



# Habitat: Who Needs It?



## In a Nutshell

Students will consider the differences between wild and domestic animals. Understanding these differences will help students better understand the unique qualities of the National Wildlife Refuge System. Students will then investigate and compare three refuge habitats looking for sources of food, water, shelter and space in each.

Grades	K-6
Seasons	Fall, Winter, Spring
Location	Visitor Center

## Learning Objectives

After participating in this activity, students will be able to:

- identify that National Wildlife Refuges protect habitat.
- explain how protecting habitat benefits wildlife.
- list the 4 major components of habitat: food, water, shelter, and space.
- describe at least two ways prairie, wetland, and forest habitats differ.
- explain that National Wildlife Refuges are found throughout the U.S.

## Literature Connections

Hey, Little Ant by Phillip & Hannah Hoose (NP)

I Took a Walk by Henry Cole (AD190L)

One Small Square: Pond by Donald Silver

One Small Square: Woods by Donald Silver

The Salamander Room by Anne Mazer (AD660L)

Wildlife Refuge: A Classroom Adventure by Lorraine Ward

The Secret Place by Eve Bunting (AD590L)

Habitat Spy by Cynthia Kieber-King & Christina Wald

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### Pre-Visit Suggestions

Any of the following Project WILD activities:

*What's Wild (K-4):* Students distinguish between wild and domesticated animals.

*Everybody Needs a Home (K-4):* Students discover that people and animals share basic survival needs.

*Play Habitat Wheel (4-6):* Students discover the components of habitat through a vocabulary building version of “The Wheel of Fortune”.

### On-site Activities

Watching a video presentation, students will learn how the U.S. Fish and Wildlife Service provides habitat for many plants and animals throughout the United States. Students will discover how a National Wildlife Refuge is different from zoos, sanctuaries, and rehabilitation centers. Students will then explore and compare the main Refuge habitats (forest, wetland, and prairie) and look for places where animals may find food, water, and shelter.

### Classroom Connection

Take a “hike” around your schoolyard habitat looking for homes where animals may live.

Read the Literature Connection book *Wildlife Refuge: A Classroom Adventure* to your students (provided on loan from the refuge upon request). Help students compare the habitats of a coastal refuge to the habitats of Minnesota Valley National Wildlife Refuge. Find Aransas National Wildlife Refuge on a map as a reminder that there are over 550 refuges in the National Wildlife Refuge System.

Create a Classroom Habitat Mural. Divide the mural into three sections or cut three pieces of white butcher paper, one for each habitat the students explored. Draw a very general background for the students on each piece so they easily recognize which section is wetland, prairie, or forest. Encourage the children to

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color in more detail in each habitat background. Provide pictures of wildlife to cut out and paste to the appropriate habitat mural. Instruct them to fill in food, a water source, and shelter for the animals they add to the mural. Display the mural section in the classroom or school.

### Teacher Resources

Minnesota's Natural Heritage: An Ecological Perspective by John Tester

Nature Smart Family Guide to Nature by Karen Shanberg and Stan Tekiela

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## Habitat-Who Needs It? Pre-visit Activity

Follow the directions for the activity most appropriate to the grade level of your class.

### What's Wild (K-4)

Students distinguish between wild and domesticated animals.

### Materials

- Large dry-erase board
- Dry-erase markers
- Assortment of puppets, stuffed animals, and pictures representing domestic and wild MN animals

### Activity

The following activity is adapted from the Project Wild Activity *What's Wild*.

#### Grades K-2

Use the assortment of puppets, stuffed animals and pictures provided by the refuge for younger grades. Lead the class in a discussion of the differences between domestic and wildlife animals centered on the theme of habitat (the place where an animal lives). Use the puppets, stuffed animals and pictures as props. Here is one discussion example:

<b>Domestic Animals</b>	<b>Wild Animals</b>
Shelter: animals depend on people to provide (hamster picture)	Shelter: animals find and or build their own (mouse puppet)
Food: animals depend on people to buy and provide (dog stuffed animal)	Food: animals hunt or gather their own (fox puppet)
Space (or Territory): People usually determine with an enclosure, leash, fence or cage (horse picture)	Space (or Territory): How much space animals use is determined by what they eat, how they hunt and their mating characteristics (wolf puppet)
Reactions to People: Domestic animals enjoy the company of people or are at least indifferent to their presence.	Reactions to People: Wild animals are generally wary or afraid of people. Will hide or run away when people approach.

