

**Wilderness Investigation 4: Preserving Wilderness Character**

**What is wilderness character and why is it important?**

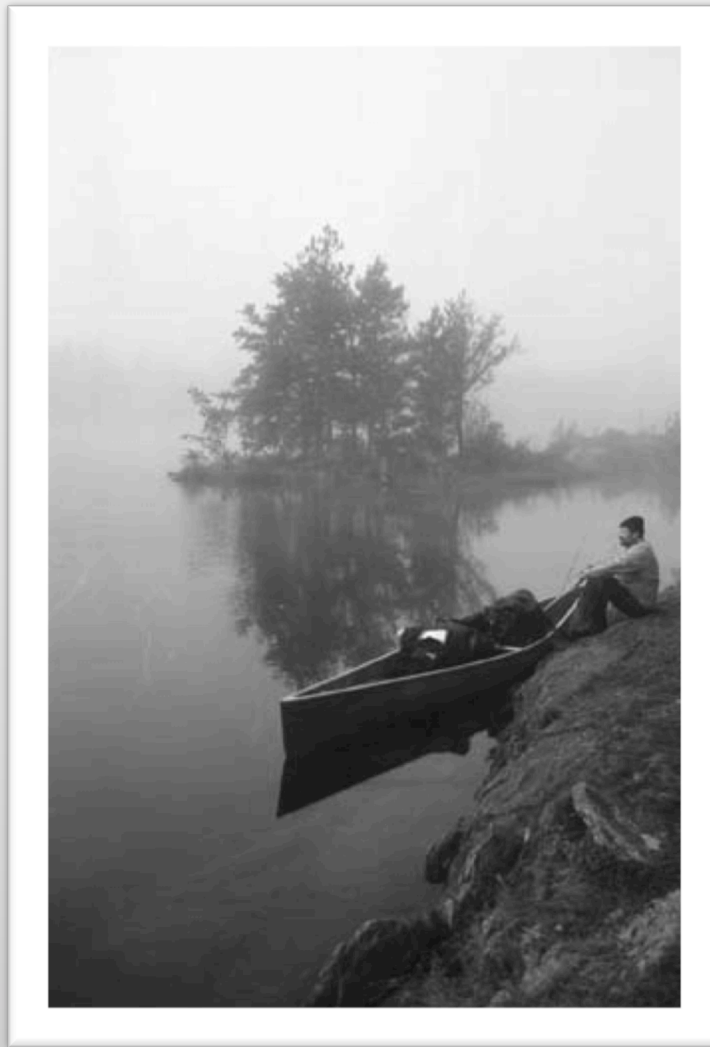


Image of the Boundary Waters Canoe Area Wilderness

## Wilderness Investigation 4: Preserving Wilderness Character

### What is wilderness character and why is it important?

#### Investigation Summary:

Wilderness Investigation #4 explores the wilderness characteristics identified in the Wilderness Act of 1964. Students will learn to use and define the word *characteristic*. Students will learn examples of how each characteristic might look in a wild place. They will also explore a wild place in small groups to identify wild characteristics and represent their findings in the form of a concept map or geographic map.

#### Note to Parents:

The Wilderness Investigations note for the parents provides parents with a brief overview of what students are studying about wilderness. The letter also gives suggestions for discussion topics and activities. This letter may be tailored for teachers' specific needs.

#### Wilderness in the Classroom:

Students will learn the word *characteristic* and generate a list of characteristics that describe a person in the class. They will then compare the characteristics of two students. The class will review their list of characteristics that describe wilderness from WI #1 and add to the list. They will watch a brief video about wilderness and the Wilderness Act and learn about the four characteristics that describe wilderness character and what they can and cannot do in designated wilderness.

#### Wilderness Hero with discussion and extension ideas:

Students will learn about the "wild" life of John Muir and his influential efforts that lead to the protection of Yosemite National Park. Students may trace John Muir's adventurous life journey from Scotland to California.

#### Wilderness Outside of the Classroom:

Students will examine the characteristics of a wild place. In small groups they will compile their findings in one of two forms: a concept map or a geographic map. Students will compare and contrast their findings with other groups.

#### Wilderness Profile with discussion and extension ideas:

The Boundary Waters Canoe Area Wilderness is an amazing protected area on the border of northern Minnesota and Canada. Students will locate the wilderness and investigate the interconnected waterways that lead to the Atlantic Ocean.

#### Wilderness Show and Tell:

Teachers and students may share their observations, investigations, and ideas about wilderness with others. Each Wilderness Investigation is an opportunity to share the value of America's wilderness and the Wilderness Act with others.

**Wilderness Investigation 4: Preserving Wilderness Character****What is wilderness character and why is it important?****Note to Parents**

Dear Parents and Guardians,

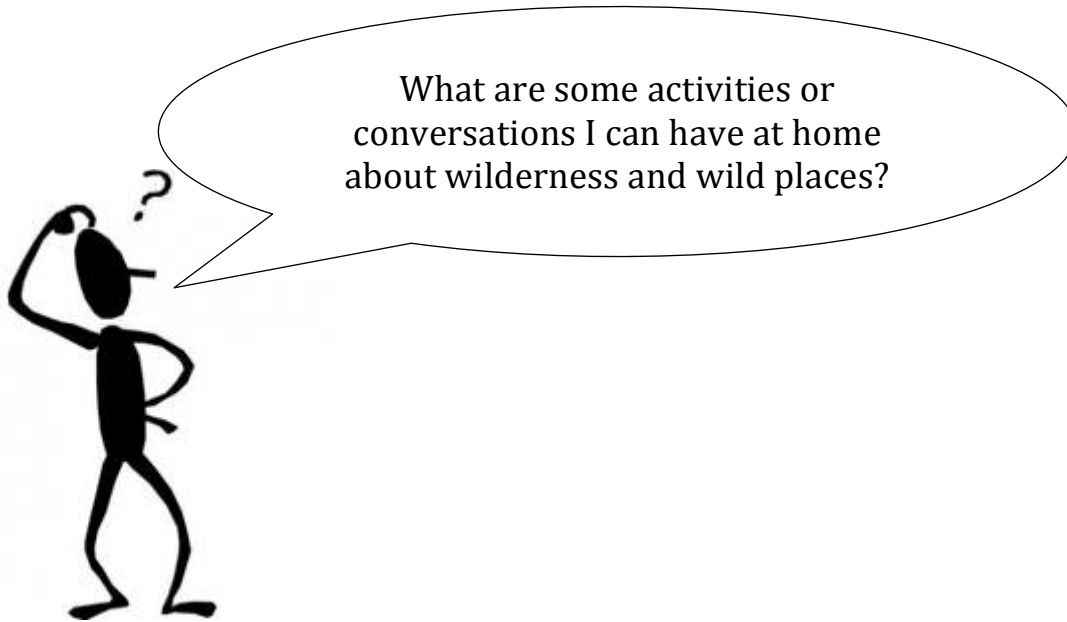
Your child is continuing a series of wilderness investigations. There are five total investigations. The current investigation is in **bold** print.

