



Landowner's Guide to the
Florida Panther
Payment for Ecosystem Services Pilot Program



September 2024

Program Overview

The Florida Fish and Wildlife Conservation Commission's (FWC) Florida Panther Payment for Ecosystem Services (PES) Pilot Program rewards private landowners for maintaining and improving Florida panther habitat on their property. The program benefits both private landowners and the panther population by providing per-acre payments for habitat conditions that support panther conservation and landscape connectivity.

Development pressures and other causes of habitat loss threaten the important panther habitat found on Florida's rural and working lands. The FWC recognizes that private landowners, particularly those who engage in beneficial land management practices like rotational grazing and low-intensity agriculture, are essential partners in panther conservation. The program is one of the ways the FWC is working to build relationships with private landowners and implement innovative conservation programs that provide tangible benefits, like financial and professional resources that support mutual habitat management objectives.

The FWC is making annual payments to landowners who have panther habitat of high conservation priority. Program features include optional opportunities for landowners to coordinate with the FWC to monitor panthers on their property and receive additional payments for evidence of panther use. Information is also being offered on land management techniques to benefit wildlife, livestock depredation mitigation, and other topics.

Enrollment is competitive based on the location, amount, and quality of panther habitat provided as well as available funding, which is currently provided by the National Fish and Wildlife Foundation, U.S. Fish and Wildlife Service, Fish and Wildlife Foundation of Florida, and FWC. If eligibility and priority criteria are met, FWC staff assess site conditions with the landowner to evaluate habitat quality and provide land management recommendations. Participating landowners agree to manage part or all of their property in a way that benefits panther habitat and allow FWC staff access for annual habitat monitoring visits coordinated with individual landowners.

The program helps to realize objectives in the FWC's Florida Panther Conservation Plan, which include utilizing incentives to maintain panther habitat on private lands and supporting natural range expansion of the panther population. While Florida panthers are the primary focus of the program, it provides benefits to varied species, such as white-tailed deer, Florida black bears, and others that depend on the mosaic of habitats used by panthers.

Program Process

1. Interested landowners complete an application during the enrollment period (assistance available upon request by emailing PES@MyFWC.com)
2. FWC staff review applications and GIS data to determine eligibility
3. For eligible properties, staff coordinate a site visit with the landowner
4. Staff conduct a habitat assessment of the candidate acreage (can be all or part of a property)
5. Staff determine the score for each candidate area, then rank them for enrollment
6. Selected applicants receive a report on the enrolled area, scoring, and payment rate
7. A 3-year program contract between the landowner and FWC is established
8. Initial payment is made to the landowner; subsequent payments are made annually
9. At the end of each contract year, staff conduct a monitoring site visit
10. Staff verify habitat conditions and determine whether changes affect scoring or payment

Panther Space and Habitat Use

Florida panthers occur at low densities and require large home ranges to meet their needs. Adult males are territorial and overlap their home ranges with those of several adult females. Males disperse long distances to establish home ranges and increase breeding opportunities.

The panther has adapted to a variety of ecosystems and can be found in forested uplands, prairie grasslands, cypress swamps, and areas dominated by sawgrass. Panthers rely on a mosaic of habitats: forested cover and dense vegetation for resting and denning, forest edges for ambushing prey, and open areas like grasslands and wetlands for nocturnal movement and predation opportunities. Forested habitats are of vital importance. Panthers use forest patches of any size, often within a matrix of open habitats. Wild prey availability is also a critical factor influencing panther habitat use.

Panther Habitat Model

Habitat suitability modeling can identify important areas for panthers and inform conservation efforts. The University of Florida previously analyzed panther, landscape, and ranching variables to develop a nocturnal panther habitat model for private lands in southwest Florida. The FWC updated this model with recent landcover data and expanded the scope north of the Caloosahatchee River. The updated model is used to identify areas of high suitability for panthers and prioritize properties for PES program enrollment.

Conserving large areas with diverse habitats for panthers has the potential to benefit numerous other species, which is why panthers are considered an "umbrella species."

Program Eligibility

Landowners who meet the following criteria are eligible for the PES program. Eligibility does not guarantee program enrollment, which is a competitive process. Enrollment decisions are made by FWC staff with a focus on conserving key panther habitats and dispersal corridors.

