

3 ARE WE THERE YET? WILDLIFE CORRIDOR DECISIONS



ESTIMATED TOTAL TIME

75 minutes

- ▶ Grades 6–8 Life Science
- ▶ Social Studies/Geography Connections

In this activity, students evaluate local and Florida state maps to predict challenges for the movement of wildlife. Students explore moving across space in a car, on a bike, or by foot using Google Maps. Students read about challenges of protecting the Florida panther and look for evidence of why protection of land will help panthers and other species. They then analyze land cover data using the National Geographic MapMaker tool to determine the need for wildlife corridors. Students outside of Florida can use what they learned about Florida and apply it to their location or other countries, as wildlife habitat fragmentation is a global issue and wildlife corridor efforts are a key strategy used to balance the needs of humans and ecosystems.

KEY TERMS

- ▶ endangered species
- ▶ fragmented landscapes
- ▶ geographic information systems (GIS)
- ▶ population
- ▶ wildlife corridor

See the glossary on page 44 for definitions.

BACKGROUND

Wildlife corridors play a vital role in preserving biodiversity and maintaining the health of ecosystems. These pathways of interconnected natural habitats enable wildlife to move, migrate, and disperse across fragmented landscapes—the splitting of large landscapes into smaller areas due to urban development. Wildlife corridors alleviate **limiting factors** by promoting movement, gene flow (the movement of genes into and out of a population), and access to essential resources—ultimately

enhancing the resilience and long-term survival of wildlife **populations**.

By facilitating gene flow and species movement, corridors promote genetic diversity and reduce the risk of inbreeding, enhancing species' adaptability to environmental changes. Also supporting the survival of endangered and keystone species—species critical to the ecosystem's health—wildlife corridors provide access to vital resources including food, water,

and shelter. Wildlife corridors mitigate the adverse effects of **fragmented landscapes** caused by human activities, fostering ecological resilience and promoting the coexistence of humans and wildlife.

In Florida, new housing developments for the state's growing population are built where wildlife habitat once existed. This results in islands of habitat, with wildlife populations separated by roads and suburbs. For the **endangered** Florida



ARE WE THERE YET? WILDLIFE CORRIDOR DECISIONS

panther, which needs to move across vast wild spaces, motor vehicle collisions have become the leading cause of death, with nearly 30 individuals killed every year.

The survival of the Florida panther and other wildlife depends on the protection of a network of statewide public and private lands, known as the Florida Wildlife Corridor. In June of 2021, the Florida Wildlife Corridor Act was signed into law with unanimous bipartisan

support. The legislation formally defined the Florida Wildlife Corridor and has since inspired more than \$2 billion in public investment to help protect the state's vast network of public and private lands supporting both wildlife and people. Investing in rural land conservation will keep the habitats connected, steer new development toward existing urban cores, and secure a future for the Florida panther and other vulnerable species.

STANDARDS

This activity addresses the following:

NGSS: MS-LS2-4: Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

Florida NGSS: SC.6.E.7.6: Identify ways humans protect the environment and/or prevent or reduce harmful effects of human activity on the environment.

Florida Social Studies Standard 1: Understand how to use maps and other geographic representations, tools, and technology to report information.

Florida Social Studies Standard 3: Understand the relationships between the Earth's ecosystems and the populations that dwell within them.

Florida Social Studies Standard 5: Understand how human actions can impact the environment.



OBJECTIVES

Students will:

- use online maps to consider the value of wildlife corridors based on land use where they live;
- explore and analyze a land cover dataset, using geographic information systems (GIS), to determine where wildlife corridors are needed in Florida;
- compare recommendations with actual Florida Wildlife Corridor maps; and
- apply this process in interpreting land cover data and determining wildlife corridor needs for other states or countries (optional).

PREPARATION

Gather and/or print materials:

- Digital Mapping Tool: [Google Maps](#)
- Videos: [Path of the Panther](#) (2:21) or [Saving the Florida Wildlife Corridor](#) (10:06)
- Article: [The history of the Florida panther, a symbol of reverence and revulsion](#)
- Handout: Corridor Mapping Challenge (1 per small group)
- Online Tool: [National Geographic MapMaker](#)
- Map (optional): [Florida Corridor Map](#) from [this collection](#), for context

Set up technology:

- Choose a city or location where your students can “travel” via Google Maps in Step 1. The city or location should be far enough away from your city or town so that students would encounter multiple obstacles—such as roads or waterways—if they were to walk there.
- Practice using the MapMaker tool following the instructions on the Are We There Yet? Wildlife Corridor Decisions student handout. If students won't have access to computers, you can project Google Maps and National Geographic MapMaker and work through it as a class. Students will gain more experience, however, evaluating the land cover dataset on a computer in small groups.

20 MIN CONSIDER THE CHALLENGES OF MOVING ACROSS LAND

1. Share this scenario: “Your family is taking a trip from X (city/town where you live) to Y (city selected). Use Google Maps to determine the best driving route to the destination. If multiple routes are suggested by Google Maps, choose one.”
2. Have students compare different routes for traveling by car, by bike, and on foot (Tip: Students can take a screenshot of each route map for ease in comparison.):
 - Ask students to share their “driving” route with a partner and explain why they chose that route.
 - Next, ask students to change their route setting to “cycle” and see how it changes.
 - Then ask students to change their route setting to “walk” and see how it changes.