1. What is Wilderness?
  - Students will explore the characteristics of wilderness and learn about the Wilderness Act of 1964. What do we expect to find in wilderness? What are some words we can use to describe wilderness?
2. Wilderness for All American People of Present and Future Generations
  - Students will study the concept of public lands and public spaces. Who can visit wilderness?
3. Outstanding Opportunities
  - Students will evaluate what people can do in wilderness. What can you do in wilderness?
- 4. Preservation of Wilderness Character**
  - Students will examine the idea of wilderness character and how it applies to different wild places. Why is wilderness character important to protect?
5. Our Wilderness Heritage
  - Students will learn about America's history of protecting and valuing wilderness. How can we get involved in preserving our wild places?

At the beginning of each investigation you will receive a letter about what your child is learning. The letter will provide you with ideas and information about how you can extend learning into your family, and inform you about school activities related to the investigations. Thank you for supporting Wilderness Investigations.

Sincerely,

The Creators of Wilderness Investigations

**Wilderness Investigation #4: Out-of-School Extensions**

**Here are some ideas for at-home discussions and activities.**

**Discussion Ideas:**

- What is a characteristic? Can you name some characteristics of \_\_\_\_\_ (family pet, home, dinner, family member)?
- Can you tell me about some characteristics of the wild place you visited with your class?
- What are some activities people can and cannot do in wilderness?

**Activity Idea #1: Go for a walk at night.**

Different types of wildlife are active at night. Find a safe place to take a walk at night. Notice how the wildlife, temperature, colors, etc. change at night.

**Activity Idea #2: Plant a plant.**

Watching a plant grow from a seed to a full-size plant is fun. Find a space outside or a container inside and research what type of plant is best for your conditions.

**Activity Idea #3: Make a flower scrapbook.**

Find wildflowers or flowers from a florist. Press them between two books and wax paper. When the flowers are dry put them in a photo album and label them.

## Wilderness in the Classroom

**Overview:** Students will learn the word *characteristic* and generate a list of characteristics that describe a person in the class. They will then compare the characteristics of two students. Next they will review their list of characteristics that describe wilderness from WI #1 and add to the list. They will watch a brief video about wilderness and the Wilderness Act. Students will also learn about the four characteristics that describe wilderness character and what they can and cannot do in designated wilderness.

**Teacher Goals:** Teachers will...

Introduce the word characteristic and provide an example.
Review the characteristics of wilderness from Wilderness Investigation #1.
Introduce the four characteristics of wilderness character.
Talk about what people can and cannot do in designated wilderness.

### Learning Targets

I can articulate my own ideas.
I can watch and listen to information.
I can compare and contrast my ideas with others' ideas.

### Standards Applied

<b>Common Core 4<sup>th</sup> Grade Writing Standards</b>	Research to Build and Present Knowledge 8: Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information.
<b>National Environmental Education 4<sup>th</sup> Grade Guidelines</b>	Strand 1 E: Students are able to describe and organize information to search for relationships and patterns concerning the environment and environmental topics. Summarize observations and describe data.
<b>National Environmental Education 4<sup>th</sup> Grade Guidelines</b>	Strand 2.2 A: Students understand basic ways in which organisms are related to their environments and to other organisms. Identify was in which organisms cause changes in their own environments.
<b>National Environmental Education 4<sup>th</sup> Grade Guidelines</b>	Students can identify fundamental principles of U.S. society and explain their importance in the context of environmental issues. Discuss how their own beliefs about the environment, environmental issues, and society compare to these general, societal beliefs.

**Estimated Time:** 25 minutes

### Materials:

- Selected phrases from the Wilderness Act (from WI #1)
- *America's Wilderness* <http://wilderness.nps.gov/> (Video available in English and Spanish. Length: 2:51min)
- Chart paper, whiteboard, etc. and writing tools
- Characteristics of Wilderness handout and Wilderness Tools handout
- **My Wild Places Journal** for each student

**Teacher Background Information:**

According to the Wilderness Act of 1964 wild areas “shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their **wilderness character**.” The legal document tells us that it is a priority to protect and preserve wilderness character, but it does not define **wilderness character**, so we are left to define it ourselves.

Here are three big ideas for understanding society’s ideals and value of wilderness: 1) Wilderness is a natural environment free from modern human manipulation and impact, 2) In wilderness people can have experiences in a natural environment in which they do not see any signs of other modern humans, 3) Wilderness allows for symbolic meanings of people’s connections with nature. These three ideas are what set wilderness apart from other public lands.

Each wild place is entirely different geographically, biologically, environmentally, and socially (how humans interact with the land). Every wilderness has its own unique *wilderness character*, and we do have four characteristics of wilderness described in the Wilderness Act to help us examine the wilderness character of a wild place.

1) Untrammeled, 2) Natural, 3) Undeveloped, and 4) Outstanding opportunities for solitude or a primitive type of recreation.