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After the class discussion allow students to sort the remaining puppets, stuffed animals and pictures into the two categories. Discuss the different types of shelters wild and domestic animals need, the different foods they eat, and the different amounts of space they need.

### Grades 3-4

Ask students to bring in pictures of animals as described in the Project Wild activity with the clarification that they should be NATIVE animals, those that are found in Minnesota. Use the table above to lead a discussion highlighting the major differences between domestic and wild animals. Assist students to create domestic and wild posters using the pictures they collected and brought to the classroom. Of the pictures on the newly created Minnesota Native Wildlife poster, which pictures represent animals that use Minnesota Valley National Wildlife Refuge as their home? Which of those animals are they likely to encounter during their fieldtrip considering the season and time of day of their visit?

### Introduction to Being a Naturalist (20 min)

Introduce students to the concept of being a “naturalist” – someone who enjoys being outside and learning about nature. ANYONE can be a naturalist – being a naturalist is a way of thinking, and a way of behaving. Using a large flipchart page, ask students to brainstorm characteristics of a naturalist. One way to do this is by asking the question, “If you want to spend time outside and learn about nature, how should you act?” You can prompt students with questions like, “is it a good idea for naturalists to be noisy? (Naturalists are quiet). Should we plan ahead for being outside? (Naturalists are prepared). Should we chase after animals, or pick plants? (Naturalists are respectful). Do we want to make a giant trail through the prairie? (Naturalists leave no trace).” Once you’ve come up with a good list of naturalist traits, leave that list in the classroom, and remind them to think about that list all year long as they partner with the refuge. Remind them that they’re not just naturalists when they’re visiting the refuge, but all the time (in their own backyard, in the schoolyard, when they’re reading about nature, etc.) They can (and we hope they will!) be naturalists their whole lives!

## Habitat-Who Needs It? Pre-visit Activity

### Everybody Needs a Home (K-4)

Students discover that people and animals share basic survival needs.

### Materials

- Large dry-erase board
- Dry-erase markers
- Paper (8½" x 11", 1 for each student)
- Crayons/colored pencils/markers
- Animal mount/pelt



### Activity

The following activity is adapted from the Project Wild Activity *Everybody Needs a Home* (page 59) with the following adjustments:

1. Begin with a class discussion of the term "habitat." What is habitat? What are the components of habitat that every living thing needs to survive? Habitat is the place a plant or an animal lives. The components are: food, water (free of contaminants), shelter and space (also sometimes thought of as territory) combined in a suitable arrangement.
2. Draw a large square on a dry erase board explaining to the students that the class will work together to construct a "dream home." Ask students to list everything that they would need and want in this home. As the students list their ideas, begin to draw their items in the square outline. Include as many of the students' suggestions that you have space and time for.
3. If the students neglect to mention critical items necessary to their survival, a kitchen for example, prompt them with questions like the following: Do we have everything we need to live for a day...a week...a month in this house? What have we forgotten to include?

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4. Once the class agrees that the dream home is finished ask the students if they could live in this dream home forever. The answer is no, we depend on our communities to meet our needs. Ask students for examples of how our communities help to meet our needs. List their responses on the board. Some responses might be: hospitals when we are sick, malls when we need new clothes, and grocery stores for buying food.
5. Add their community components to the board around the class "dream home".
6. Now show the students the animal mount or pelt provided. Let the students guess the name of the animal it represents. Ask students to list everything that would be in this animal's "dream home," including what it needs within its community. Create a drawing from student responses on the dry-erase board.
7. Provide paper to each student and ask them to pick their favorite wild animal and draw the animal in its habitat. Instruct them to include all the habitat components this animal needs to survive in the wild.
8. Time permitting, students can also write a paragraph about their animal and then share their drawing and writing with the class.

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think about that list all year long as they partner with the refuge. Remind them that they're not just naturalists when they're visiting the refuge, but all the time (in their own backyard, in the schoolyard, when they're reading about nature, etc.) They can (and we hope they will!) be naturalists their whole lives!

### Wrap-up

Discuss the logistics for their upcoming refuge field visit including how to dress for the weather.

## Habitat-Who Needs It? Pre-visit Activity

### Habitat Wheel (4-5)

Students discover the components of habitat while building their science vocabulary in this version of game show “The Wheel of Fortune.”

