

Florida Panther

Recovery Plan



Photo by Mark Lotz, Florida Fish and Wildlife Conservation Commission

3rd Revision

and outreach efforts will be evaluated, especially to assess human attitude and behavior changes toward panthers.

III. RECOVERY GOAL, OBJECTIVES, AND CRITERIA

Recovery Goal

The goal of this recovery plan is to achieve long-term viability of the Florida panther to a point where it can be reclassified from endangered to threatened, and then removed from the Federal List of endangered and threatened species.

Recovery Objectives

1. To maintain, restore, and expand the panther population and its habitat in south Florida and expand the breeding portion of the population in south Florida to areas north of the Caloosahatchee River.
2. To identify, secure, maintain, and restore panther habitat in potential reintroduction areas within the historic range, and to establish viable populations of the panther outside south and south-central Florida.
3. To facilitate panther recovery through public awareness and education.

Recovery Criteria

The quantitative criteria for the interim goal, reclassification, and delisting are based upon threats to the panther, PVAs, and the need to address representation, resiliency, and redundancy (Shaffer and Stein 2000 cited in National Marine Fisheries Service 2004). Representation is conserving the breadth of the genetic makeup of the species to conserve its adaptive capabilities. Resiliency is ensuring that each population is sufficiently large to withstand stochastic events. Redundancy is ensuring a sufficient number of populations to provide a margin of safety for the species to withstand catastrophic events.

Kautz et al. (2006) developed population guidelines based on the results of the previous Florida panther PVA (i.e., Root 2004). Following these guidelines, populations of greater than 240 have a high probability of persistence, low probability of extinction over 100 years, are able to retain 90% of their heterozygosity (representation), and can tolerate some habitat loss or mild catastrophes. Populations within the 80 to 100 range are likely stable with a low probability of extinction for 100 years, have slowly declining heterozygosity, and are vulnerable to habitat loss or catastrophes. According to Root (2004), these models indicate that unless we are able to safeguard the current condition, amount, and configuration of the occupied panther habitat, the long-term viability of the panther is not secure. In addition, Kautz et al. (2006) suggests that unavoidable losses in the Primary Zone should be offset by habitat restoration or enhancement of habitat elsewhere in the Primary Zone, thereby increasing the functional value and carrying capacity of the remaining habitat. As a result, it is clear that conservation strategies should be used to maximize protection and restoration, if needed, in the Primary Zone. The south Florida panther population, which documented panther counts suggest is roughly 100 - 120 individuals,

is obviously the foundation for all efforts to expand and/or reintroduce panthers into other parts of the species' historic range. We have seen the panther population increase since the genetic restoration effort, and protecting and maintaining habitat in the appropriate configuration to support a stable population is a necessary component of recovery efforts in the future.

PVA models are no better than the data upon which they are based, and it cannot be overemphasized that the Root (2004) basic models assume no difficulties in finding mates, no additional human-induced mortality, and no intermittent catastrophic events. In addition, aside from the 25% habitat loss variation that approximates the loss of all privately owned land in the Primary Zone, the Root (2004) models assume that there was no change in amount, quality, or configuration of habitat during 100 years of simulation. Since many of these unrealistic assumptions represent a significant departure from conditions in south Florida and the Southeast, recovery criteria need to include more than one population (resiliency and redundancy) to safeguard against habitat loss (a major threat) and stochastic catastrophic events (e.g., disease outbreaks or major hurricanes). It is difficult to predict the extent to which future catastrophic events will impact the panther. However, two viable populations would be sufficient for reclassification and three viable populations would provide an adequate margin of safety for full recovery. Meeting these criteria would indicate that threats are ameliorated, the panther is sufficiently genetically represented, and its security is achieved through resiliency and redundancy.

A. Reclassification to Threatened

Reclassification will be considered when:

1. Two viable populations of at least 240 individuals (adults and subadults) each have been established and subsequently maintained for a minimum of twelve years (two panther generations; one panther generation is six years [Seal and Lacy 1989])..
2. Sufficient habitat quality, quantity, and spatial configuration to support these populations is retained / protected or secured for the long-term.

A viable population, for purposes of Florida panther recovery, has been defined as one in which there is a 95% probability of persistence for 100 years. This population may be distributed in a metapopulation structure composed of subpopulations that total 240 individuals. There must be exchange of individuals and gene flow among subpopulations. For reclassification, exchange of individuals and gene flow can be either natural or through management. If managed, a commitment to such management must be formally documented and funded. Habitat should be in relatively unfragmented blocks that provide for food, shelter, and characteristic movements (e.g., hunting, breeding, dispersal, and territorial behavior) and support each metapopulation at a minimum density of 2 to 5 animals per 100 square miles (259 square kilometers) (Seidensticker et al. 1973, Logan et al. 1986, Maehr et al. 1991a, Ross and Jalkotzy 1992, Spreadbury et al. 1996, Logan and Sweanor 2001, Kautz et al. 2006), resulting in a minimum of 4,800 – 12,000 square miles (12,432 – 31,080 square kilometers) per metapopulation of 240 panthers. The amount of area needed to support each metapopulation will depend upon the quality of available habitat and the density of panthers it can support.

B. Delisting

Delisting will be considered when:

1. Three viable, self-sustaining populations of at least 240 individuals (adults and subadults) each have been established and subsequently maintained for a minimum of twelve years.
2. Sufficient habitat quality, quantity, and spatial configuration to support these populations is retained / protected or secured for the long-term.

For delisting, exchange of individuals and gene flow among subpopulations must be natural (i.e., not manipulated or managed).

C. Interim

Due to the challenging nature of attaining the recovery criteria, an interim recovery goal has been established to assist in determining progress towards the ultimate goals of reclassification and delisting.

This interim goal is to achieve and maintain a minimum of 80 individuals (adults and subadults) in each of two reintroduction areas within the historic range and to maintain, restore, and expand the south / south-central Florida subpopulation.

The interim goal will be met when:

1. The south / south-central Florida panther subpopulation has been maintained, restored, and expanded beyond 80 to 100 individuals (adults and subadults).

2. Two subpopulations with a minimum of 80 individuals each have been established and maintained within the historic range.
3. Sufficient habitat quality, quantity, and spatial configuration to support these three subpopulations is retained / protected or secured for the long-term.

There must be exchange of individuals and gene flow among these subpopulations. This exchange of individuals and gene flow can be either natural or through management.