**Teaching Sequence:**

**1. Define**

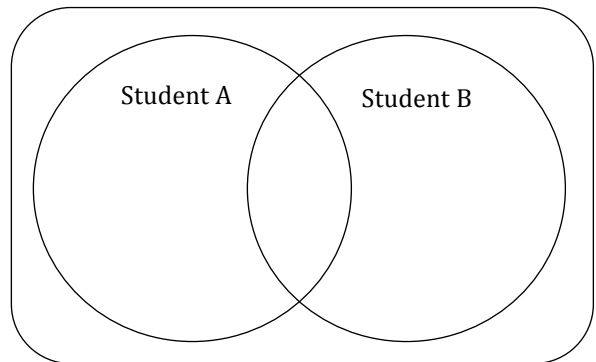
Q: What is a *characteristic*?  
 A: A characteristic is a **quality** that describes something or someone.

**2. Create an Example**

What are some characteristics of (name a person in the classroom)?  
*How is (name) similar to other people and how is she/he different from other people?*

Characteristics are words that describe **physical qualities** or describe someone’s **personality or likes and dislikes**.

- Examples of characteristics:
  - *She has two eyes, a nose, two ears, a mouth, two arms, and two legs.*
  - *She has long, black hair.*
  - *She is tall.*
  - *She has brown eyes.*
  - *She often wears red shoes and a yellow sweater.*



- *She has five brothers.*
- *She likes red jelly beans.*
- Compare the characteristics of the selected student with another person in the class. How are they alike? How are they different? Create a Venn diagram.

### 3. Brainstorm

As a class or individually, ask students to come up with a list of characteristics, adjectives, or other attributes that describe a wilderness. Revisit the class list created in Wilderness Investigation #1. Accept all reasonable answers.

### 4. Review

Review the selected phrases from the Wilderness Act of 1964 from Wilderness Investigation #1. What do the terms mean? Keep an eye out for the terms in the upcoming video and images that correspond with the phrases.

### 5. Watch and discuss

**“America’s Wilderness”** <http://wilderness.nps.gov/> (Video available in English and Spanish. Length: 2:51min)

Play the video “America’s Wilderness” by the National Park Service. The video shows multiple phrases from the Wilderness Act relating to wilderness character. It may be helpful to play the video twice or to stop it occasionally and discuss the displayed phrases from the Wilderness Act. Students may write down their ideas in their **My Wild Places Journals** on journal page 13.

#### Questions to think about and discuss from the video:

*Can you name some characteristics of wild places that you noticed in the video? Did you think of any we have not mentioned before?*

*What does the video tell us about how our human society is changing?*

*What types of wilderness habitats are shown in the video?*

*What kinds of wildlife can be found in wilderness?*

*Were there any places shown in the video you would like to visit? Why?*

### 6. Introduce

The Wilderness Act of 1964 was created to guide people to protect and preserve the wilderness, however the writers of the document did not tell us exactly *how to protect it* or *what to protect* but they gave us some ideas. The Wilderness Act mentions four specific characteristics of wilderness that help us focus our view of

wild places. We can use those four characteristics to show us what to look for in a wild place to determine if it is wilderness.

Using the *Characteristics of Wilderness resource*, share the description of each quality and some examples of the qualities. (You may want to make copies for students.) Land managers from the National Park Service, the Bureau of Land Management, Fish and Wildlife Service, and the US Forest Service use these characteristics to help them make decisions about how to protect wilderness areas. Remember that each wilderness area is unique, so the qualities will probably look different for each wild place.

### 7. Compare and Discuss

As a class, brainstorm a list of activities that can be done at school and another list of activities that cannot be done at school. Why are some activities not allowed at school? (Example answer: They are dangerous. We do not have the correct equipment. There are too many students around.)

#### At school we *can*...

- Eat lunch with friends
- Play games
- Talk to friends and teachers
- Work on projects
- Paint, draw, sculpt
- Sing, dance and laugh
- Learn about interesting places and ideas

#### At school we *can't*...

- Have weapons
- Bully or put down other students
- Scream
- Live at school
- (Consult school rules)

What **can** people do in the wilderness and what must people **not do**? If you have time, share student opinions and thoughts about the two lists. *Do you agree with the lists? Why or Why not?*

#### In the wilderness people *can*...

- Hike
- Ride horses or mules
- Paddle a boat
- Camp overnight
- Sleep in a tent
- Take photos
- See wildlife
- Find a quiet place to be alone (solitude)
- Learn about native cultures

#### In the wilderness people *can't*...

- Ride a bike
- Drive a vehicle
- Build buildings or roads
- Live there permanently (“...man is a visitor who does not remain.”)
- Use anything with a motor (ex. A chainsaw)



Direct students to write down their thoughts about why people need to protect and preserve wilderness character of wild places in their **My Wild Places Journal** on journal page 14. Invite students to share their personal reflections.

Use the Wilderness Tools handout to show students examples of tools that can be used in wilderness.

**Adaptations:**

- Create a concept web of qualities that describe individual students in the class. Next create a concept map of qualities and characteristics that describe wilderness.
- Students may practice using different hand tools. Review safety and proper technique before allowing students to use the tools.
  - Suggested Resource and Extension: Macaulay, D. (1988). *The way things work*. Boston: Houghton Mifflin.

**Resources:**

- Recommended read aloud book or literature circle book:
  - Paulsen, G. (1990). *Woodsong*. New York, NY: Bradbury Press.
- Copy of the Wilderness Act in the Appendix.
- What is Wilderness Character?  
[http://leopold.wilderness.net/research/fprojects/docs14/WildernessCharacter\\_wh at.pdf](http://leopold.wilderness.net/research/fprojects/docs14/WildernessCharacter_wh at.pdf)
- Wilderness Character Toolbox  
<http://www.wilderness.net/index.cfm?fuse=toolboxes&sec=WC>
- "Education World: U.S. Education Standards / National Standards ." *Education World: The Educator's Best Friend*. Education World, Inc, n.d. Web. 30 May 2012. <<http://www.educationworld.com/standards/national/index.shtml>>.

## Characteristics of WILDERNESS taken from Section 2 of the Wilderness Act

### Untrammelled

“...an area where the earth and its community of life are untrammelled by man...”

and

“...generally appears to have been affected primarily by the forces of nature.”

**Wilderness is uncontrolled and free from the actions of modern human**

Examples of trammeling include:

- spraying weeds or insects
- putting out fire
- collaring wildlife with tags
- stocking fish in rivers and lakes
- trespassing cattle

### Natural

“...is protected and managed so as to preserve its natural conditions.”

