

Lesson 1: Mysterious Mammals

Objectives:

- Learn about NCWRC and the NCCC citizen science project
- Characterize and classify biotic and abiotic factors in local ecosystems
- Create profiles of local mammals, highlighting adaptations that help them to survive

Timing and Implementation: 60 minutes. Indoor lesson. Before camera trap deployment.

Materials:

- Mammal Profile worksheet
- Access to the NC Wildlife Resources Commission website for [mammal information](#)

Introduction and Background:

The NCWRC is a state government agency that works to conserve and sustain the state's fish and wildlife resources through research, scientific management, wise use, and public input. The NCWRC and NCMNS launched NCCC, a statewide camera trap survey run by citizen science volunteers. To be informed and engaged participants in this project, it's important for students to know how scientists classify organisms in ecosystems, especially mammals, the focal animals of NCCC. This lesson introduces the concept of studying mammals including information on classifications, biotic and abiotic factors, and monitoring.

Procedure:

1. Start a discussion with students about what they know about NC wildlife:
 - *What is your favorite NC animal? Is it common or rare? Endangered or threatened? Why?*
 - *Are there any laws that protect this animal? Who creates the laws?*
 - *How do we learn how this animal is doing in NC? Its health and population numbers?*
 2. Share background information on the NCWRC and NCCC. Share different pictures of mammals to begin a discussion about mammals. Use "[Best Photos](#)" from the NCCC website. List responses and identify those unique to mammals .
 - *How do these animals give birth? Stay warm? Move?*
 - *What other characteristics do these animals have in common?*
- Or, provide a quick video overview with a [BrainPop video](#)

Students learn that mammals are warm-blooded, (endothermic) vertebrate animals distinguished by having hair or fur, producing milk for their young, and giving birth to live young. There are exceptions, all mammals do not meet all of these characteristics (e.g. platypus lay eggs).

4. Discuss how mammals can be classified into smaller groups. Guide the discussion towards diet as a way to group mammals.

- *Can you think of other ways that mammals might be classified?*
- *How are you different from a horse? Whale? Lion? Bat?*

5. Brainstorm ideas and create a list of living (biotic) and nonliving (abiotic) factors in the environment and how they affect animals. Introduce biotic and abiotic as key vocabulary terms.

- *What are some living parts of the environment that might affect animal populations? How would plants affect animal populations? Would plant texture, color, or scent make it more or less appealing? (Instructor may choose to pass around herbs or natural products and ask students if they think animals may be attracted to such items.)*
- *What are some nonliving parts of the environment that might affect animal populations? Could soil affect animal populations? Weather?*
- *What are some things that fit in both categories? (Hint: Water and soil consist of non-living and living components.)*

6. Discuss how students would study mammals in their area. Make a list of different methods and include advantages/disadvantages of each.

- *How many of you saw a mammal today? What was it?*
- *What mammals have you never seen, but you know live in this area? How could we find this out?*
- *Do you think (name a particular species) is more active during the day or night?*
- *How do you think scientists track and monitor mammals in different types of habitats? What are some advantages and disadvantages of each?*

7. Conclude the lesson stating that students will use camera traps to study wildlife in their schoolyards.

Evaluation/Extension Option:

- Mammal Profiles (worksheet on next page)
 - Students research a mammal in their area and generate a profile describing the species.
 - Refer students to the NCWRC website (www.ncwildlife.org/Learning/Species) or the NCCC field guide: [NC Mammal Field Guide](#)



My Mammal Profile

Name: _____

Create a profile of a mammal of your choosing using the [NC Wildlife Resources Commission - Mammals](#) website or the [Candid Critters field guide](#).

(1) Write the name of your mammal and draw or paste a picture of the mammal in the space below.

(2) What does your mammal eat?

(3) List three other interesting facts about your mammal.

1.

2.

3.

(4) Name one biotic (living) and one abiotic (non-living) factor that may impact your mammal and why.

Abiotic:

Biotic:

(5) Do you think we will capture this animal on the camera trap? Why or why not?

(6) What is the North Carolina Wildlife Resources Commission (NCWRC)? Why might the NCWRC be interested in monitoring your mammal?

(7) What questions do you think that camera trap data may answer about this animal?