



HOLDEN
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TEACHER RESOURCES

Common, But Not Ordinary: Patterns of Avian Diversity in Florida's Mesic Flatwoods

by Natasza Fontaine

(Florida State University, Curator R.K. Godfrey Herbarium)

These educational materials were designed to accompany the video seminar "Common, But Not Ordinary: Patterns of Avian Diversity in Florida's Mesic Flatwoods" by Natasza Fontaine presented on August 11th, 2021 as part of a virtual Holden Forests & Gardens Scientist Lecture Series, Growing Black Roots: the Black Botanical Legacy.

Learn more about the lecture series [here](#).

Comprehend & Connect: Take a virtual trip to see the Florida mesic flatwoods

Listen to the talk to find out: What does Ms. Fontaine note is special about the Florida mesic flatwoods ecosystem?

1. Explore the homepage of the Godfrey Herbarium <https://herbarium.bio.fsu.edu/>
 - a. What is an herbarium?
 - b. What is the purpose of an herbarium?
 - c. How does the herbarium help with conservation of Florida plant communities?
2. Explore plants from the mesic flatwoods using the Godfrey Herbarium digitized specimen database. From the home page, find the menu on the left-hand side and choose "Database". Search for herbarium specimens with the Habitat type "mesic flatwoods". Pick one sample from your search results, then answer the following:
 - a. What is the species name, what date was the specimen collected, and who collected it?
 - b. What does the plant look like now that it has been placed into the museum as an herbarium specimen? What did it look like when it was alive?
 - c. Where was the specimen collected? Note that herbarium specimens often have multiple types of location information listed in the specimen record, find all the information you can about the collection location.
 - d. Use Google Maps or another map application to search for the specimen collection location.
3. Plan a visit to the collection location for your chosen sample
 - a. In Google Maps, use the "Directions" feature to calculate a route from your home to the location where your chosen sample was collected. How far is it? How would you get there, and how long would it take?
 - b. In addition to the plant collected at that location, what else would you expect to see there? Look for descriptions and pictures of the place, what is it like?
 - c. Share your travel plans with your learning group by making a travel poster for the collection location. Don't forget to promote the cool plant that you expect to see there based on the herbarium specimen you examined! Also, note other plants, animals or natural features that people can expect to see there based on your Google Maps search.

TO DO: Build a food web that includes birds and plants

Listen to the talk to find out: What attributes of the mesic flatwoods does Ms. Fontaine say makes it such an important place for plant and bird diversity? What are some of the plants and birds she mentions?

TEACHERS NOTE: Get in-depth information on Florida mesic flatwoods, their conservation, and how they support wildlife here <https://www.fws.gov/verobeach/MSRPPDFs/MesicPineFlat.pdf>

1. Carnivorous plants are one of the most unusual aspects of the Florida mesic flatwoods ecosystem. Use the resources below to learn more about *Sarracenia minor*, a type of carnivorous pitcher plant found in this ecosystem.
 - a. Read about the biology of *Sarracenia minor* <https://arboretum.ucf.edu/virtual/hooded-pitcher/>
 - b. Learn about the unusual flower morphology of *Sarracenia* <https://www.youtube.com/watch?v=l3e2Jklvi1Q>
 - c. Look inside a *Sarracenia* pitcher <https://www.youtube.com/watch?v=tuYhJUypYEE>

2. There are many unusual birds found in Florida's mesic flatwoods, use the resources below to learn more about one of those birds, Dryobates borealis, the Red-cockaded woodpecker https://www.allaboutbirds.org/guide/Red-cockaded_Woodpecker/overview
 - a. TEACHERS NOTE: if you have an eBird account you can view more detailed records on Red-cockaded woodpecker <https://ebird.org/species/recwoo>
3. Draw a food web that shows the connections between Sarracenia minor, Dryobates borealis, and other organisms in the Florida mesic flatwoods ecosystem, consider the following:
 - a. Use this tutorial for instructions on how to draw a food web <https://www.youtube.com/watch?v=iYKfkD481cl>
 - b. Based on the information you just read, what resources does each of them need to survive?
 - c. What trophic level are the pitcher plants? Are they producers, consumers, or predators?
 - d. Both organisms need insects as a source of food, so if the insect population goes down, they will have reduced food supply. Pick one insect that is consumed by the pitcher plants and the woodpeckers and use a search engine to find out, what do these insects need to grow and thrive? Add this insect to your food web, and don't forget to include the resources that the insects depend on.
 - e. Lastly, consider the impact of woodpeckers on pitcher plants, and vis-a-versa. What would be the expected impact on woodpeckers if pitcher plants increase drastically in abundance? What if woodpecker numbers decline, how might that impact the pitcher plants? Use your food web to make predictions about how different parts of the food web might respond to changes in other parts of the food web.