**Wilderness ecosystems are mostly free from the effects of modern civilization**

Examples of natural quality include:

- threatened wildlife or plant species
- non-native species
- grazing allotments
- visibility, ozone
- acid deposition
- water quality, loss of soil
- loss of connectivity
- pathways for nonnative species

### Undeveloped

“...an area of undeveloped Federal land...without permanent improvement or human habitation”

and

“...where man himself is a visitor who does not remain.”

**Wilderness is mostly without permanent improvement or modern human occupation**

Examples of undeveloped could include:

- **no new** buildings, vehicles, bikes, or motorized equipment (chainsaws)
- emergency medical helicopters

### Solitude or Primitive

“...has outstanding opportunities for solitude or a primitive and unconfined type of recreation; “

**Wilderness has outstanding opportunities for solitude or primitive recreation**

Examples of solitude or primitive recreation include:

- not many encounters with other visitors
- no roads
- no light pollution at night
- no trash or illegal use by people

**What tools can be used in wilderness?**



Canoe, from wilderness.net; image # 1639



Shovel, from wilderness.net; image # 1185



Axe, from wilderness.net; image # 1622



Crosscut saw, from wilderness.net; image # 3909

## Wilderness Hero Study #4: John Muir

Use the wilderness hero concept map for your study of John Muir. Students may record their thoughts on journal page 20 in their **My Wild Places Journals**.

### Discussion:

1. John Muir loved nature with a passion. He spent most of his life outdoors exploring nature.

*What words do you think Muir would have used to describe how he feels about nature and being in nature?*

2. Why is John Muir a wilderness hero? How did his actions help to protect and preserve wilderness?

### Extension Activity 1: Hero Mural

Use a large piece of butcher paper to create a portable class mural. Invite students to brainstorm what they would like to include in the mural. What kinds of words, information, or illustrations are necessary to convey the idea of HERO. Students may contribute to the mural at different times during the day or in small groups to avoid disruption and a *traffic jam*.

### Extension Activity 2: John Muir's Wild Life

John Muir certainly led a wild life. Read some of Muir's writings to get a better idea of his sense of adventure and love of the natural world. In small groups students may impersonate Muir and tell a story of one of his adventures. Audio or video record the impersonations and compile them into one project. You may want to publish the project to a class website.

#### Suggested Readings:

- Cornell, J. (2000). *John Muir: my life with nature*. Nevada City, CA: Dawn Publications.
- Stetson, L. (2008). *The wild Muir: twenty-two of John Muir's greatest adventures*. Yosemite National Park, CA: Yosemite Association.
- Muir, J. (1913). *The story of my boyhood and youth*. Boston, MA: Houghton Mifflin.

### Extension Activity 3: John Muir's Journey

John Muir traveled across the world and across the country by boat, by train and by foot. Research and chart his path from birth (Dunbar, Scotland) to death (Los Angeles, CA) on a map. You can use the provided Wilderness Map. Mark significant events in his life along his journey.

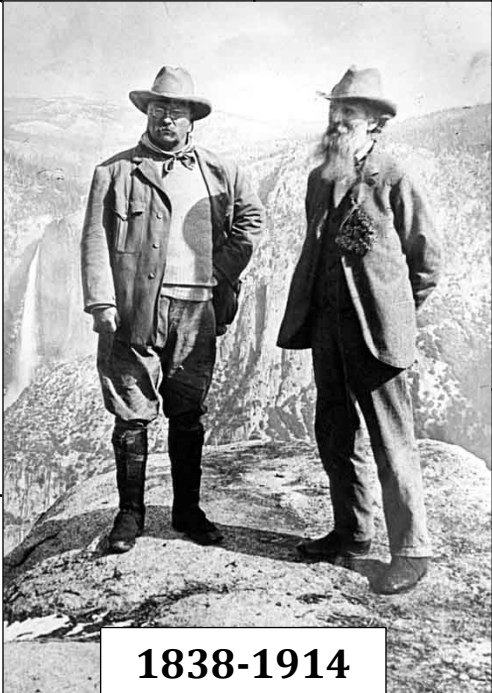
## Wilderness Hero Profile #4: John Muir

He taught himself science and came up with the idea that Yosemite Valley was formed by glaciers.

Even as a child, John loved nature and beauty.

John was born in Scotland and moved with his family to a farm in Wisconsin when he was 11 years old.

In 1903 John guided President Theodore Roosevelt to show him the "real Yosemite" and convinced him to set the area aside for protection from farming and development.



**1838-1914**

President Theodore Roosevelt and John Muir (right) in Yosemite 1903 (from Yosemite Research Library)

He liked to take **long** walks. Once he walked from Indiana to Florida. Later in his life he enjoyed walking for a month at a time with only bread and tea in his pockets.

In 1868 John Muir traveled on a ship through the Panama Canal to San Francisco, CA. He walked to Yosemite Valley where he met his "heart's home."

He helped form and lead the Sierra Club which advocates for wild lands protection.

He wrote many books and essays about wilderness and nature that have inspired many people to love and protect wild places.

## Wilderness Outside of the Classroom

**Overview:** In small groups students will investigate the wilderness character of a wild place. Students will synthesize their findings either in the form of a concept map or geographic map.

**Teacher Goals:** Teachers will...

Explain how to create a concept map or geographic map.
Orient students to the outdoor space for the activity.
Facilitate a discussion about the wild character of the outdoor location.

### Learning Targets

I can make observations about my surroundings.
I can record my observations and ideas.
I can describe the characteristics of a wild place.
I can collaborate with a group.