Property Attribute	Eligibility Criteria
Land Ownership	Owned by a non-governmental entity (e.g., private individual, company, or LLC) or American Indian Tribe for private or commercial use
Geographic Region	Within Broward, Charlotte, Collier, DeSoto, Glades, Hardee, Hendry, Highlands, Hillsborough, Lee, Manatee, Miami-Dade, Monroe, Okeechobee, Osceola, Polk, or Sarasota County AND Within 2 miles of Florida Ecological Greenways Network (FEGN) Priority 1–3 lands
Acreage	At least 500 contiguous acres of enrollable land: All, or only part, of a property may be enrolled
Habitat Conditions	Contains areas of high suitability as identified by the panther habitat model AND Contains native forest and open habitat: Minimum 10% native forested cover AND Maximum 70% open habitat WITH At most 25% dominated by invasive plants

Properties with more than one landowner are viewed as a single landowner group, and only one member of the group may submit an application. Lands in conservation easements are considered eligible if the purpose of the easement does not conflict with that of the PES program, and if the easement is not or was not meant to mitigate loss of wildlife habitat.

Limited exceptions to eligibility criteria may be made for private lands that are determined to be essential to the panther population (e.g., FEGN Priority 1 lands, areas of confirmed panther use, or areas identified by least-cost path modeling).

Habitat Assessment

FWC staff coordinate with eligible applicants to conduct a habitat assessment of their candidate acreage during a site visit. The assessment provides a measure of panther habitat quality and offers benchmarks for improving habitat conditions and increasing scores.

The property's proximity to the Florida Wildlife Corridor (i.e., FEGN Priority 1–3 lands) and panther presence are evaluated and scored prior to the site visit. During the property visit, staff assess habitat conditions at random sampling sites across the candidate area. These sites are classified as either Forested or Open habitat. At a minimum, three Forested and three Open sites are evaluated. Additional sites may be assessed in proportion to the acreage of each habitat type. For the PES program, definitions of these habitat types are:

Forested Habitat: Upland (e.g., pineland, hardwood hammock, cabbage palm-live oak hammock) or wetland (e.g., cypress swamp, cypress/pine/cabbage palm) habitats dominated by trees. Citrus groves and monocultures of invasive woody plants are not eligible for enrollment.

Open Habitat: Rangeland (with/without improved pasture grasses [e.g., bermudagrass, bahia grass, limpo grass]), grassland, wet prairie, marsh (e.g., freshwater, sawgrass, cattail), or shrub-swamp (e.g., willow, wax myrtle) habitats lacking significant canopy cover. Includes scattered patches of saw palmetto and shrubs. Row crops are not eligible for enrollment.

At Forested sampling sites, forested cover, midstory cover, and invasive plants are assessed and scored. At Open sampling sites, open habitat and invasive plants are assessed and scored. The invasive plant category evaluated at each site refers to any woody non-herbaceous Florida Invasive Species Council Category I or II plant (e.g., Brazilian pepper, melaleuca, Australian pine, earleaf acacia) or cogongrass.

Once all sampling sites have been evaluated, the scores within each category type are averaged to calculate the area-wide category scores for forested cover, midstory cover, open habitat, and invasive plants. Those area-wide scores are added to the corridor proximity and panther presence scores to calculate the final score for the candidate acreage. A maximum of 45 points can be earned.

See the following habitat assessment table, which contains the evaluation elements and scoring criteria for each category. Maximum points for each criterion are in parentheses.

Category	Evaluation Elements	Scoring Criteria (max. points)
<p>Corridor Proximity of enrolled area</p>	<p>Property's proximity to FEGN Priority 1-3 lands</p>	<p>Located within FEGN Priority 1 lands (8)</p> <p>Located within FEGN Priority 2-3 lands (4)</p> <p>Located within 2 mi of FEGN Priority 1-3 lands (2)</p>
<p>Panther Presence on enrolled area</p>	<p>Panther activity documented in ≤ 3 years</p>	<p>Presence confirmed via wildlife camera, telemetry, or depredation event (5)</p>
<p>Forested Cover at Forested sites</p>	<p>% of site that is native forested cover AND Vegetation structure and composition*</p>	<p>60-90% is native forested cover (10)</p> <p>>90% is native forested cover (7)</p> <p>25-59% is native forested cover (4)</p> <p>10-24% is native forested cover (2)</p>
<p>Midstory Cover at Forested sites</p>	<p>% of site with 5-10 ft midstory canopy height AND Vegetation structure and composition*</p>	<p>25-50% has 5-10 ft midstory height (10)</p> <p>5-24% has 5-10 ft midstory height (6.5)</p> <p>>50% has 5-10 ft midstory height (3)</p>
<p>Open Habitat at Open sites</p>	<p>% of site that is native open habitat AND Vegetation structure and composition*</p>	<p>>75% is native open habitat (8)</p> <p>50-75% is native open habitat (4)</p> <p><50% is native open habitat (2)</p>
<p>Invasive Plants at all sites</p>	<p>% of site dominated by invasives</p>	<p><10% dominated by invasives (4)</p> <p>10-25% dominated by invasives (2)</p>

* Secondary evaluation element. Within each scoring criterion, assignment of points may vary according to these or other wildlife habitat attributes.