ARE WE THERE YET? WILDLIFE CORRIDOR DECISIONS

3. Discuss the walking route(s) as a class. Ask, *What challenges/obstacles might you face when walking across this landscape? How might you overcome them?* Students might describe how difficult crossing a highway or other busy road might be. Explain to students that, like humans, large mammals and other wild animals face challenges moving from place to place. List these challenges on the board.
4. Depending on time available, view the [Path of the Panther film trailer](#) (2:21) or the short film "[Saving the Florida Wildlife Corridor](#)" (optional; 10:06). Ask:
 - *What do you think wildlife corridors are, and why might animals need them?*
Encourage students to share their ideas. Then share this definition: Wildlife corridors are networks of protected lands that help wildlife move across large landscapes that have been fragmented by human development. A corridor could be large (across the entire state of Florida) or small (a strip of land connecting two parks or preserves).
 - *Why do people in the film think the Florida Wildlife Corridor is important? What challenges or obstacles do endangered Florida panthers and other wildlife encounter moving across areas of Florida?*

15 MIN EXPLORE WILDLIFE CORRIDORS AND THE NEED FOR PROTECTED SPACES

5. Have students read the online article "[The History of the Florida Panther, a Symbol of Reverence and Revulsion.](#)" (Note: You might assign as homework to provide more time for the group work and discussion in class.) Ask students to think about the following questions while they read:
 - *Before the 1900s, panthers were found across North America, and now they are an **endangered species**. What caused their space to be reduced to what it is today? (hunting, vehicle strikes, habitat loss)*
 - *What strategies have helped to restore the population size of the panther? (introducing cougars to breed with panthers; cultural celebration of panthers)*
 - *What do panthers need to successfully increase their population? Why? (more protected green spaces and prevention of vehicle strikes and habitat loss; they need to expand north of South Florida, where there is not enough room for them to expand to a healthy population size)*
6. Have students consider other mammals near them. Ask: *Can you think of any local mammals that have a similar story to the Florida panther?* Guide students to understand that typically any predator (e.g., bears, wolves, mountain lions, coyotes) would have a similar story.

MORE TO EXPLORE

COMPARE AREAS IN DIFFERENT STATES AND COUNTRIES

Have students follow the same steps using the land cover data layer with MapMaker, searching other areas of the world to compare locations and recommend where wildlife corridors could be. Students can find out more about local wildlife that is threatened or endangered, including conservation needs and current efforts. Have students research more about wildlife corridors, wildlife crossings, and the species they support across the U.S., starting with this [summary from the National Wildlife Federation](#).

LEARN MORE ABOUT THE FLORIDA PANTHER

Find a slideshow and more about the plight of the Florida panther in this article: "[How America's Most Endangered Cat Could Help Save Florida.](#)" Explore more maps for proposed corridor lands in Florida [here](#). Students can research FWC legislation, starting with [this article](#).

RESEARCH MARINE CONSERVATION EFFORTS

Have students compare and contrast wildlife corridors on land with [protections in marine environments](#). They can research Marine Protected Areas (MPAs) and other preserves and find a protected areas data layer in [National Geographic MapMaker](#). Students can focus on marine life that depend on MPAs and other protections, such as the North Atlantic right whale, the Florida manatee, and numerous sea turtle species.



ARE WE THERE YET? WILDLIFE CORRIDOR DECISIONS

25 MIN EXPLORE AND ANALYZE FLORIDA'S LAND COVER DATA

7. Explain to students that next they will work in small groups (2 to 4 students) to explore and compare land types, called “land cover” in the data set, in different areas of Florida. They will identify where protection of land as wildlife corridors seems most urgent. To do this they will interpret an actual land cover data set using National Geographic’s [MapMaker](#) interactive tool, an online geographic information systems (GIS) tool.
8. Give each group the Are We There Yet? Wildlife Corridor Decisions handout. The first page guides them to find the land cover data set and zoom into Florida. You can project MapMaker on a screen to model for them or challenge students to follow the instructions in their groups.
9. Help students locate the map key, and discuss the different land cover types. On the second page students record what they notice, patterns they see, and questions they have as they explore central Florida and the panhandle. You can evaluate their understanding by monitoring their responses, and pause to have a whole class discussion about ideas in their charts if needed, before they move to the decision-making on the third page of the handout. Students might also want to compare Florida south of Lake Okeechobee, if time allows.

10 MIN DISCUSS STUDENT RECOMMENDATIONS AND COMPARE TO THE FWC PLANS

10. Project MapMaker with the land cover dataset and allow each group to present their recommendations for wildlife corridors in Florida. List each recommendation on the board, or, even better, add to a sketch of a Florida map.
11. After students present their ideas, as a class compare their recommendations with the [Florida Wildlife Corridor map](#) of protected (conserved) lands and proposed (opportunity) areas from this collection: floridawildlifecorridor.org/maps.

5 MIN REFLECT

12. Have students complete an exit ticket with one or more of the following questions:
 - What else could help you to better understand wildlife and wildlife corridors near you?
 - How can we take action to support wildlife corridors?
 - In what ways does analyzing land cover data impact your view of land where you live? What questions could we try to answer using land cover data analysis?