### Standards Applied

<b>Geography: Places and Regions NSS-G.K-12.2</b>	Understand the physical and human characteristics of places. Understand that people create regions to interpret Earth's complexity.
<b>National Environmental Education 4<sup>th</sup> Grade Guidelines</b>	<p>Strand 1 A: Learners are able to develop questions that help them learn about the environment to do simple investigations. Generate ideas and questions about objects, organisms, events, places, and relationships in the environment.</p> <p>Strand 3.1 D: As learners come to understand that environmental and social phenomena are link, they are able to explore the consequences of issues. Discuss how an environmental issue affects different individuals and groups.</p> <p>Strand 3.1 D: Learners understand the importance of sharing ideas and hearing other points of view. Hear and respect different perspectives and communicate with people whose lives, cultures, and viewpoints are different from their own.</p>
<b>Common Core 4<sup>th</sup> Grade Writing Standards</b>	<p>Research to Build and Present Knowledge 7: Conduct short research projects that build knowledge through investigation of different aspects of a topic.</p> <p>Research to Build and Present Knowledge 8: Recall relevant information from experiences or gather relevant information from print and digital sources, take notes and categorize information.</p>
<b>Common Core 4<sup>th</sup> Grade Speaking and Listening Standards</b>	Comprehension and Collaboration 1: Engage effectively in a range of collaborative discussions with diverse partners on grade 4 topics, building on others' ideas and expressing their own clearly.

**Estimated Time:** 1½ hours to a half day

**Materials:**

- **My Wild Places Journal** for each student

- Copies of a concept map template/ geographic map template **or** blank paper (1 per group)
- Clipboards
- Writing and drawing tools
- Binoculars, hand lenses, camera (optional)
- Field guides (optional)

### **Teacher Background Information:**

The Wilderness Act of 1964 does not tell us how to protect wild places, but it does tell us that we need to find a way. Each wild place is entirely unique in its wilderness character. We must investigate in the field to determine the wilderness character of a location. By determining the wilderness character of a place, we can identify different aspects of the area that need to be preserved and protected in order to keep the place wild.

### **Activity Option 1: *Wild Place Concept Map***

A concept map is a great way to organize the characteristics of a location. Students may either use a template or work from a blank piece of paper. The concept map will organize many different aspects and observations about the wild place into one piece of work. Review the provided template.

### **Activity Option 2: *Wild Place Geographic Map***

Creating a simple map can help students to notice large scale and small scale details about the landscape. Mapping can also guide students to make observations about how different aspects of an environment are connected. Creating a physical representation of a wild place can be a useful way to revisit the learning experience when you are back in the classroom. Review the provided template.

### **Teaching Sequence:**

#### **1. Create Groups**

Divide the class into groups of two or three and distribute materials for either creating a concept map or a geographic map. You might want to provide students the option of creating a concept map or a geographic map, which will produce multiple representations of the gathered and interpreted wilderness character data.

#### **2. Orient**

Orient students to the area. Point out important features (bathrooms, water access, safety hazards). Make sure students understand the boundaries of the area they are investigating, so that all students are focused on the same space.

#### **3. Activity Option 1: Create a concept map**

In partnerships students will work together to create a list of qualities about the wild place. They will then organize their qualities in a concept map. Students may work from a template or blank paper. It is helpful to give students categories of qualities to think about. If students have not created concept maps before, this can be modeled using the qualities of a student. (See *Wilderness in the Classroom WI #4*).

Examples of categories to investigate: size of space, amount and types of vegetation, evidence of wildlife (include arthropods), human structures and evidence of humans, different purposes of the wild place (recreation, celebration, wildlife preserve).

#### 4. **Activity Option 2: Create a geographic map**

Provide students with a rough outline map of the wild place. Help them to orient the page by pointing out the boundaries of the wild place and the boundaries on the paper map. If you are in a place students have not visited before, walk the perimeter of the area as a group and point out important features.

In partnerships students will work together to create a detailed map that includes the different qualities of the location.

Examples of items to include on the map: human structures (paths, roads, buildings, water fountains, tables, playground equipment), plants (trees, shrubs, grass), wildlife (bird nests, ant nests, squirrels, tracks, bee hive), wildness/natural forces (evidence of rain, fire, flood, drought).

#### 5. **Investigate**

Allow students enough time to thoroughly investigate the area. Check in with groups frequently to make sure they are on-task and help them to make observations. Students will record their findings on their maps. They may also want to record additional findings in their **My Wild Places Journals** on journal page 15.

#### 6. **Discussion**

Combine student groups as they finish collecting information to share their findings. Create a class compiled concept web or list describing the wilderness character of the wild place. You may also choose to display each group's map and facilitate a *gallery walk* during which all students view every group's work. (This may be done in the classroom or outside in a wild place.)

*Do you have any additional questions about the wild place? Did you find any more information about the wild place you would like to share?*

*What did you find that makes this place wild?  
Did you find anything surprising during your investigation?*



*What are some wild characteristics of this location?  
What can people do to protect those wild characteristics?*

