Wildlife Habitat Riddles

Subject/Target Grade
Science/
Upper Elementary and Middle School (4-6)

Duration
30-45 minutes – Classroom setting

Materials
per class
- *Wildlife Habitat Riddle Cards* (student activity)
- *Wildlife Habitat Riddles* (transparency master)
- overhead projector
- Set of Michigan Department of Natural Resources (DNR) Non-Game Wildlife Posters (teacher should laminate these before using)
  - Coastal Dunes
  - Wetlands
  - Michigan Forests
  - Jack Pine Forest
  - Rivers
- *Optional:* Field Guides with habitat requirements of wildlife found in Michigan.

Michigan Grade Level Content Expectations

Science:
- Determine that animals require air, water, and a source of energy and building material for growth and repair. **L.OL.04.16**

Lesson Overview

Students read a series of riddles depicting the habitat requirements for specific Michigan wildlife species; they then identify the animal as well as which type of ecosystem (forest, wetland, coastal dune, or river) may offer appropriate habitat for that species.

Objectives

Students will be able to:
1. Explain that wildlife habitat refers to the place where an animal finds everything it needs to live, including food, water, air, shelter/cover, and space.
2. Match descriptions of habitats to specific Michigan animals.

Photo by Dave Kenyon, Michigan Department of Natural Resources

Background Information

What is Habitat?
Wildlife needs a place to live. For people, such a place is called "home" (although human habitat extends far beyond the home). For wildlife, the place is called their **habitat**. But wildlife habitat is not just trees, shrubs, grass, or crops. It is a complex mixture of plant communities, water, weather, animals, and other environmental features that provide the cover and food that wildlife need.

Habitat can be broken down into four parts: food, water, shelter, and space. When all parts blend together, wildlife not only survive, they thrive. Remove any one of the four parts, and wildlife must travel to find the missing component. As human populations increase, so does our impact on the natural environment. When habitats are isolated or destroyed, wildlife is crowded into smaller areas, or they are forced to find a new area. These conditions put wildlife at risk, including vulnerability to predators, parasites, accidents, and starvation. Some types of wildlife are not very mobile, and local populations may be easily extinguished when habitat is destroyed or significantly altered.

Food needs occur year around, and yet habitat may produce food only on a seasonal basis. For example, cottontail rabbits eat the inner bark of young trees and shrubs in fall, winter, and spring when cold weather has eliminated green leafy food. Food sources available one year may not be available the next. Certain varieties of acorns may feed deer, squirrels, and wood ducks but only in those years when there is a crop.

Water is needed by every living thing on Earth. Wildlife's water needs are met by rivers, creeks, ponds, springs, seeps, and other wetlands. Some birds, like bobwhite quail and pheasants, can survive on moisture content from insects, seeds, berries, and dew.

Most kinds of wildlife need shelter to protect themselves from predators and, especially during winter, from severe weather. Other types of wildlife, such as ground-nesting birds, require a safe place to lay eggs and to raise their young. Shelter can be as basic as a hollow tree used by a screech owl to rear its young or as complex as a large stand of switchgrass where a grouse can survive a severe snowstorm.

All creatures need room to roam, and many establish territories they defend from others of their kind, especially during the breeding season. This type of habitat requirement is called living space or simply, space. The exact needs and the arrangement of space differ according to species. Red squirrels, for example, can usually find enough seeds and den sites to survive in an acre or less of pines, spruce, or balsam fir trees. Wild turkeys require 500 to 2,000 acres of mature woods mixed with open fields. White-tailed deer usually need several square miles of mixed-aged forest, brush, and openings. The home territory of a gray wolf pack is 50 to 150 square miles of mostly forest and other undeveloped land.

Source: Adapted with permission from: Sargent, M.S., and K.S. Carter. (eds.). (1999). *Managing Michigan Wildlife: A Landowners Guide.* East Lansing, MI: Michigan United Conservation Clubs. Retrieved June 2, 2005, from http://www.michigandnr.com/publications/pdfs/huntingwildlifehabitat/Landowners_Guide/Introduction/TOC.htm.

Photo by Dave Kenyon, Michigan Department of Natural Resources

Procedure

1. **Introduce or review the concept of "habitat."**

   Habitat refers to the place where a plant or animal naturally lives or grows—where it finds everything it needs to live. Animal habitat includes food, water, air, shelter/cover, and space. Plant habitat includes sunlight, water, air, nutrients, and space. Ask students to identify examples of various types of habitats where a frog or maple tree might live.