Ranking and Payment Rates

Following the enrollment period, program staff review all scores and rank candidate areas for enrollment. Selected applicants receive a report containing a map of the enrolled acreage, habitat assessment results, scoring details, payment calculations, and management recommendations for the property. Landowners are encouraged to review the report and discuss it with staff before proceeding to contract review (see next page).

The enrolled area's total habitat assessment score corresponds to a habitat quality tier, which determines the payment rate. Payment is made to the landowner on an annual basis. Payment rates were developed with stakeholder input and are subject to change based on factors such as funding availability, stakeholder feedback, and program outcomes.

Habitat Assessment Score	Habitat Quality Tier	Payment Rate
36 – 45	1	\$17 per enrolled acre
24 – 35	2	\$12 per enrolled acre
12 – 23	3	\$7 per enrolled acre

Example: A score of 27 equates to Tier 2 and \$12 per enrolled acre. An owner of 4,000 enrolled acres will receive a payment of \$48,000 each year their acreage scores within Tier 2.

Bonus Payments

Landowners can receive an additional \$0.50 per enrolled acre for allowing FWC staff to place one or more wildlife cameras. This flat rate bonus is added to the annual payment amount. All participants are eligible for one FWC camera. One additional FWC camera may be placed per 1,000 acres of enrolled forested habitat. Allowing more than one FWC camera does not affect the bonus rate but could increase opportunities to receive image payments (see below). After installing cameras, staff coordinate property access with landowners to change memory cards, replace batteries, and trim obscuring vegetation approximately every other month.

Additionally, monthly payment is made for each dated, timestamped, and georeferenced panther image: \$100 per male or undetermined sex, \$250 per female, and \$500 per litter of kitten(s). Unless of identifiably unique individuals, images of the same type must be at least 30 days apart to qualify. Images may be from either FWC's or the landowner's camera(s).

Example: An owner of 4,000 enrolled acres containing 2,500 forested acres is limited to three FWC cameras. They will receive a payment of \$50,000 each year their acreage scores within Tier 2 and they allow at least one FWC camera. Panther image payments are supplemental.

Program Agreement

The final step in the enrollment process is the establishment of a program contract between the landowner and FWC. The contract is a three-year agreement that provides the terms and conditions of program participation. Landowner responsibilities under the contract include agreeing to maintain or improve the quality of the enrolled area for panthers, notify the FWC of land ownership or habitat changes, and allow periodic property access.

Once the contract is agreed-upon and executed, initial payment is made to the landowner. Subsequent payments are made annually following a monitoring site visit.

Monitoring and Outcomes

On an annual basis, FWC staff complete a monitoring site visit to assess landowner fulfillment of the agreed-upon program terms and conditions. Verification of habitat conditions on the enrolled acreage, using the same scoring system as in the initial habitat assessment, is the main objective. Staff document management activities, land-use changes, and land cover changes that occurred in the enrolled area since the previous assessment, then determine whether changes result in an increase or decrease in scoring and payment rate. Staff can also provide recommendations for improving scores in each habitat category. Failure to continue to meet the basic eligibility criteria and minimum scoring requirements may result in termination of the contract and cessation of additional payments.

Staff additionally assess program outcomes on a regular basis and modify the program as needed to maximize effectiveness. Outcomes to evaluate include landowner satisfaction, economic impact, benefit to the panther population, and wildlife corridor protection.

Additional Opportunities

In addition to the technical assistance provided as part of the PES program, FWC staff can connect interested landowners with other resources and programs, such as cost-share assistance and easements, that can be combined with PES payments to help offset the costs of land management and conservation.

Outreach is being offered throughout the program area on topics including rangeland habitat management, livestock depredations, and panther biology and conservation.

Increased opportunities for voluntary involvement with panther research and monitoring may also be available to some program participants.

Visit [MyFWC.com/PESPanther](https://myfwc.com/PESPanther) for additional information.