

# Prairie Basics

Do you know what makes a prairie a prairie? Let's test your knowledge— put on your thinking cap and fill in the blanks below. Use the word bank to help you complete the sentences, but use each word in the word bank only once.

The main plants that grow on the prairie are grasses.

Prairies are usually flat or have rolling hills.

The prairie is one of the most endangered habitats on the planet.

There are many kinds of plants and animals on the prairie, and this is called bio-diversity.

Prairies have few or no trees.

There are three kinds of prairie in North America; tallgrass prairie, short grass prairie and mixed grass prairie.

## Word Bank

habitats

flat

diversity

grasses

trees

mixed

## Fast Facts to Share

- ◆ There is only a small portion of the North American prairie left. The same properties that made it a healthy grassland make it prime farming and grazing land. Today only small pockets of prairie are left, and they are mixed among agricultural lands.
- ◆ While at first glance the prairie doesn't look like a diverse landscape, it is. It is home to many animals and plants that can make a living only in the tall grasses.
- ◆ There is a lot more going on on the prairie than meets the eye! If you could look beneath the prairie soil's surface you would find many more microbes, animals and fungus than there are in the rainforest soil!

Does your group think the prairie looks the same today as it did when the first settlers arrived? If your group says no, you are right! Together, list some ways that the prairie looks different today than it did before settlers arrived. Here is an idea to get you started: There are many more trees on the prairie now than when the settlers arrived.

**Possible answers:**

**There are no longer massive herds of bison roaming and shaping the plains today. There are many more towns and people than there once were. The true prairie is now being used to grow wheat and corn, which is important, but is not true prairie.**

# Gone are the grizzly bears

Grizzly bears once roamed the prairie in search of food, water, shelter and space. Now there are no bears wandering the plains. The grizzly bear requires large areas of habitat with large food supplies and access to constant and clean water to survive. In the space below, write two reasons your group thinks that the grizzly bear no longer roams the prairie.

**Possible answer:**

**The grizzly bear no longer lives on the prairie due to habitat fragmentation. The grizzly needs large uninterrupted areas without many people in order to search for food, water, shelter, space and mates.**

## **Fast Facts to Share**

- Grizzlies must consume 20,000 calories during the winter months to gain enough weight to survive through winter. That is equivalent to 72 Snickers Bars™.
- During the winter months, these bears construct dens out of brush and fallen trees, but will often use sloping crevices or caves. This sloping allows snow to cover and insulate the bears.
- In 1975, the US Fish and Wildlife Service placed the Grizzly Bear as threatened in the lower 48 states.
- Cubs are born in the den while the mother is hibernating, and they will stay with their mother for 2-4 years.

Grizzly bears are officially classified as carnivores, or animals that eat meat. But it may be more accurate to think of them as omnivores. Below are three possible definitions for omnivore; circle the best one.

**An animal that eats plants**

**An animal that eats insects**

**An animal that eats meat and plants**

Grizzly bears are large predators. It is important for a habitat to have the right number of predators. If the predators are taken out of the habitat, the habitat will change. Below is one thing that changed when grizzly bears disappeared from the prairie and two things that did not. Draw a circle around the thing that changed.

**Prairie grasses stopped growing.**

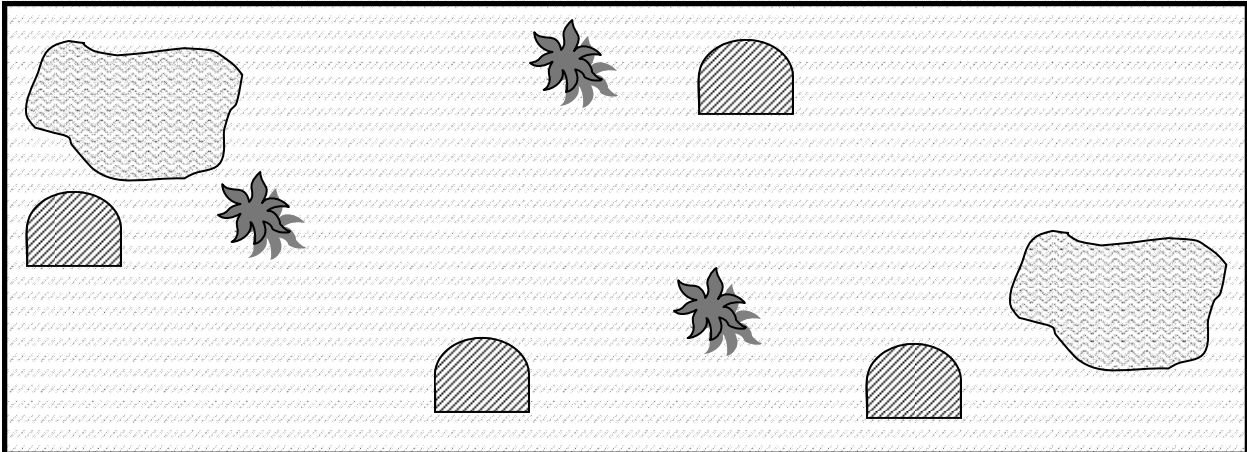
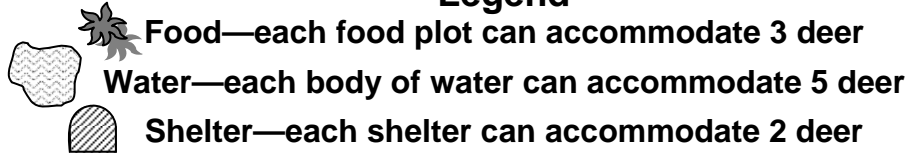
**Populations of animals like deer and elk increased.**

**The number of elephants on the prairie increased.**

# How many deer live here?

All habitats have a limit of how many animals of each species can live there. This is called **carrying capacity**. Carrying capacity is determined by the amount of food, water, shelter and space available to each animal. Use the diagram below to help you answer the questions about the carrying capacity of deer for the habitat.

