

How conserving a species works: A look into the Florida Panther Recovery Plan (Third Revision) by U.S. Fish and Wildlife Service (FWS)

Big cat conservation has been in the news quite a lot recently. In the Everglades, big cat conservation is especially important for one of the most at risk species in the world. Have you ever wondered exactly how wildlife conservation works? Learn more about the efforts to save the Florida panther.

The Florida panther is Florida's state mammal and is the last subspecies of *Puma* still surviving in the eastern United States. It is listed as **endangered**, a species "in danger of extinction throughout all or a significant portion of its range". These species are rare to find and are top priority for wildlife conservationists to save. This video explains what has caused the Florida panther's overall decline, primarily from humans and habitat loss:

https://www.youtube.com/watch?v=X7f_J4DniSo&t=46s

But, that is not to say humans have not taken action to reduce their impact on the panthers' survival in the Florida Everglades. In fact, as a product of the collaboration of various recovery teams, contractors, state agencies, and others, the Florida Panther Recovery Plan (Third Revision) was created and published in 2008 by the U.S. Florida Fish and Wildlife Service (FWS). The goal of this detailed recovery plan is to achieve long-term viability of the Florida panther in its wild habitat in the Everglades. With the dedication of many entities involved in the creation of this plan, it is clear how important recovery is for the Florida panther.

Directions:

Have your students read the [Florida Panther Recovery Plan excerpt \(attached, pages 1-14\)](#):

After reading, have your students use their critical thinking and analysis skills to complete the student activity worksheet about the Florida Panther Recovery Plan. *Please keep in mind this article is intended for higher grade levels, however this activity may be adapted for younger grades.*

Standards: SC.5.N.2.1, LAFS.5.RI.1.3, SC.8. N.4.2, LAFS.8.RI.1.1, LAFS.8.RI.1.2

[Florida Panther Recovery Plan Worksheet](#) (attached below)

[Florida Panther Recovery Plan Answer Key](#) (attached below)

For additional information visit:

- FWS's Recovery Planning and Implementation Page:
<https://www.fws.gov/endangered/esa-library/pdf/RPI.pdf>
- FWS's ECOS Environmental Conservation Online System showing all wildlife species with Recovery Plans: <https://ecos.fws.gov/ecp0/reports/species-with-recovery-plans-report>

Everglades Literacy Connections:

Grade 5. Lesson 1 - Incredible Shrinking Habitat

<https://www.evergladesliteracy.org/fifth-grade>

-Students will become Florida panthers, white-tailed deer, and motor vehicles in an active, tag-like game to simulate the disappearance of Everglades habitat and its effect on native wildlife.



Name _____

Florida Panther Recovery Plan Worksheet

Directions: Read the Florida Panther Recovery Plan excerpt version (pages 1-14). After reading, use your critical thinking and analysis skills to complete the questions about the Florida Panther Recovery Plan.

1. Why do you think the Florida Panther Recovery Plan was created?

2. Looking at the list of Recovery Team members, how many different entities were involved in the creation of this plan?

- a) about 10
- b) about 5
- c) about 124
- d) about 40

3. Why do you think it is important to have numerous different entities work together to create one concise recovery plan?



Name _____

4. According to the document, what percent of the Florida panther’s historic habitat range are panthers currently restricted to?

- a) 17%
- b) 5%
- c) 12%
- d) 2%

5. In your own words, explain what the recovery strategy of the Florida Panther Recovery Plan is.

6. In your own words, explain what the recovery goal of the Florida Panther Recovery Plan is.

7. Looking at the recovery objectives in the document, list one objective and give an example of how you think officials working with the Florida Panther Recovery Plan would fulfill the objective. For example: Objective #3 “To facilitate panther recovery through public awareness and education.” To fulfill this objective, it would be beneficial to require any U.S. National Park stationed in Florida panther habitat to include Florida panther education in their programs to spread awareness to students and park visitors.



Name _____

8. Looking at the recovery criteria, explain how officials working with the Florida Panther Recovery Plan concluded that an ideal number for the Florida panther population is 240 individuals.

