

# Panther Management

## Summary:

This lab examines the threats and challenges Florida panthers face, the factors involved in conducting a prescribed burn, the management strategies of the refuge, and why the refuge is so important to the survival of Florida panthers and other wildlife species.

## Objective(s):

After completing this field lab, students will be able to:

1. Describe at least three threats facing a Florida panther in its lifetime
2. Describe at least three techniques wildland firefighters use to successfully conduct a prescribed burn
3. Be able to explain two reasons natural resource managers conduct prescribed burns
4. Be able to explain why Florida Panther National Wildlife Refuge is so important to the movements and survival of Florida panthers

## Ecosystem(s):

Pinelands, hammocks, hardwood forests

## Equipment:

- Pylons
- Black weed control material
- Whistles
- Poker chips
- Flagging tape
- Large mounted map of area
- Frisbees
- Bandannas
- Red t-shirts

## Procedure:

Split students into two equal groups (about 24 students per group). One group will participate in the Panther Chase activity while the other group participates in the Prescribed Fire activity. After 25 minutes, the groups will flip and the activities will be run again. Upon completion of both activities, all students will meet either inside the pavilion or at the picnic tables for review.

## Time Table:

Activity 1	25 minutes
Flip groups	5 minutes
Activity 2	25 minutes
Gathering	5 minutes
Review	10 minutes
Total time:	1 hour, 10 minutes

### *Panther Chase*

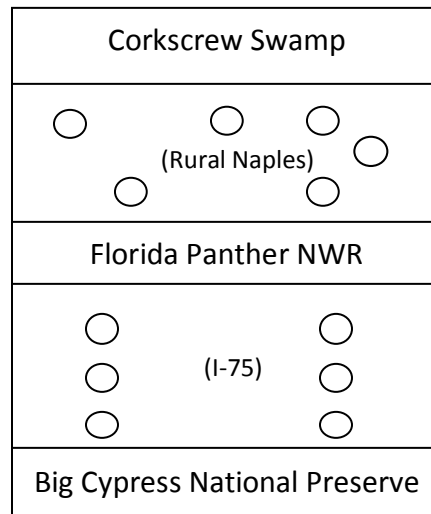
1. Prior to the group arriving, designate a large rectangular area as the activity area (approximately 30' x 100') with four pylons in the corners and several pylons around the perimeter. Using the diagram below, place flagging tape on the ground to designate the conservation areas of the activity (Audubon's Corkscrew Swamp Sanctuary, Florida Panther National Wildlife Refuge and Big Cypress National Preserve). Lay six Frisbees randomly between Corkscrew and the refuge to represent "safety zones" within Rural Naples. Lay six Frisbees between the refuge and Big Cypress in two straight lines of three frisbees for each line to represent underpasses along I-75. Scatter poker chips randomly in the refuge zone – 14 blue tokens (food), one white token (feline leukemia), one red token (pseudo rabies), one green token (intra-species aggression) and one silver token (mercury poisoning).
2. Upon arrival of the students, identify them as either "panthers" or "threats". There will be approximately 6 "threats" and 18 "panthers". Give the panthers bandannas (color doesn't matter). Students should tuck one corner of the bandanna in a pants pocket or belt so that it can be easily pulled off but not fall out on its own.
3. Explain the objectives for both panthers and threats and what the different zones are without getting into too much detail. Do not reveal the meanings behind the different colored poker chips, or what the Frisbees represent other than a generic safety zone. Make sure students are aware of the different areas: Corkscrew Swamp, Rural Naples (such as Golden Gate Estates), Florida Panther NWR, I-75 and Big Cypress.
4. Place two threat students in the I-75 zone and four threats in the Rural Naples zone randomly. Place all panthers just behind the line that starts at Corkscrew Swamp.
5. Use a whistle to start the round. When a round begins, have the panthers start from their shelter in Corkscrew Swamp. Their task is to move from Corkscrew Swamp to Big Cypress, collecting a poker chip along the way in Florida Panther NWR. Travel is hazardous, however. Panthers need to be on the alert for threats. If one is spotted close by, they can run for "cover" (have at least one foot on the Frisbee) or within one of the zones (Corkscrew, the refuge, or Big Cypress). The threats attempt to capture panthers. A successful capture is when a bandanna is removed from the panther. A panther cannot prevent a threat from removing the bandanna except by escaping (no wrestling with the bandanna). Once a panther has lost a bandanna, they must exit the playing area and stand on the sidelines until the round is done.
6. Set a time limit for each round of 5-7 minutes (panthers on the sidelines will become restless if rounds are much longer). Tell panthers that if they don't reach Big Cypress by this time, they will have perished because they haven't moved around to find enough food to survive.

NOTE: Establish ground rules for panther and threat behavior: Behave in ways not harmful to other students. Pushing, tripping, etc. will not be tolerated.

