Government Efforts to Protect Habitat for the Florida Panther on Private Lands1

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Introduction
This document provides a brief overview of existing regulatory and voluntary approaches used by federal, state, and local government agencies to assist in Florida panther conservation on private lands.

Listed as endangered in 1967 under the Endangered Species Act (ESA), the Florida panther currently exists as a single breeding population in south Florida (Main et al. 2004; USFWS 2008; Van de Kerk et al. 2015) (Figure 1). The panther utilizes state and federal lands (e.g., the Florida Panther National Wildlife Refuge, the Big Cypress National Preserve, the Okaloacoochee Slough State Forest, and the Audubon Corkscrew Swamp Sanctuary). However, because panthers are a wide-ranging species, the amount of habitat available on public lands is insufficient for species recovery efforts. The 2008 Panther Recovery Plan by the US Fish and Wildlife Service (USFWS) requires that habitat for the panther be conserved on both public and private lands throughout Florida (Kautz et al. 2006; Thatcher et al. 2009; USFWS 2008). Private rangelands in southwest and south central Florida provide important habitat and prey for the Florida panther (Pienaar and Rubino 2014; Pienaar et al. 2015). These lands also play a key role in conserving other native species (e.g., gopher tortoises, bob white quail, turkeys, deer, vultures, scrub jays, cranes, black bears, and bobcats).

Figure 1. Current panther range and predicted expansion area on lands south and north of the Caloosahatchee River.

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Unfortunately, these rangelands are under increasing development pressure as the human population in Florida continues to grow. Between 2010 and 2014 the Florida human population increased by 5.8% (which is higher than the national average of 3.3%). In 2014, Florida surpassed New York as the third most populous state in the United States. Multiple policy approaches have been put in place by local, state and federal governments to address habitat loss on private lands and to secure natural resources in Florida. Below we outline programs that assist in panther conservation efforts.

**Regulatory Approaches for Conserving Habitat**

There are laws that help protect wildlife in Florida (Schaefer et al. 2012). The ESA is one important regulatory approach that helps protect species that are at a high risk of going extinct (USFWS 2013). The USFWS is responsible for determining which species are at risk of extinction, and authorizes the listing of these species as either Endangered or Threatened under the ESA.

According to ESA Section 9, the USFWS can intervene if land-use changes will negatively impact panther habitat to the extent that the panther’s ability to breed, hunt, or find shelter is undermined. Land-use changes that negatively impact panther habitat are classified as *incidental take* under the ESA. Landowners who require federal permits to develop or convert lands, or who receive federal funds, must obtain an *incidental take permit* from the USFWS (under ESA Section 7). The incidental take permit is provided if a plan to *mitigate habitat loss* is developed to offset loss of habitat associated with the land-use change or development project. Mitigation actions typically include the permanent protection of habitat (that is of equal value to the panther) in another location (in exchange for the loss or conversion of habitat to development, mining, or other uses that do not support panther conservation).

The USFWS uses the Panther Habitat Assessment Methodology to determine how much mitigation is required for land-use changes in the Panther Focus Area, which is the documented breeding range for the Florida panther (i.e., lands south of the Caloosahatchee River) (FWC 2010).

**Panther Habitat Assessment Methodology**

The USFWS developed the Panther Habitat Assessment Methodology to calculate the ecological value of panther habitat in the Panther Focus Area (Kautz 2006; USFWS 2008). Within the Panther Focus Area, four zones (primary, dispersal, secondary, and other) were identified and assigned a value based on how important the lands are for panther conservation (Figure 2). The primary and dispersal zones are the most important lands for panther conservation (and are assigned a value of 1). The secondary zone is assigned a value of 0.69, and the other zone is assigned a value of 0.33. This means that 1.45 acres of habitat in the secondary zone (or 3 acres of habitat in the other zone) should be protected to offset the loss of one acre of the same habitat in the primary or dispersal zones.

Each habitat is also assigned a value, from zero (lowest quality habitat, e.g., urban land) to 10 (highest quality habitat, e.g., pineland forest). Based on these metrics, Panther Habitat Units (PHUs) are calculated for each acre of land in each zone in the Panther Focus Area. Developers and landowners who require a federal permit to convert panther habitat to other uses must secure and permanently protect habitat with an equal PHU value elsewhere in the Panther Focus Area.

**Mitigating Habitat Loss to Obtain an Incidental Take Permit**

Landowners and developers can mitigate habitat loss each time they require an incidental take permit by purchasing land and putting it in permanent protection for the panther. Alternatively, they can implement a larger-scale Habitat Conservation Plan (HCP), or purchase credits from a Habitat Conservation Bank (HCB).
A Habitat Conservation Plan (HCP) is a legal document that describes how the landowner will mitigate for habitat conversion or loss, and how mitigation will be funded. Typically, a HCP applies to a large area of land and can apply to multiple species. For example, the proposed Eastern Collier Multiple Species Habitat Conservation Plan (ECMSHCP) would apply to 152,124 acres of land in northeastern Collier County, Florida, and would provide a 50-year incidental take permit for the Florida panther and seven other ESA-listed species (Florida scrub-jay, Audubon's crested caracara, wood stork, red-cockaded woodpecker, Everglade snail kite, eastern indigo snake, and Florida bonneted bat). The HCP would also cover the gopher tortoise, the burrowing owl, eastern diamondback rattlesnake, Florida sandhill crane, little blue heron, Southeastern American kestrel, tricolored heron, and the Big Cypress fox squirrel.