### Materials

- Large dry-erase board
- Dry-erase markers
- Habitat Pictures: wetland, prairie, forest

### Introduction

List the following 11 habitat terms on the board.

#### HABITAT

Food  
Water  
Shelter  
Space  
Arrangement

Neighbors  
Community  
Ecology

Forest  
Prairie  
Wetland

Introduce the word “Habitat.” Explain to students that every other term on the board relates to the question “What is a habitat?”

The first block of terms: food, water, shelter and space are components of habitat. *An animal’s habitat provides food, water, shelter, and space for each animal. Besides just being present, these habitat components must be in a suitable arrangement. For example: A forest may have plenty of tree cavities for squirrels, plenty of food and water, but if all the shelter (tree cavities) are concentrated in one corner of a forest with the only source of water far away, squirrel survival is limited by an unsuitable arrangement. It would be like living in one bedroom with ten family members with the only source of water a mile away!*

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The next block of terms: neighbors, community, and ecology relate to the interactions between animals and between animals and plants within a habitat. Help students brainstorm how the terms neighbors and community relate to habitat. *Animals depend on their neighbors the same way that people often do. For example, the squirrel depends on woodpeckers to create the tree cavities they use after the woodpeckers have abandoned them. Flies lay their eggs on goldenrod plants enabling their larvae to survive winter. Geese often nest on top of the huts built by muskrats. Together all the neighbors in a habitat make up a community and the study of how animals interact with their neighbors and other community factors is called ecology.*

The last block of terms: forest, prairie, and wetland are examples of types of habitat. As you discuss these terms with the students, select one habitat from the list and begin a drawing, or use the pictures provided, on the board that represent the plants and animals. Invite students to draw and label habitat components. Introduce the term ecology and ask the students to start looking for relationships between the animals and between the animals and plants in the habitat. How do neighbors impact each other? Add arrows to indicate relationships.

### Activity

#### Habitat Wheel of Fortune

This game is a cross between hangman and wheel of fortune.

#### Game Phrases\*

- A habitat is the place where an animal lives.
- Habitats provide food, water, shelter, and space.
- Habitat components must be arranged well for animal survival.
- Animals depend on their neighbors for survival.
- A group of animals in an area is called a community.
- Ecology is the study of how living things interact with each other.
- The refuge has prairie, forest, and wetland habitats.

#### Game Vocabulary\*

Habitat	Water	Neighbors	Forest
Shelter	Space	Community	Prairie
Arrangement	Food	Ecology	Wetland

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\*Add your own vocabulary or phrases based on student discussion in the activity introduction.

### How to play

1. Pick a phrase or vocabulary word from the list above. Draw out a dashed line to represent each letter on the board.  
For example, the phrase "Squirrels nest in tree cavities" should look like this: \_\_\_\_\_.
2. List the alphabet on the side of the board.
3. Group students into 4-5 teams. Assign each team a number and roll a dice to see who goes first. The team number closest to the dice roll goes first. Play then moves clockwise.
4. Instruct the first team to pick a letter from the list on the board. Each letter is worth one point for every time it appears in the word or phrase. For example, if a team selects the letter "s", in this phrase they earn four points.  
S \_\_\_\_\_ S \_ S \_ \_ \_ \_ \_ \_ \_ \_ \_ S.
5. Erase letters from the alphabet list as they are selected. A team continues to play until they select a letter that is not part of the word or phrase or they make an incorrect guess of the word or phrase.
6. A team can only "buy" vowels. Vowels "cost" 1 point for each time it appears in the word or phrase. For example, if a team "buys" the vowel I, 5 points must be deducted from the team's score.  
S \_ \_ i \_ \_ \_ \_ S \_ \_ S \_ i \_ \_ \_ \_ \_ \_ \_ i \_ i \_ \_ S.
7. The first team that correctly guesses the phrase or word earns 5 points.
8. Continue play until the end of the class period adding new phrases and words as time allows. At the end, total each team's points. The team with the most points wins the game.

