

# Timber Wolf Habitat

**Age:** 3<sup>rd</sup> Grade

**Objectives:** Students will be able to...

- Describe the habitat of a wolf
- Articulate how a wolf maintains its territory
- Identify food and prey of the wolf
- Identify the senses used by a wolf while tracking
- Explain the wolves' need for a large area to live

## Standards

NGSS 3-LS2-1 Construct an argument that some animals form groups that help members survive.

NGSS 3-LS4-3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

NGSS 4-LS1-2 Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to information in different ways.

## Background Information

Every animal on earth needs food, water, and shelter to help it stay alive. Wolves, like other animals and people need enough space to find the food, water, and shelter needed to survive. Wolves survive well in forests because they can use trees and bushes to hide from man or other predators. Wolves can be found in open areas, too. The frozen tundra of the far north is an example, few humans live in this area.

Wolves need large spaces to raise a family. Each wolf pack may live in an area of around 100 square miles. In the Midwest, it averages 40-50 square miles. Wolves need this space in order to find plentiful food sources. With the encroachment of humans onto their territories, wolves are becoming less able to live the landscape. Wolves are very protective of their territory. They mark their territory as dogs do, by mostly urination. The markings are heaviest around the perimeter of the territory. This, as well as howling, warns other wolves.

The wolf is carnivorous. Its long canine teeth are used to seize animals, they have 42 teeth. The wolf's muscular body and keen senses enable the wolf to capture animals larger than itself. The wolf is also agile to avoid injury from sharp antlers and hooves. The wolf can hear sounds undetected by human ears and its sense of smell is 100 times more sensitive than humans.

The wolf relies on these animals for food: caribou, bison, moose, mountain sheep, deer, rabbit, beaver, and mice. In Wisconsin, the timber wolf preys on mainly rabbit, deer, rodents, and beaver. Attacks by wolves on humans, though, are extremely rare. As of June 2017, only 2 confirmed deaths of humans from wolves have occurred over the last 100 years in North America.

## Materials

- Large map of WI or your state

- Pictures of caribou, bison, moose, elk, mountain sheep, deer, rabbit, beaver, cattle and mice (prey)
- Device to play a sound clip
- Scent Markers
- 6 Sponges
- 8 small bottles of liquid flavor extracts
- 8 zip lock bags (sandwich size)

## Introduction

Describe where we think the wolf lives. Options may include having a share of qualities of the habitat or having them do a predictive drawing.

“Today we will talk about the wolf’s habitat and what it needs to survive- food and space.”

## Lesson

1. Prey
  - a. Ask students and record their answers, what do we think wolves eat?
  - b. Show them pictures of the answers they gave. (Main prey: caribou, elk, bison, moose, mountain sheep, muskoxen, deer, rabbit, beaver, and mice; wolves may also eat berries or plants)
  - c. Show them pictures of the animals they did not say. Show the “cattle” picture last. Let the students know that sometimes wolves will attack farm animals for food.
  - d. Ask a few students to come and take out which wild animals live in their state. (Wisconsin would be deer, beaver, rabbits).
    - i. Ask them where they may find some of the other animals in the world.
    - ii. Ask them where the animals in their state are found? (where do the prey live?)
  - e. Examine the prey. Split into smaller groups and have them discuss the following questions and hand out an animal to each group.
    - i. Where does your animal live?
    - ii. How do you think wolves catch this animal?
    - iii. How does its size compare to the wolf?
  - f. Have students share their small group discussions.
2. Wolf Range

- a. Show students a picture of Wisconsin (or your state) and point out where on the map wolves live. See here for 2017 range of wolves, you may also go on the state's website to better see range. There are about 925 wolves (2017) in WI.



- b. Explain that the area needed for each wolf pack is quite large. At least 40-50 square miles. (Could produce some math problems to estimate how many packs could fit in a particular area).
- c. Ask the students who wolves keep other wolves out of their area? Scent marking (urination) provides a warning to wondering packs. Explain how wolves have very good sense of smell, scientists predict that wolves can smell the different individual wolves based on their urination.
- d. Ask students why other wolves may want to come to their territory? Look for food, or more space. Wolves, if needed, will challenge other wolves for territory when looking for food. Explain that in Yellowstone National Park the biggest reason why wolves die is because of other wolves.
- e. If other wolves are heard, the natal pack will howl to warn away the unwanted visitors. Play this clip for students to hear the sounds of a wolf pack:  
<https://www.youtube.com/watch?v=op7fRsvWowA>
- f. Have students try howling like wolves. Explain that scientists will go howling for wolves to determine where packs are living and how many individuals are in a pack.

3. Predator Prey Game (adapted from the Ranger Rick Magazine, March, 1989)
- a. Version 1

Select one person to be a predator. The rest of the children are prey hiding from the predator. During the first round, children can hide in an area of no more than 40 feet from the predator. Let the students know this range before the game starts. Explain how the students may want to try to blend in with what is around them, depending on what they are wearing. Have all prey start at a specific place, about 40 feet away from predator.

