborah Jansen and
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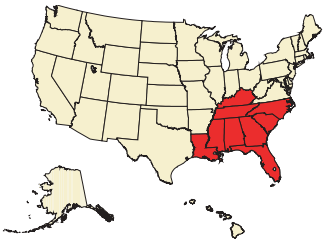

Florida panther cubs
Photo by Deborah Jansen/NPS

This country's big wildcat—called a puma or mountain lion or panther *(Puma concolor)* in different regions—is common in some units of the National Park System west of the Mississippi River. However, it was thought to be extinct in the eastern United States and was listed by the U.S. Fish and Wildlife Service as endangered throughout its eastern range in 1967 under the precursor to the Endangered Species Act. In the 1970s, successful searches by the Florida Fish and Wildlife Conservation Commission for the southeastern subspecies, the Florida panther *(Puma concolor coryi)*, gave hope that a viable remnant population remained in southern Florida.

Scientific evidence soon confirmed that the vast and nearly roadless Florida Everglades and Big Cypress Swamp were the last strongholds where panthers survived. Everglades National Park and Big Cypress National Preserve (Big Cypress) secure more than 2 million acres (0.8 million hectares) where the Florida panther faces relatively few human impacts.

Habitat loss is a major reason why many species, including the panther, are endangered; however, genetic and demographic consequences of a small population size also have significant effects. Surveying and monitoring in and around these two parks in the 1970s and 1980s revealed the presence of few panthers. Those remaining were compromised by inbreeding and consequently the loss of genetic variation. A genetic bottleneck resulted in a prevalence of innocuous characteristics such as a "cowlick" or a whorl of hair on the animal's back and a "kink" or fusion of bones at the end of the tail. More importantly, unhealthy traits, such as heart defects, abnormal sperm, immune deficiencies, and overall loss of reproductive vigor, were also present. Panthers appeared to be hanging on but in poor health, and their numbers were not increasing despite protection of the cats and a portion of their remaining habitat.

In 1991, scientists recommended improving the gene pool by releasing healthy individuals from a western subspecies to mate with panthers in south Florida (Seal 1991). Consequently, in partnership with the Florida Panther Interagency Working Group (formerly the Florida Panther Interagency Committee)—whose members are the Florida Department of Environmental Protection, the Florida Fish and Wildlife Conservation Commission, the National Park Service (NPS), the South Florida Water Management District, the Fish and Wildlife Service, and the U.S. Forest Service—Everglades National Park and Big Cypress became focus areas for the genetic restoration of the Florida panther. Eight female mountain lions of the subspecies *P. c. stanleyana* were captured in Texas and brought to southern Florida in 1995. Two were released into Everglades National Park and four into Big Cypress. The other two were released in Fakahatchee Strand State Preserve. Five of the eight females have produced 17 known first-generation progeny sired by male Florida panthers and at least 23 second-generation progeny (Darrell Land, Florida Fish and Wildlife Conservation Commission, Naples, Florida, personal communication).

Everglades National Park
Photo by Richard Frear/NPS

The physical characteristics, vigor, and productivity of the *P. c. coryi* x *P. c. stanleyana* intercrosses suggest that the negative effects of inbreeding in the Florida panthers of the 1970s are being remedied. Few of the intercross offspring have had a cowlick or kinked tail. Preliminary analysis of sperm quality and female productivity from a small number of these animals suggests the frequency of harmful traits may be decreasing. Further, the panther population in Big Cypress has shown a recent increase, likely because of the genetic restoration program. Only one male was found in the 540,000-acre (216,000-ha) study area when the NPS initiated work in Big Cypress in 1989, but 21 panthers of both sexes were present during 2000. The Texas cats now have third-generation progeny occupying previously vacant habitats. Throughout south Florida, between 60 and 70 panthers are now estimated to occur (McBride 2000).

The preservation of sufficient suitable habitat for this increasing population is another critical element of panther recovery. Habitat purchases have included the Florida Panther National Wildlife Refuge, a 26,500-acre (10,700-ha) area, established in 1989. An additional 146,000 acres (58,400 ha) of prime panther habitat came under the jurisdiction of Big Cypress in 1996. Another 110,000 acres (44,000 ha) are being acquired to enlarge Everglades National Park, as well as 35,000 acres (14,170 ha) to protect the Okaloacoochee Slough. Previously acquired public land containing panther habitat includes Corkscrew Swamp Sanctuary (1954) and Fakahatchee Strand State Preserve (1974).

An estimated one million acres (0.4 million ha) of significant panther habitat in southern Florida are privately owned. Urban and agricultural demands for these lands continue to diminish the acreage usable by the panther. Consequently, the key to the long-term survival of the Florida panther depends on the proper management of public conservation lands coupled with effective methods to work cooperatively with landowners to conserve panther habitat on private lands.

As a multiple use area, Big Cypress allows hunters to harvest white-tailed deer (*Odocoileus virginianus*) and feral hogs (*Sus scrofa*), which are the two main prey items of the panther. The NPS and the Florida Fish and Wildlife Conservation Commission have regulated the harvest of game through quota restrictions, antler length limits, prohibition on dog use, and harvest reporting compliance since the mid-1980s. The NPS has removed undeeded backcountry camps and restricted the use of off-road vehicles. It does not appear that the ability of panthers to secure adequate food has been compromised by the current deer and hog harvest by hunters.

Big Cypress has intensified its work for the future of the Florida panther by funding a special team to radio-collar more panthers. The team will complement existing study efforts being conducted by the Florida Fish and Wildlife Conservation Commission and the U.S. Fish and Wildlife Service. It will also help to maintain an adequate sample of study animals for the continuing assessment of natural and human-caused impacts and to guide further management decisions.

Implemented through a collaborative approach to recovery among scientists and agencies, gene flow between the Texas and Florida subspecies improves the prospects for long-term survival of the Florida panther. While genetic restoration has been instrumental in increasing panther numbers and improving their health, cooperative management efforts are now vital to maintaining sufficient habitat and prey to ensure panther recovery.

Florida panther (with characteristic kinked tail, inset) at Big Cypress National Preserve
Photo by Deborah Jansen/NPS

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