9. Explain what it means to delist the Florida Panther.

10. For how many years did the Florida Panther Recovery Plan include in their cost estimation?

- a) 5
- b) 15
- c) 12
- d) 3

11. List 3 things you learned about wildlife conservation and planning after reading the Florida Panther Recovery Plan (Third Revision) by U.S. Fish and Wildlife Service (FWS).

U.S. Fish and Wildlife Service

Florida Panther

Recovery Plan



Photo by Mark Lotz, Florida Fish and Wildlife Conservation Commission

3rd Revision

FLORIDA PANTHER RECOVERY PLAN

(Puma concolor coryi)

THIRD REVISION

Original Approval: December 17, 1981
First Revision Approved: June 22, 1987
Second Revision Approved: March 13, 1995

Prepared by

The Florida Panther Recovery Team

and

South Florida Ecological Services Office
U.S. Fish and Wildlife Service

for

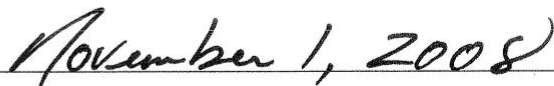
U.S. Fish and Wildlife Service
Southeast Region
Atlanta, Georgia

Approved:



Regional Director, U.S. Fish and Wildlife Service

Date:



DISCLAIMER

Recovery plans delineate actions which the best available science indicates are required to recover and protect listed species. Plans are published by the U.S. Fish and Wildlife Service (FWS), sometimes prepared with the assistance of recovery teams, contractors, State agencies, and others. Objectives will be attained and any necessary funds made available subject to budgetary and other constraints affecting the parties involved, as well as the need to address other priorities. Nothing in this plan should be construed as a commitment or requirement that any Federal agency obligate or pay funds in contravention of the Anti-Deficiency Act, 31 U.S.C. 1341, or any other law or regulation. Recovery plans do not necessarily represent the views or the official positions or approval of any individuals or agencies involved in the plan formulation, other than the FWS. They represent the official position of the FWS only after they have been signed by the Regional Director. Approved recovery plans are subject to modification as dictated by new findings, changes in species status, and the completion of recovery actions.

LITERATURE CITATION SHOULD READ AS FOLLOWS:

U.S. Fish and Wildlife Service. 2008. Florida Panther Recovery Plan (*Puma concolor coryi*), Third Revision. U.S. Fish and Wildlife Service. Atlanta, Georgia. 217pp.

ADDITIONAL COPIES MAY BE OBTAINED FROM:

U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, FL 32960
772-562-3909

Recovery plans can be downloaded from <http://www.fws.gov/endangered> or <http://www.fws.gov/verobeach>

RECOVERY TEAM MEMBERS

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* Current members, alternates, and U.S. Fish and Wildlife Service participants who actively contributed by attending meetings.

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Meeting Facilitators – Florida Conflict Resolution Consortium:

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Tom Taylor	Tallahassee

Previous Recovery Team members that attended meetings were Lincoln Bormann (The Nature Conservancy), Pete David (South Florida Water Management District), Thomas Eason (Florida

Fish and Wildlife Conservation Commission), John Kasbohm (U.S. Fish and Wildlife Service), Jeff Norment (Natural Resources Conservation Service), and Jora Young (The Nature Conservancy).

ACKNOWLEDGMENTS

The initial work (2001 - 2004) on this third revision of the Florida Panther Recovery Plan was led by John Kasbohm with the assistance of Dawn Jennings (U.S. Fish and Wildlife Service). Jora Young guided the Team through the threats analysis process and produced the Threats Analysis tables. Building upon that early work, Chris Belden and Cindy Schulz led the team through to completion of this revision.