The children are given 20 seconds to hide. The predator stays in place and closes their eyes. When the time is up, the prey must be hidden and the predator opens his/her eyes. The predator gets 20 seconds to try to find as many prey as he/she can, those individuals stand by the predator, after the time is up the rest of the individuals are the "winners."

Play 2 and 3 more rounds. Have the range of where people can be decrease to 20 feet and then to 10 feet. Ask the students what changed as the range of the area got smaller. How does the size of the territory affect the hunting? Ask the students if this is realistic. No, because all the prey wouldn't be so close together like in round 3. This is why a territory has to be large, so they can find enough prey to survive. All animals need their space and for animals to survive they need diverse, large habitats to hide.

b. Version 2

Select one student to be the deer, or "prey" of the wolf. The rest of the students are the predators, or wolves. Have the predators form a large circle around the prey. Explain that the goal of the game is for the prey to protect itself from becoming food. To make the game more difficult the deer is blindfolded. Spin the deer to begin. The wolves should silently move towards the deer one step at a time. When the deer hears a sound from a predator, he/she points at that direction. When the deer points, everyone must freeze. Whoever the deer is pointing at is removed from the game. Game ends when a wolf eats the deer. Play several times.

Could play on various surfaces, which surface was best for prey and for predator. Walking in a grass may be different than the cement. Also discuss advantages of group hunting: catch larger prey, help older or disadvantaged wolves get dinner. Explain that the alpha wolves usually eat first and there may not be enough food for all wolves in the pack. This is also why individuals may leave to create their own pack.

4. Scent Game (Adapted from Outdoor Biology Instructional Strategies)

a. **Objective** of the game is for the wolves to track a deer's territorial scent to find food to survive.

b. **Before game:** cut the sponges into cubes (2cm x 2cm). Place 13 cubes in each bag. Place two capfuls of liquid extract into each bag, each bag being a different scent. Seal the bag to saturate the sponges. Find a location to lay, outside would be good and an area with some hiding spots.

c. **To play:** Split the group in two equal sized groups. One group will be wolves the other group deer. Blindfold the "wolves" or have wait in another area. Give each wolf in the first group a different scent sponge. This is the scent they will follow to find the deer.

While the wolves are waiting, give each deer a bag of sponges. Have them start all from a central place. Have students drop their scent sponges every 5 to 10 feet.

Tails of different deer can cross or intermingle to confuse the wolves. When the deer are finished, have them hid within 10 feet of their last sponge and wait.

The wolves then come back and begin at the starting point. Let the students know they cannot touch the sponge. Follow their personal scent until they find the deer. May switch roles and play again. For younger groups, have them be in partners for the wolves.

d. Ask students if it was difficult. How do you think it would be for a wolf to track a deer? Remember they have 100 times better scent than us.

## Extensions

Social Studies

- Have students shade in on the state map where wolf packs are living
- Research wolf range over the past 100 years in your state and show how the range changes overtime

#### Math

- Measure the school area outside and compare it the wolf territory
- Calculate how many deer wolves in WI eat each year. A wolf eats 15-19 deer per year. There are around 925 wolves in WI. How does that compare with the deer population in the state and how many deer are killed by hunters or cars.

#### Art

- Make a collage showing prey
- Paint or draw a wolf in its natural environment

#### Science

- Design a diorama of a wolf's perfect environment
- Create a food web involving the wolf as the top predator

#### Literacy

- Interview a "wolf" and record it. Ask the wolf questions about his/her habitat, prey, and status in WI.
- Write a story describing a wolf in its environment
- Read a story book (see Reading list) about a wolf living in its environment. Make comparisons to what we learned in this lesson.
- Make a class video about the wolf
- Write a "newspaper" story about the lack of space for a wolf. Include reasons why and how we can help.

#### Closure

Have students get in a circle. Take a throwie or ball and toss it to a student and ask them to share one thing they learned. Have that child toss it to another student, continue this until no one else has anything to add.

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*Produced by the Timber Wolf Alliance*



## Caribou



Retrieved from: <http://kids.nationalgeographic.com/animals/caribou/>

## Deer



Retrieved from: <http://clarksvillenow.com/local/tennessee-and-kentucky-deer-seasons-wind-down/>

## Muskoxen



Retrieved from: <http://scienceblogs.com/laelaps/2010/03/10/of-all-the-mass-extinctions/>

## Beaver



Retrieved: <http://animalsadda.com/beavers/>

## Snowshoe Hare



Retrieved from: <https://www.treehugger.com/animals/snowshoe-hares-moving-farther-north-due-lack-snow.html>

## Mountain Sheep



Retrieved from: <https://www.britannica.com/animal/bighorn-sheep>



## Moose



Retrieved from: <http://www.nhptv.org/natureworks/moose.htm>

## Elk



Retrieved from: <https://elknetwork.com/elkfacts/>

## Cattle



Retrieved from: [https://commons.wikimedia.org/wiki/File:Cattle\\_\(1\).jpg](https://commons.wikimedia.org/wiki/File:Cattle_(1).jpg)

## Mice



Retrieved: <http://www.sciencemag.org/news/2016/10/mice-feel-each-others-pain>

## Bison



Retrieved from: <https://www.britannica.com/animal/American-bison>