*Did you agree or disagree with the other group's findings? Why?*

**Adaptations:**

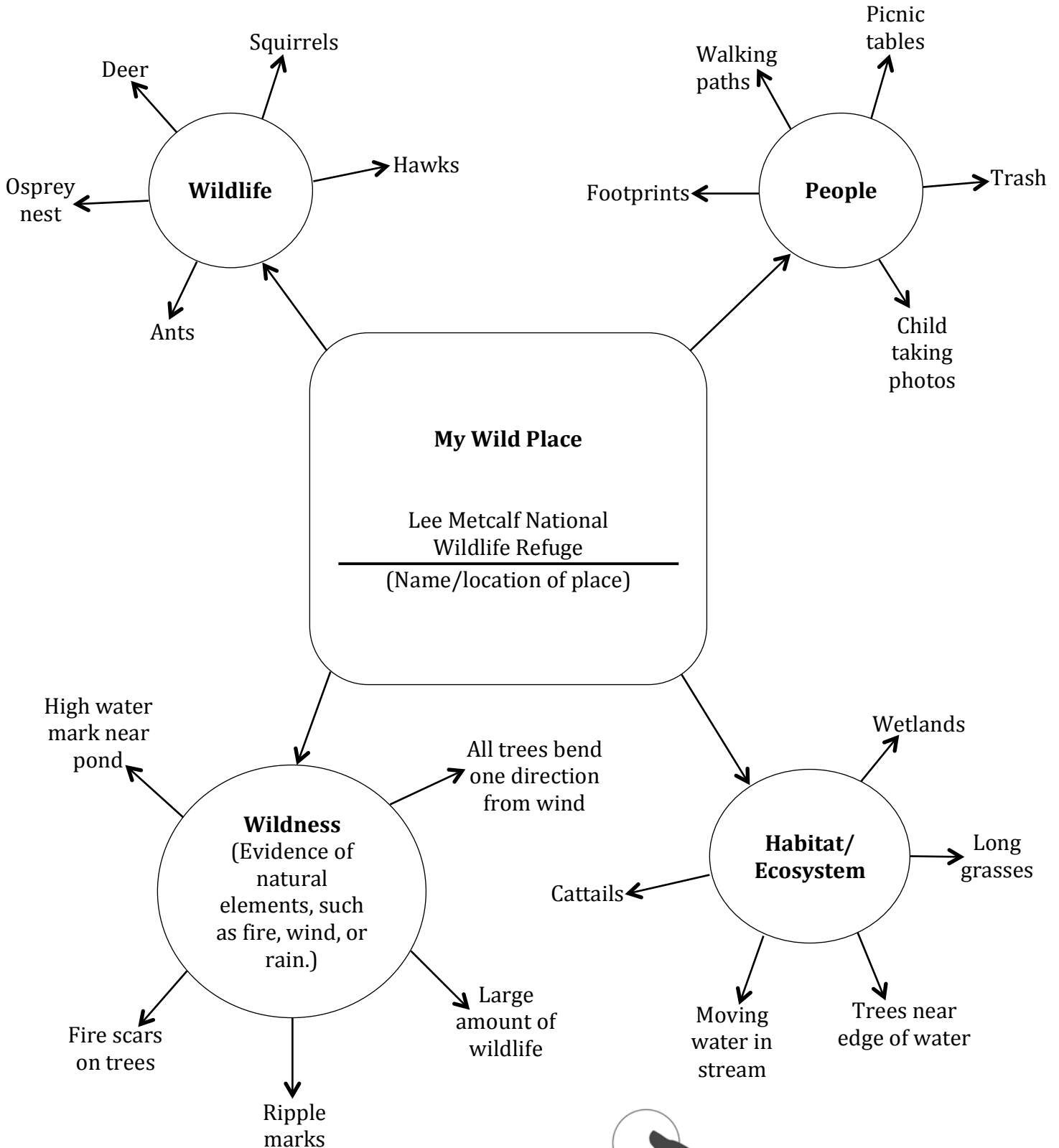
- If it is not possible to travel to a wild place, this experience could take place on school grounds.
- Students may create a field guide for the wild place including plants, wildlife and other natural features, such as rocks and soil. The class as a whole may divide up the different items they want to include in the field guide and create pages with images and descriptions.
- Wilderness character photo project: Students can capture images of wilderness characteristics of the wild place using cameras. After taking the photos, create captions and descriptions of why each photo is significant. If possible, post the photos on a map of the area to show where each wild character photo was taken.

**Teacher Notes:**

- Dependent on the length and location of your trip to a wild place, you will need to adequately prepare yourself and your students for a successful experience. Students may need lunches, water, first aid kit, proper clothing, sun protection.
- If you will be outside in wet weather, it may be helpful to provide each student with a large resealable bag to protect their journals.
- If equipment is available, students may also elect to gather information by taking photos or video with a digital camera.