Many people contributed to this revision, and some spent countless hours working on specific sections. The Overview and much of the Background Sections were initially written by John Kasbohm. Parts of the Background Section were updated and added to by Chris Belden, Mark Cunningham, Elizabeth Fleming, Paula Halupa, Laura Hartt, Karen Hill, Nick Kapustin, Darrell Land, Laurie Macdonald, Roy McBride, Tim O'Meara, Cindy Schulz, and Wes Woolf. The Recovery Strategy was drafted by Laura Hartt and Karen Hill with assistance from Larry Richardson, Wes Woolf, and Steve Williams. The Recovery Action Outline and Narrative Section and Implementation Schedule were a Team effort, but specific parts were provided by Kipp Frohlich, Margaret Trani (Griep), Tim O'Meara, and Karen Hill. Karen Hill provided the majority of the Public Awareness and Education parts of these sections.

The major editing for this revision was done by Cindy Schulz, Chris Belden, and Paula Halupa.

Editorial suggestions were also provided by Laura Hartt, Deborah Jansen, Elizabeth Fleming, Karen Hill, Tim O'Meara, Joe Clark, Dana Bryan, Laurie Macdonald, and Mark Cunningham. We want to thank Chris Pederson and Tom Taylor for keeping us focused by facilitating our meetings.

EXECUTIVE SUMMARY

Current Species Status

The Florida panther is the last subspecies of *Puma* still surviving in the eastern United States. Historically occurring throughout the southeastern United States, today the panther is restricted to less than 5% of its historic range in one breeding population located in south Florida. The panther population has increased from an estimated 12-20 (excluding kittens) in the early 1970s to an estimated 100 - 120 in 2007. However, the panther continues to face numerous threats due to an increasing human population and development in panther habitat negatively impacts recovery. The panther is federally listed as endangered (see Appendix A for definitions) under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) and is on the State endangered lists for Florida, Georgia, Louisiana, and Mississippi. The panther has a recovery priority number of 6c.

Habitat Requirements and Limiting Factors

Panthers are wide ranging, secretive, and occur at low densities. They require large contiguous areas to meet their social, reproductive, and energetic needs. Panther habitat selection is related to prey availability (i.e., habitats that make prey vulnerable to stalking and capturing are

selected). Dense understory vegetation provides some of the most important feeding, resting, and denning cover for panthers. Telemetry monitoring and ground tracking indicate that panthers select forested habitat types interspersed with other habitat types that are used in proportion to their availability.

Limiting factors for the Florida panther are habitat availability, prey availability, and lack of human tolerance. Habitat loss, degradation, and fragmentation is the greatest threat to panther survival, while lack of human tolerance threatens panther recovery. Panther mortality due to collisions with vehicles threatens potential population expansion. Potential panther habitat throughout the Southeast continues to be affected by urbanization, residential development, road construction, conversion to agriculture, mining and mineral exploration, and lack of land use planning that recognizes panther needs. Public support is critical to attainment of recovery goals and reintroduction efforts. Political and social issues will be the most difficult aspects of panther recovery and must be addressed before reintroduction efforts are initiated.

Recovery Strategy

The recovery strategy for the Florida panther is to maintain, restore, and expand the panther population and its habitat in south Florida, expand this population into south-central Florida, reintroduce at least two additional viable populations within the historic range outside of south and south-central Florida, and facilitate panther recovery through public awareness and education. The panther depends upon habitat of sufficient quantity, quality, and spatial configuration for long-term persistence, therefore the plan is built upon habitat conservation and

reducing habitat-related threats. Range expansion and reintroduction of additional populations are recognized as essential for recovery. Similarly, fostering greater public understanding and support is necessary to achieve panther conservation and recovery.

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

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.

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).

Interim Recovery Goal

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.

Actions Needed

1. Maintain, restore, and expand the panther population and its habitat in south Florida.
2. Expand the breeding portion of the population in south Florida to areas north of the Caloosahatchee River.
3. Identify potential reintroduction areas within the historic range of the panther.
4. Reestablish viable panther populations outside of south and south-central Florida within the historic range.
5. Secure, maintain, and restore habitat in reintroduction areas.
6. Facilitate panther conservation and recovery through public awareness and education.

Total Estimated Cost of Recovery

Cost estimates reflect costs for specific actions needed to achieve Florida panther recovery.