## Introduction to Being a Naturalist (20 min)

Introduce students to the concept of being a “naturalist” – someone who enjoys being outside and learning about nature. **ANYONE** can be a naturalist – being a naturalist is a way of thinking, and a way of behaving. Using a large flipchart page, ask students to brainstorm characteristics of a naturalist. One way to do this is by asking the question, “If you want to spend time outside and learn about nature, how should you act?” You can prompt students with questions like, “is it a good idea for naturalists to be noisy? (Naturalists are quiet). Should we plan ahead for being outside? (Naturalists are prepared). Should we chase after animals, or pick plants? (Naturalists are respectful). Do we want to make a giant trail through the prairie? (Naturalists leave no trace).” Once you’ve come up with a good list of naturalist traits, leave that list in the classroom, and remind them to think about that list all year long as they partner with the refuge. Remind them that they’re not just naturalists when they’re visiting the refuge, but all the time (in their own backyard, in the schoolyard, when they’re reading about nature, etc.) They can (and we hope they will!) be naturalists their whole lives!

## Wrap-up

Explain to the students that understanding the value of each habitat component prepares them to better explore habitats. During the fieldtrip to the refuge they will plan their habitat investigation using the KWL model: *What Do I Know*, *What Do I Want to Know*, and *What Did I Learn*. For example, students might decide to observe woodpeckers to determine how they move through the forest and what they eat. Another group might decide to identify potential food plants or count the number of geese nesting on muskrat houses. Ask students to think about the questions they have about wetlands, prairie and forests and how they can investigate these habitats to discover the answers to their questions. What equipment might they need to take along on their hike?

## Habitat-Who Needs It? On-site Activity

### Materials

- Wetland habitat model
- Prairie habitat model
- Forest habitat model
- Wildlife puppets (1-3 associated with each habitat model)
- MN Valley NWR Teaching Map
- Posters- generic for each habitat

### Introduction

Inside Visitor Center (30 minutes)

Welcome students to the Minnesota Valley National Wildlife Refuge. Use the teaching map to show students where the refuge is located in relation to their school, the Minnesota River, and places they are familiar with such as Valley Fair, the Renaissance Festival and the Mall of America. Remind them that they are naturalists, and go over what it means to be a naturalist!

Ask students if they remember what a habitat is. (Hint: they each have one!) A habitat is a place where animals (and people) can find everything they need to survive. Compare a natural habitat to the children's habitat. Discuss the essentials for life (what every living creature needs to live): food, water, shelter, and space sometimes also thought of as territory.

- Food- provides energy
- Water- obtained by drinking or through the animal's food
- Shelter- protection from the elements and predators
- Space- the space animals occupy where they find food, water, and shelter

*Do all animals live in the same habitat?*

Of course not! The habitat an animal lives in depends on the type of food it is designed to eat, the type of shelter it is designed to build, and the amount of space, or territory, it needs to find proper food and shelter.

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*Can animals survive without the proper, healthy habitat?*

No, habitat is essential to the survival of any living thing! Using the wetland pool, prairie grass model and tree prop have the children decide which animal puppets belong in which habitats. After all the animals have been used, talk about how the community of animals might interact with each other. For example: Would a fox and rabbit (both citizens of the forest) live in the same type of shelter and eat the same thing?

### Management Connection

Why is the National Wildlife Refuge System essential to wildlife survival? Help them define the word refuge. Correct any misconceptions the students might have about wildlife refuges.

#### Common Misconceptions

- Refuges are like zoos. (Definitely not)  
Unlike zoos, animals on National Wildlife Refuges are wild, free to come and go, and find their own food. Many waterfowl and songbirds only pass through the refuge during their spring and fall migration. Other wildlife makes the refuge their home all year.
- Refuges are a wildlife sanctuary. (Not Really)  
Refuge wildlife is not “protected” from hunters, predators, or weather events. The balance between predator and prey is a natural cycle that once existed wherever wild populations of animals were found. Allowing hunting is a way to reestablish that predator/prey balance back into an area. Hunters now replace wolves, bears and other large predators that have been lost with an increase in building and development.
- Refuges are a place to bring injured wildlife. (No)  
Wildlife rehabilitation takes special training and licensing, medical facilities, and staff that can provide long term care for injured animals. Wildlife refuges are not set-up for these situations.

If the refuge system does not feed, house, “protect” (except in the case of an endangered species), or rehabilitate wildlife then how

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do refuges help in the conservation of wildlife? **Refuges protect and improve the critical habitat wildlife need to survive!**

Show one of the videos: “America’s National Wildlife Refuge System: Where Wildlife Comes First” or “A Place for Wildlife and People”. Ask students questions about the video such as:

- Which state does not have a wildlife refuge?
- Of the animals you saw, which ones might live here at Minnesota Valley NWR?
- Which animals in the video were from refuges not in Minnesota?
- What can people do on a wildlife refuge?