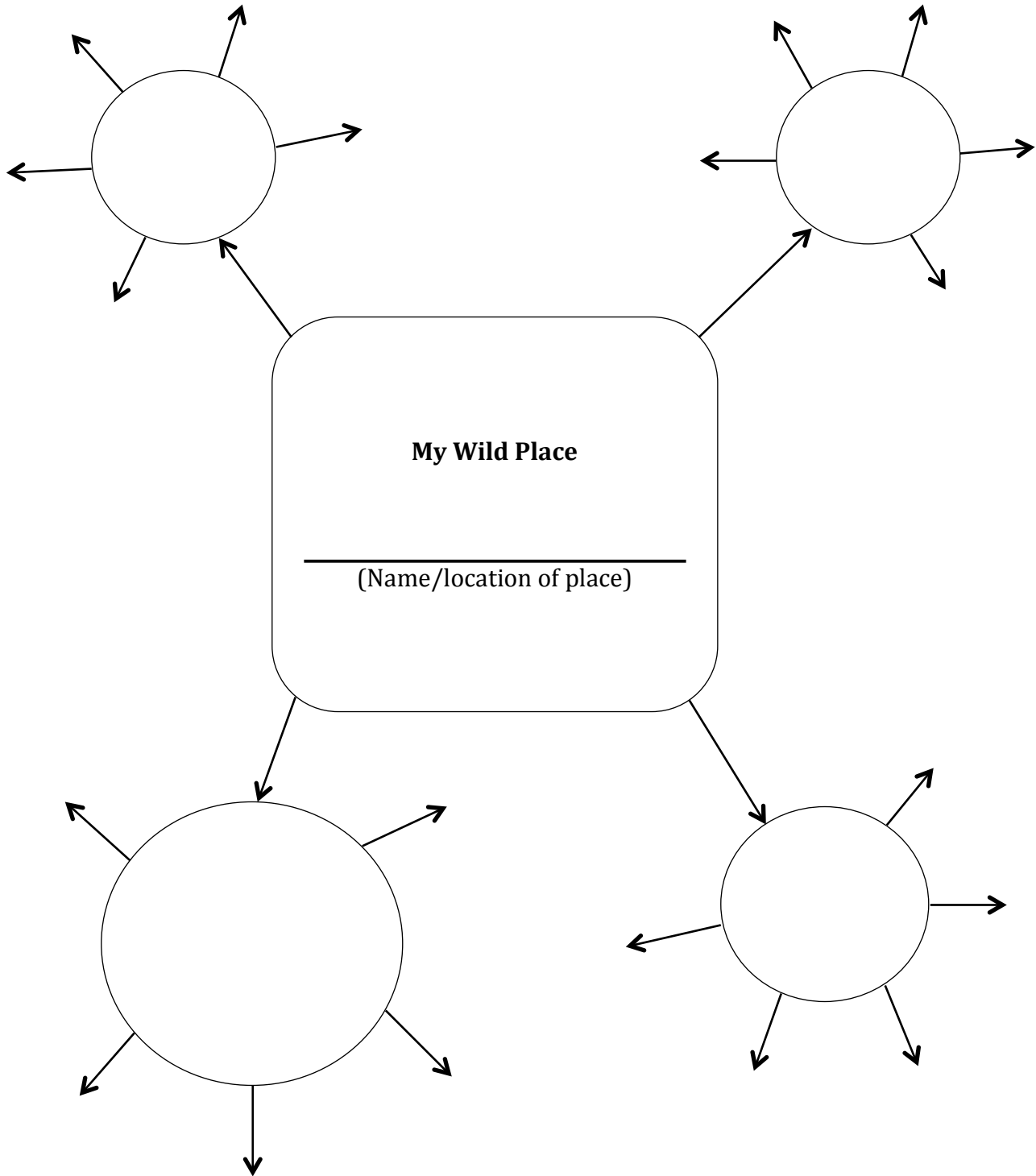
# Wild Place Concept Map Example

**Directions:** Create a concept map of the different qualities of your wild place.

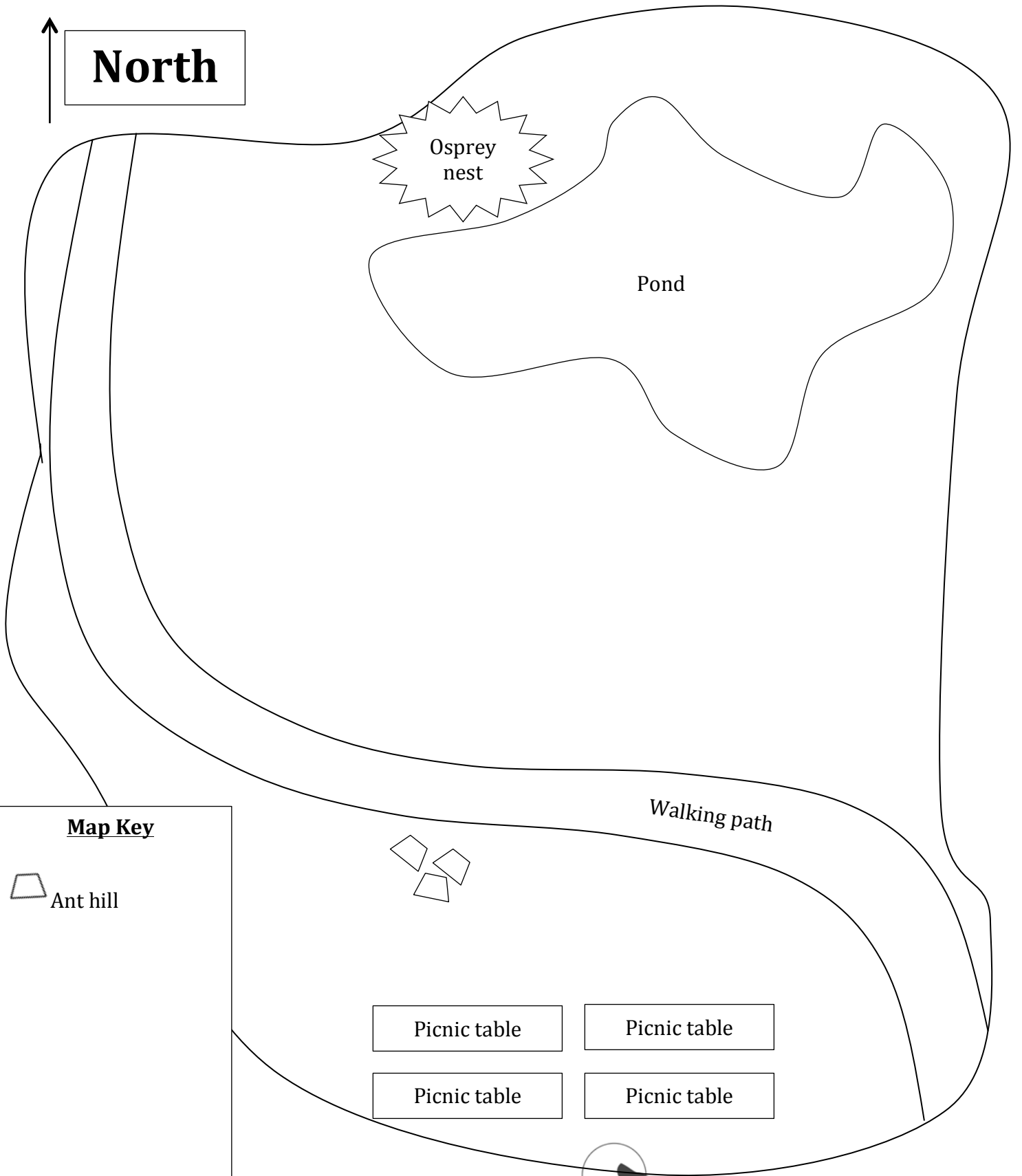


# Wild Place Concept Map *Template*


**Directions:** Create a concept map of the different qualities of your wild place.



**Wild Place Geographic Map Example**



**Map Key**

 Ant hill

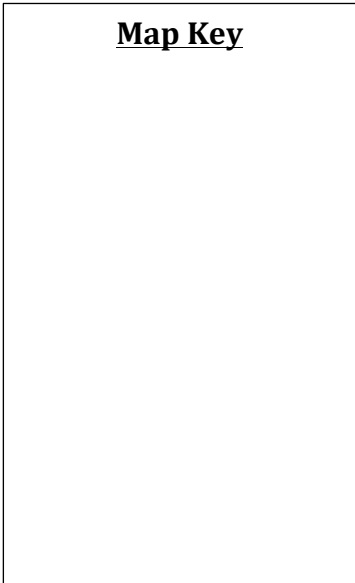
Picnic table	Picnic table
Picnic table	Picnic table

**Wild Place Geographic Map *Template***

Location of wild place: \_\_\_\_\_

Date: \_\_\_\_\_

**Map Key**



## Wilderness Profile Study #4: Boundary Waters Canoe Area Wilderness

Use the wilderness profile concept map for your study of the Boundary Waters Canoe Area Wilderness. Students may record their thoughts on journal page 23 in their **My Wild Places Journals**.