Estimates do not include costs that agencies or other entities normally incur as part of their mission or normal operating expenses. The following table provides cost estimates for five years for recovery actions listed in the Implementation Schedule of this document. These costs reflect an estimate of funding that could come from FWS and / or its many partners listed in the Implementation Schedule. Costs for some recovery actions were not determinable; therefore, the total cost for recovery during this period is higher than this estimate.

Estimated Cost of Recovery for Five Years by Recovery Action Priority (Dollars x 1,000):

Year	Priority 1 Action	Priority 2 Actions	Priority 3 Actions	Total
1	875	1,981	1,713.5	4,569.5
2	875	1,696	1,506.5	4,077.5
3	835	1,561	1,231.5	3,627.5
4	835	921	981.5	2,737.5
5	835	921	981.5	2,737.5
Total	4,255	7,080	6,414.5	17,750

Date of Recovery

If all actions are fully funded and implemented as outlined, including full cooperation of all partners needed to achieve recovery, criteria for reclassification from endangered to threatened could be accomplished within 30 years; criteria for delisting could be accomplished within 45 years following reclassification. However, due to the challenging nature of panther recovery these are estimates that will be reevaluated as recovery actions are implemented.

Florida Panther Recovery Plan Worksheet Answer Key

Directions: Read the Florida Panther Recovery Plan excerpt version (pages 1-14). After reading, use your critical thinking and analysis skills to complete the questions about the Florida Panther Recovery Plan.

1. Why do you think the Florida Panther Recovery Plan was created?

Answers will vary but should include information to recover/protect/preserve/conserve the Florida Panther as it is currently listed as an endangered species."

2. Looking at the list of Recovery Team members, how many different entities were involved in the creation of this plan?

- a) about 10
- b) about 5
- c) about 124
- d) about 40 *Correct answer*

3. Why do you think it is important to have numerous different entities work together to create one concise recovery plan?

Answers may vary but should include: Having so many entities involved in such an important action plan ensures everyone is on the same page. That means everyone is aware of what is going on when it comes to the conservation of the Florida Panther- funding, dividing up responsibilities evenly, etc.

4. According to the document, what percent of the Florida panther's historic habitat range are panthers currently restricted to?

- a) 17%
- b) 5% *Correct answer*
- c) 12%
- d) 2%



5. In your own words, explain what the recovery strategy of the Florida Panther Recovery Plan is.

Answers may vary but should include: The recovery strategy for the Florida panther is to maintain, restore, and expand the panther population and its habitat in south Florida, expand this population into south-central Florida, reintroduce at least two additional viable populations within the historic range outside of south and south-central Florida, and facilitate panther recovery through public awareness and education.

6. In your own words, explain what the recovery goal of the Florida Panther Recovery Plan is.

Answers may vary but should include: 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.

7. Looking at the recovery objectives in the document, list one objective and give an example of how you think officials working with the Florida Panther Recovery Plan would fulfill the objective. For example: Objective #3 “To facilitate panther recovery through public awareness and education.” To fulfill this objective, it would be beneficial to require any U.S. National Park stationed in Florida panther habitat to include Florida panther education in their programs to spread awareness to students/park visitors.

Answers will vary depending on which objective is selected.

8. Looking at the recovery criteria, explain how officials working with the Florida Panther Recovery Plan concluded that an ideal number for the Florida panther population is 240 individuals.

Answers may vary but should include: After consulting many different wildlife biologists, ecologists, and other experts in the field who collected and analyzed scientific data, they were able to determine an ideal estimate for a recovered Florida Panther population.

9. Explain what it means to delist the Florida Panther.

Answers may vary but should include: To delist means to take off the Endangered list, which the Florida panther is currently listed as. In the long-term this is a goal for the Florida panther.



10. For how many years did the Florida Panther Recovery Plan include in their cost estimation?

a) 5 *Correct answer*

b) 15

c) 12

d) 3

11. List 3 things you learned about wildlife conservation and planning after reading the Florida Panther Recovery Plan (Third Revision) by U.S. Fish and Wildlife Service (FWS).

Answers will vary.