Tell students that today they are going to visit the “neighborhoods” of the refuge. Now is the time to compare animals and the different habitats they live in.

*Note: It is easier for children to see the differences between animals by discussing vastly different species. Contrasting fish to foxes, woodpeckers to turtles, and spiders to wolves are good ways for children to understand that not all living creatures need the same types of food and shelter, and therefore can not survive in the same habitat. Comparing similar animals, such as songbirds, is a good way to discuss how animals use different survival techniques in order to co-exist in a habitat.*

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### Hike

On refuge (60 minutes)

Use the KWL teaching method: *What I Know*, *What I Want to Know* and *What I Learned* to lead an exploratory hike through the three main habitat types on the refuge. Divide the dry erase board into sections and label each one according to the habitats you will visit. Ask students to help you make a list of what they know and what they want to know about each habitat. Pass out clipboards, pencils and the grade specific journal page to each student. Explain that this journal page is where they will record what they see and hear during their hike. They can record using words or pictures as they explore the habitats of the refuge.

	Prairie	Forest	Wetland
K			
W			
L			

During the hike have them search for large and small signs of animals, such as holes in the ground, webs, nests, tracks and trails. Encourage them to find each component of habitat. Where can animals find shelter in each habitat? What kind of foods are or are not available in each habitat? Where would animals find water?

Parent chaperones should let the children explore individually as well as within the group and encourage their curiosity.

### Wrap-up

In classroom (30 minutes)

Back in the classroom, review the list of things students wanted to know about each habitat in the KWL model. Compare what they saw in the prairie with what they saw in the forest and in the wetland.

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What did they learn? Did their investigation uncover new questions to investigate? If so, instruct students to add them to their journal pages. How can they find the answers themselves? Perhaps they can return with an adult to explore further or visit a nearby park or nature center. They can conduct their own research using classroom and library books or safe, reliable on-line sites.

## Habitat-Who Needs It? Rainy Day Hike Alternatives

### Materials

- Swimming Pool
- Prairie grass model
- Tree
- Wildlife puppets- 1 per student
- Habitat Puzzles
- Lanyard photographs of wildlife in each habitat- 1 per student
- Habitat Rummy Activity Kit- check out from resource library prior

### Inside Activity (for K-1<sup>st</sup> grade)

#### Puppet and Habitat Match-up

Set the pool, prairie grass, and tree out in your teaching area. Let the children choose a puppet from a pile, and have them individually decide which habitat each animal would best be suited to: forest, wetland, or prairie. Have them put their puppet in its appropriate habitat. After all animals have been placed in a habitat, talk about each community. How would the animals interact and/or co-exist? Would a fox and rabbit (both citizens of the forest) live in the same type of shelter and eat the same thing?

### Inside Activity (for 2<sup>nd</sup> -3<sup>rd</sup> grade)

#### Habitat Puzzles

Split the children into three groups, and have each group put together the habitat puzzles located at the Bloomington Visitor Center. Once they have finished, give each student an animal picture (on lanyards) and have them pick their appropriate habitat. Once all the children are standing on their puzzle, discuss the community of animals and plants and how they interact with each other and with their environment. Encourage students to role play their animals and interactions with one another.

## Inside Activity (for K -3<sup>rd</sup> grade)

### Habitat Murals

Split the children into three groups. Each group will create a habitat mural (forest, prairie, wetland) using butcher paper, crayons, animal pictures, & glue.

## Inside Activity (for 4<sup>th</sup> grade and up)

### Habitat Rummy

Use the Project WILD Minnesota *Habitat Rummy* card game to identify the components of habitat and the habitat requirements of various species of animals that live in the 4 major Minnesota Biomes: Prairie, Coniferous/Boreal Forest, Wetlands, and Deciduous/Hardwood Forest. Game instructions are included with the cards however we suggest you review the rules prior to use.

### Who Am I?

Have students place a lanyard around their neck with an animal picture facing up on their back where they can not see it but other students can. Instruct students to ask each other a series of YES or NO questions to try and figure out what animal they are. Start with broad questions like: Do I live in the wetland? Do I live in the prairie? Do I live in the forest? Then ask increasingly specific questions like: Do I eat meat? Do I have brown fur? Do I have feathers?