### Discussion:

1. Can you find the Boundary Waters Canoe Area Wilderness on the Wilderness Map? Can you tell which *boundary* the area is named after? (Answer: The US border with Canada)
2. What types of recreation do you think might happen in this wilderness area? (Hint: There's more than just canoeing. Don't forget about winter recreation.)
3. Compare and contrast the wildlife in the Bob Marshall Wilderness with the wildlife in the Boundary Waters Canoe Area Wilderness. Which animals are the same and which are different?

### Extension Activity #1: Birdseye View

The Boundary Water Canoe Area is characterized by having many lakes of different sizes and shapes close together. Students may imagine that they are a bird flying over the area. Sketch a view of what a bird might see. What might a bird see as important that a person might overlook? Use [wilderness.net](http://wilderness.net) to find out more about the area to complete a picture.

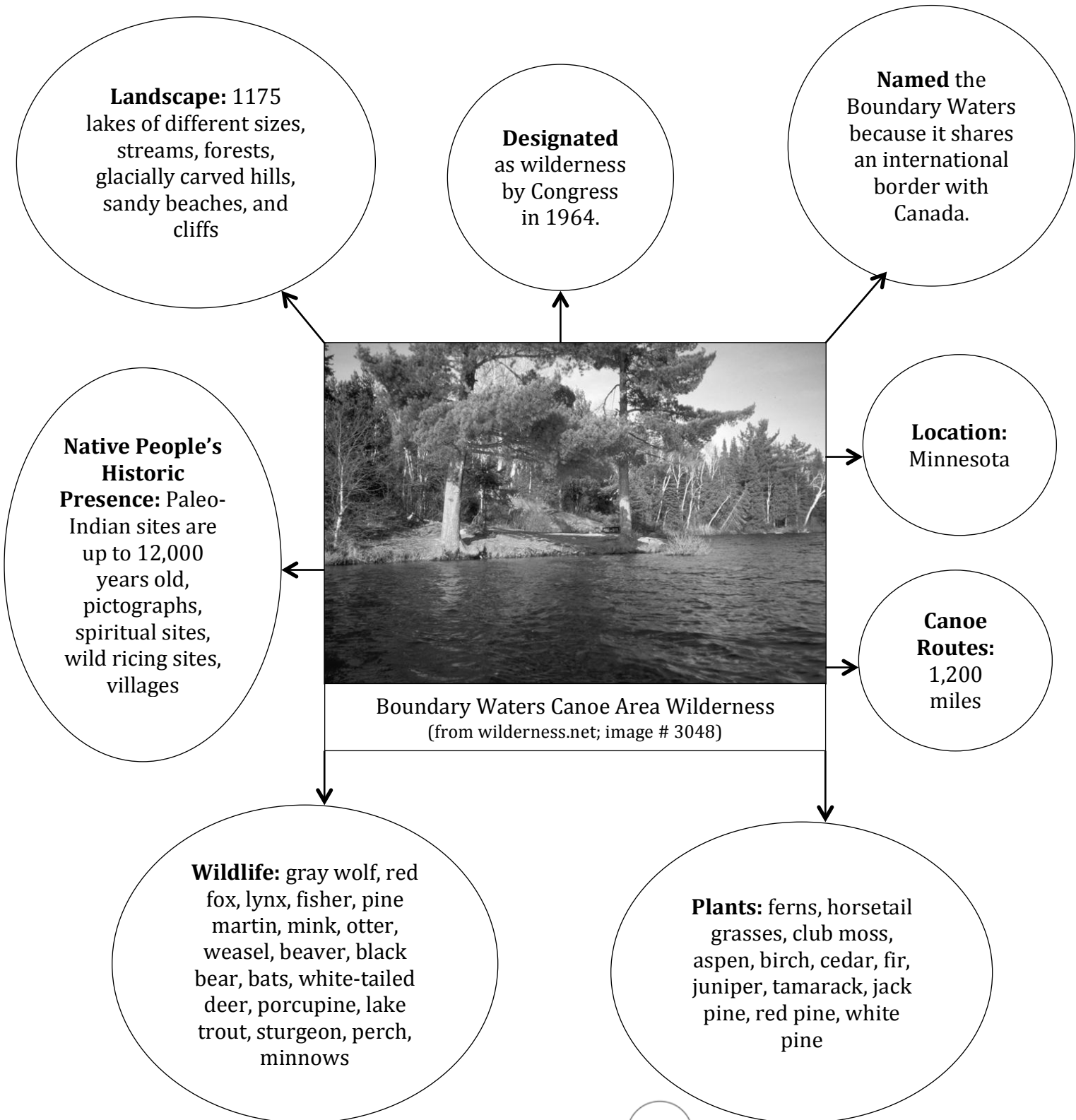
### Extension Activity #2: Connected Waterways

Rivers, lakes and streams are all connected to each other. Start in the Boundary Waters Canoe Area Wilderness and trace a path of connected waterways all the way to the Atlantic Ocean. Students may need a more detailed map than the Wilderness Map.

### Extension Activity #3: Create a wilderness touch box

People can experience wilderness with all of their senses. Ask students what wilderness smells like? Students may think of creative items that remind them of the smell of wilderness. Once students bring in their smell items they must keep them a secret. Use an empty tissue box or other container that students cannot see into but can *smell*. Place items one at a time in the container and pass it around to each student. Students may silently guess the identity of the wild smell and later reveal the true name of the item.

# Wilderness Profile #4: Boundary Waters Canoe Area Wilderness



## Wilderness Show & Tell

**Teacher Information:**

At the end of each investigation work with the students to create a display or presentation about their learning, skills acquired, and experiences. It may be useful to take photos of students during the Wilderness Outside of the Classroom portion of the investigation. Use this space as a planning template.

**Big Ideas from Wilderness Investigation 4:****Presentation or Display Ideas:****Student Involvement Component:****Location and Date of Event:****Logistics of Event:** (refreshments, seating)