Participants in an HCP will enroll part of their land in a permanent conservation easement program or purchase land to use for habitat conservation (USFWS 2011). Once the HCP has been reviewed and approved by the USFWS, an incidental take permit is issued. The advantage of the HCP to landowners is that it provides certainty in planning (for the species included in the HCP). Once a permit is provided, landowners are assured that they will not be required to engage in any additional conservation related to the species that are the focus of the HCP, provided that they comply with the original HCP, permits, and associated documents. This is referred to as the “no surprises” policy, a regulatory assurance that reduces the costs of habitat conservation to landowners, in particular the costs of uncertainty and regulatory costs. The certainty provided by the HCP is a key reason why landowners and developers will apply for and develop an HCP. Certainty allows for planning of future business activities to maximize profits. The disadvantage of the HCP process is that it is complex and time consuming and requires multiple stages of review.

Landowners who are not interested in applying for a HCP can purchase credits, or PHUs, from a Habitat Conservation Bank (HCB). HCBs are privately owned properties that protect, restore, and manage strategically important Florida panther habitat in perpetuity. HCBs are owned by entrepreneurs who have put these lands into a conservation easement. The USFWS determines what the PHU value of the bank is, and the owner is able to sell these PHU credits to individuals, who must mitigate for habitat conversion. The money earned from selling the credits is used to manage the property for the panther, and to invest in additional HCBs. Conservation banking can help establish wildlife reserves and enhance habitat connectivity, which is important for panther recovery (USFWS 2003).

Three conservation banks have been finalized within the panther’s breeding range. These include the Florida Panther Conservation Bank I (1,920 acres), the Florida Panther Conservation Bank II, (additional 472 acres), and the Panther Passage Conservation Bank (4,000 acres) (Kreye and Pienaar 2015).

**Mitigating Habitat Loss through Local Government Regulations**

Although not specifically designed to protect panthers, local ordinances and zoning rules have been used to control land use change in Florida, and may benefit the panther.

In 2007, a Tradable Development Rights (TDR) program was approved by Collier County as part of the county’s growth management plan. In a TDR program, lands are designated as “sending” or “receiving” areas. Land use in the sending areas is restricted to certain activities (e.g. agriculture), and the development rights attached to that land are sold to landowners in the receiving areas where development is permitted (Kaplowitz et al. 2008; Machemer and Kaplowitz 2002; McConnell et al. 2003). This allows developers to increase development density on land in the receiving areas (through the purchase of additional development rights), while ensuring that lands in the sending areas are kept as agricultural lands and wildlife habitat. Landowners in the sending areas are compensated for the restrictions on their land use by the income they receive from selling the development rights attached to their lands.

The Collier Rural Land Stewardship Area (RLSA) is a TDR program that assists in panther habitat conservation (RLSA 2015). The trading area is distributed across 195,000 contiguous acres surrounding the town of Immokalee, FL, and includes the designation of 2,300 acres as wildlife corridors, which are utilized by the Florida panther.

**Voluntary Approaches to Conserving Habitat on Private Lands**

**Safe Harbor Agreements**

Landowners are generally resistant to actions that encourage ESA listed species to utilize their lands out of concern that the USFWS will increase restrictions on how they may use their land (Wilcove and Lee 2004). One way to encourage landowners to conserve habitat is to remove the
risk of regulation under the ESA through the provision of Safe Harbor Agreements (SHAs). The USFWS agrees to not regulate landowners who manage their lands for ESA-listed species if the landowner maintains the population of the species or species habitat at a designated baseline (Wilcove and Lee 2004). For more information about Safe Harbor Agreements see Safe Harbor Agreement: A Regulatory Assurance under the Endangered Species Act.

In 2014, the Florida Panther Recovery Implementation Team (FPRIT) proposed that a panther SHA be made available north of the Caloosahatchee River (in the panther expansion range). The proposed SHA would be based on habitat conserved, rather than number of panthers. The baseline habitat quality would be quantified using PHUs. Under this agreement, landowners would not be subject to regulations if they maintained the PHU value of their property at the baseline. The FPRIT has put a hold on the development of the SHA program at this time, focusing instead on a payment program (Kreye and Pienaar 2015).

**Payment for Ecosystem Services (PES)**

Payment for ecosystem services (PES) is a relatively new policy approach in the United States and provides landowners with direct payments for the environmental benefits produced through good land stewardship (Ferraro and Kiss 2002). In 2014, the USFWS proposed a pilot PES program (funded through the 2006 Partners for Fish and Wildlife Act) that would provide cattle producers in south Florida with payments for managing habitat for panthers on private rangelands (FPRIT 2014).

The pilot program focuses on habitat conservation in the primary and dispersal zones within the Panther Focus Area. Cattle ranchers would receive a per-acre payment for habitat enrolled in the program in return for engaging in land-management practices that improve or maintain panther habitat. Payment levels are dependent on habitat quality and the prescribed management activities. The program would be implemented over a five-year period, providing the USFWS with time to further refine the program and to explore other panther conservation incentives and programs.

In 2016, the Natural Resource Conservation Service (NRCS) agreed to provide $630,000 to fund this pilot program through their Regional Conservation Partnership Program (RCPP).

**References Cited**