2. **Use the *Wildlife Habitat Riddle Cards* to learn about animal habitats.**

   Read out loud one of the *Wildlife Habitat Riddle Cards* and have the class guess what the animal is based on the information about the animal's habitat requirements. If students need additional help, read them part or all of the additional clues listed on the cards. Display the transparency of *Wildlife Habitat Riddles* to show students a list of possible answers. Display the 5 MDNR posters (Michigan Forests, Coastal Dunes, Rivers, Wetlands, and Jack Pine Forest) where they can be seen by all students. Students may wish to refer to the posters (and possibly field guides) during this activity. Repeat this one or two more times until students understand the riddle cards.

   Organize the students into groups of three or four (or pairs) and equally distribute the remaining *Wildlife Habitat Riddle Cards.* Each group should have several cards. Have the students work in their groups to think of what animal each card is describing, and also decide which of the MDNR "ecosystem" posters that animal could find suitable habitat within.

   Have the students take turns reading the riddles to the class and agreeing on the correct answer. Students may then tape the cards to the correct poster in the classroom. (In some cases, there may be more than one poster that can provide proper habitat for an animal.)

   Optional: Answers can be recorded on the transparency, *Michigan Wildlife Habitat Riddles,* which could also be copied as a student handout.

3. **Tying it all together.**

   Discuss the following questions with students:

   Which of the animals could be found in more than one ecosystem? [White-tailed deer, common loon, and black bear are three examples that are shown on more than one of the posters.] *Why is this?* [These species can more easily find suitable habitat in more than one type of ecosystem.]

   What are some examples of other species not included on the posters that could find habitat in the ecosystem types described on the posters? [Examples: moose – wetlands, beaver – wetlands, and spring peeper frog – wetlands and forest.]

   Why would it be important to understand the habitat requirements of various species? [This knowledge enables us to better protect and/or manage them.]

   What are some examples of people who study habitat requirements in their work or for recreation? [Wildlife managers, scientists, wildlife watchers, foresters, biologists, landowners, and people who hunt or fish.]

Assessment Options

1. Have students identify examples of wildlife habitat in their schoolyard.

2. Have students select a wild animal that lives in Michigan and then research its habitat requirements. Students can then develop a "wildlife management plan" for attracting that species to the schoolyard. Students should describe specifically how this species would obtain food, water, shelter, and space. (An excellent teacher resource available online is *Managing Michigan's Wildlife: A Landowner's Guide*. Part VII of this guide provides specific considerations for attracting various wildlife species. See the Additional Resources section at the end of the lesson for details.)

Mitchell's Satyr Butterfly
Photo by Dave Kenyon, Michigan Department of Natural Resources

Modifications/Extensions

1. **Riddles Learning Center.** Instead of conducting this activity as a whole-class activity, use the *Wildlife Habitat Riddles* to develop a learning center activity or bulletin board display.

2. **Small Group Activity.** Students can complete the activity in small groups. Provide each group with all of the riddles and a copy of the student activity page. Teacher can review the answers or allow students to check their own, using the provided answer key.

3. **Creating Riddle Cards.** Have students write their own Wildlife Habitat Riddle Cards. (Students will need field guides or resource material to research wildlife habitat requirements.) Organize the students into groups or pairs, and assign each group to one of the five MDNR Posters (Michigan Forests, Coastal Dunes, Rivers, Wetlands, Jack Pine Forest). Have the students create three to five of their own riddles related to their poster. Riddles can be written on 3 x 5 index cards, with lettering or numbering system, and a separate answer key provided to the teacher. When complete, students can share their riddles with the rest of students, who can then try to answer them. Some suggestions include focusing on endangered and threatened species of Michigan, or species that are NOT already on the posters (e.g., mountain lion, beaver, mallard ducks, snapping turtle, little brown bat, spring peeper, and garter snake).

References

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Ehrlich, P., D. Dobkin, and D. Wheye. (1988). *The Birder's Handbook: A Field Guide to the Natural History of North American Birds*. New York: Simon & Schuster, Inc., Fireside Books.

Harding, J. (1997). *Amphibians and Reptiles of the Great Lakes Region*. Ann Arbor, MI: The University of Michigan Press.

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Sargent, M.S., and K.S. Carter (eds.). (1999). *Managing Michigan Wildlife: A Landowners Guide.* East Lansing, MI: Michigan United Conservation Clubs.

Additional Resource

Sargent, M.S, and K.S. Carter (eds.). (1999). *Managing Michigan Wildlife: A Landowners Guide.* East Lansing, MI: Michigan United Conservation Clubs. This guide was written to provide landowners with ideas for improving wildlife habitat on their property. Information on how to attract wildlife to a backyard setting could be applied in a schoolyard setting. Additionally, there is specific information on creating habitat for Michigan species (rabbits, birds, bats, etc.). Retrieved June 2, 2005, from http://www.michigandnr.com/publications/pdfs/huntingwildlifehabitat/Landowners_Guide/