7. When the round is complete, gather all students together and ask them to summarize what happened in the activity.

8. Ask panthers to reveal the colors of the chips they picked up in the refuge. Explain that any surviving panther with a white, red, green or silver token has perished due to the reason it represents. Briefly explain how each affects panthers.
9. Ask students why the Frisbees in the I-75 zone are in two straight lines. Encourage them with questioning techniques to arrive at the answer (underpasses that go underneath I-75 to provide safe crossings for panthers and other wildlife, as well as people) and explain the important role underpasses have in the survival of panthers.
10. Ask students what threats might exist in a rural area, and what safety zones the Frisbees would represent there. Threats: shooting by angry or scared homeowners, vehicle collisions, kitten predation by dogs or coyotes, etc. Safety zones represent patches of private land without development and small parks or conservation areas. Explain the hazard to panthers, pets and homeowners if livestock or pets are left un-penned at night (Florida panthers will prey on livestock and pets that aren't in enclosed pens at night). What do the threats in the I-75 area represent? Answer: cars, especially in areas without adequate fencing along the interstate to keep Florida panthers off the road.
11. Show students the big map of the area and ask them why panthers would travel from Corkscrew to Big Cypress. Answers: Big Cypress has fewer roads, big expanse of habitat, more hogs and deer, access to many areas). Why are they travelling up to Corkscrew and other areas? Answer: to find food, mates, train young in hunting techniques, etc.
12. What role does Florida Panther NWR play in panther survival? Answers: Stopover habitat between larger expanses of land (the middle puzzle piece of public land in SW FL), place to raise young, plentiful deer and hog for food and feeding young, few roads).
13. Play another round, allowing other students to be threats. For this round, the blue chips with dots on one side represent feline leukemia, mercury poisoning, intra-species aggression and pseudo rabies (most students will avoid the other colored chips this round because they know what they represent). Do not reveal this until after the round is finished and you are discussing how it went with students.
14. Discuss briefly any changes in this round compared to the previous round. Did panthers or threats act differently this time?
15. If time allows, play a third time to allow all students the chance to play threats.

Start



### *Prescribed Fire*

1. Prior to the group arriving, designate a large rectangular area as the activity area (approximately 30' x 100') with four pylons in the corners and several pylons around the perimeter. Lay down the weed control around the two longest sides and one short side of the activity area, but folded in half lengthwise so it is only about 18 inches wide. The short side left without material is the "south" line of the unit.
2. Upon arrival of the students, identify them as either "wildland firefighters" or "fire". There will be approximately 3 firefighters and 21 fire for the first round of the activity. Give the three firefighters red t-shirts to put on (there are different sizes).
3. Explain that the area in front of them is a fire unit on Florida Panther NWR that is overgrown with vegetation and is hard for panthers, deer and other wildlife to walk through. In addition, if a lightning strike hit inside this unit, there would be plenty of fuel to start a wildfire that under stormy conditions could create a catastrophic fire that may damage the habitat and cause other areas of the refuge to burn that shouldn't. There are also a few houses and residents around the perimeter that need to be protected from wildfire. Land managers instead use prescribed fires, which are lit under specific conditions (wind speed, wind direction, humidity, soil moisture, etc.) so they burn slower and cooler to accomplish resource objectives while keeping firefighters safer than under wildfire conditions.
4. In a prescribed burn, firefighters establish a firebreak around the unit to help keep the fire contained. Sometimes firebreaks are natural: rivers, ponds, wetlands, etc. and other times they are man-made: canals or roads. Firebreaks can also be made specifically for a fire by mowing an area to prevent the fire from spreading on the ground, or by even burning an area to provide a firebreak. A fire usually won't be able to cross an area that was recently burned (why not? No fuel!). When an area was recently burned, it is called a blackline. Why else might a firebreak be important in a fire situation? Since it won't burn easy, it's the ideal place for firefighters to station themselves to conduct the burn.
5. In this unit, there is a blackline around the perimeter. The unit is primarily pine flatwoods that has been invaded by lots of cabbage palm trees that burn easy and hot. In addition, lots of saw palmetto and other shrubs are present, making the vegetation very dense and difficult to walk through. All of this dense vegetation will fuel a fire, likely carrying it up into the tree canopy, where it can quickly spread across firebreaks.
6. Line up all fire students along the south fireline (explain which direction represents north). Have the three firefighters stand at the opposite end of the playing field (on the north line). Each fire student should have a bandanna with the corner tucked into a pants pocket or belt so that it can be removed but does not fall out (color of bandana doesn't matter). The objective of the "fire" students is to run through the unit and get out without getting their bandannas taken by the firefighters. The objective for firefighters is to not allow any fire to escape by collecting bandannas that the fire students are wearing. One fire ember that jumps the line creates a "hotspot". This pulls firefighters from the line to contain it so the fire doesn't spread to other areas of the refuge. To get out of the unit, the fire students must jump over the blackline without landing in it. A fire student's bandanna is automatically removed if they jump and land

any part of their body into the blackline or if a firefighter removes it. Firefighters can run anywhere they choose inside the blackline or outside of it, but not inside the unit (this is unsafe, since that's where the fire is burning). Establish an area for escaped fire students to gather until the activity is over.

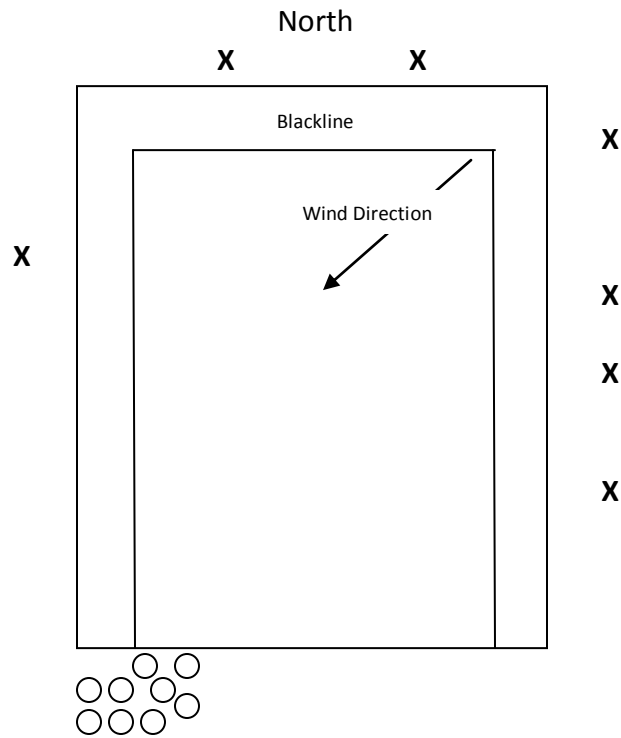
7. Run the activity and allow 5-7 minutes. Any fire students still in the unit will be declared contained at the end of the timeframe (other students may get antsy on the sidelines).

NOTE: Establish ground rules for behavior: Behave in ways not harmful to other students. Pushing, tripping, etc. will not be tolerated.

8. Likely, most of the fire students will have escaped the unit. Ask students what this means (the fire escaped and is now burning other units of the refuge). What are the consequences of this? (May have to call in other firefighters from other refuges or agencies to help contain it, use more resources such as helicopters, bulldozers, and water, and burn areas that aren't meant to be burned). What are some strategies they can use to keep the fire contained? (More firefighters to help with the burn, place firefighters around the entire perimeter, and create a wider firebreak).
9. Run the activity again, but fully unfold the weed control material so it is three feet wide. Allow the three firefighters to become fire, and select seven firefighters to stand on the perimeter of the unit on all three sides. Run the activity again with the same rules.
10. What happened this time? Did any fire still escape the unit? What other methods can be used to help keep the fire within the unit? What might make the fire move slower? One of the most important tools firefighters use is the weather. They will ensure the humidity is high enough to keep the fire from spreading rapidly, but low enough that the vegetation is dry enough to burn. Wind speed and direction are also very important. Firefighters will usually burn against a light wind so that the fire has to push itself forward – almost like us walking through sand instead of on a sidewalk. This is called a backing fire. A fire lit in the direction of the wind is called a head fire and these move fast and burn hot, making them very difficult and dangerous to control. However, in a backing fire, the wind can't be blowing too hard or the fire could change direction and start moving the opposite direction you want it to and become a head fire.
11. Ask students: if they want the fire to burn starting in the southwest corner moving northeast, what wind direction would they want? They would want a light wind blowing toward the southwest – the opposite direction that the fire would be moving. This is called a southwest wind because wind is named for the direction it is coming from, not the direction it is moving. So if the fire is moving northeast, where would you put the majority of your firefighters in this situation? On the north and east lines!
12. Run the activity one last time, again switching out students to play different roles. Station one firefighter on the west line as a precaution (in case of wind changes), two or three firefighters on the north line and 4-5 firefighters on the east line. Also, because the fire will be moving slower, the fire students can only hop or jump. Station the fire students all in the southwest corner instead of along the entire south line.
13. What happened this time? Was the fire contained successfully? If not, are there any other changes they could make? More firefighters may help, using stronger or lighter

wind or creating a wider firebreak. However, if the unit has such dense vegetation as this one did, a fire can carry itself up trees and into the canopy, where it can jump from tree to tree. It can easily jump wide firebreaks this way. So some resource managers will mechanically fall some of the trees in the unit before the prescribed fire is conducted to keep the fire on the ground and safer for firefighters. In addition, fire managers will burn units frequently (every 2-20 years depending on the habitat type) to keep the vegetation from building up too much.

Last Round:



### Review

Bring all students from both activities together (in the pavilion or around the picnic tables). Show the big map of the area again and ask students why the refuge is such a key part of the conservation puzzle (it's strategically in the middle of larger tracts of land that allow panthers to move around, provides resting areas and places to raise young, has plentiful deer and hogs, etc.). What are our management strategies for the panther (manage for deer, prescribed fire). If time allows, talk about why cabbage palm trees invaded refuge habitats, why we remove them (even though they're native!) and the benefit to panthers when we do this. Also mention that we actively remove exotic plants because they invade habitat and take away foraging areas for deer. Nowhere else in Southwest Florida are all three management strategies used (exotic removal, prescribed fire and habitat enhancement). This sets up the refuge as a key area for deer, hogs, and ultimately Florida panthers.