## Legend



## Fast Facts to Share

- Whitetail deer use their tail as a warning flag to others. When fleeing or sensing danger the deer puts its tail up in the air, exposing the white underside. This alerts other deer in the area that perceived danger is near.
- Deer are excellent jumpers; they can “broad jump” up to thirty feet, and jump a nine foot tall fence in a single bound.

There is enough food for 6 deer.

There is enough water for 10 deer.

There is enough shelter for 8 deer.

How many deer can live in this habitat? 6

If 2 more food plots were added to this habitat would more deer be able to live here?

Why or why not? Yes, but only 2 more deer could live in this habitat.

There is only enough shelter for 8 deer, therefore the carrying capacity for deer in this habitat is 8 deer.

If you were the owner of this property and you wanted to have more deer on your land what are some things you could do to increase the deer carrying capacity?

You could research ways to increase the kinds of plants that deer use for shelter, such as cattails and American Sycamore trees.

# We all live downstream

River otters once called the rivers of the prairies home, but not anymore. Most of the habitats that otters once used have changed, and the otters no longer live in them.

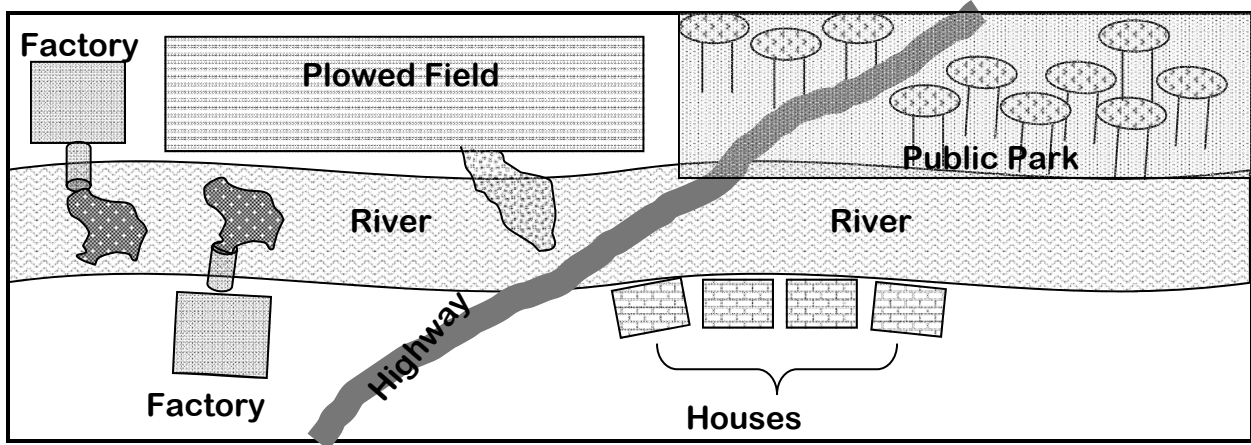
Your group is going to become a group of wildlife biologists and decide if you should reintroduce (bring back) otters to a habitat. Brush up on your otter needs below. After you have read all of the otter requirements, look at the map on the next page. Your group must decide if you will reintroduce otters to this habitat. Use the questions below the map to help make your decision.

## Otter Requirements

- ◆ **Otters need fresh water (not salt water) to survive**
  - ◇ Otter water should not be polluted by chemicals or trash.
    - ◇ Pollution in the water usually hurts not only the otter but its favorite food—fish.
  - ◇ Otter water should not have a lot of sediment (dirt) in it.
    - ◇ When too much sediment (dirt) gets into the water, the otter's food (fish) may leave the habitat.
    - ◇ Sediment makes it hard for the otter to hunt and keep its fur clean and healthy.
- ◆ **Otters need space along the riverbank**
  - ◇ Otters need space without people or activity in order to feel safe, hunt for food and breed.
  - ◇ Disturbances like cars and farming fields may cause the otter to seek a quieter, calmer habitat.
- ◆ **Otters need suitable shelters**
  - ◇ Otters often use the abandoned burrows of other animals living in the habitat.
- ◆ **Otters need a healthy supply of food**
  - ◇ Otters eat a variety of fish and crayfish (crawdads).
  - ◇ Otters will also eat amphibians, reptiles, insects, birds and small mammals.

# We all live downstream (Continued)

Map of proposed otter reintroduction site



What kind of water do otters require? **Otters require fresh, unpolluted water, without a lot of sediment.**

Does the water in the map seem to meet that need?    YES     NO

Explain your answer. **The water in the map has pollution from the factories and sediment or dirt from the plowed field.**

What kind of space do otters require? **Otters need space without a lot of people or activity.**

Does the space in the map seem to meet that need?    YES     NO

Explain your answer. **The space along the river has a lot of activity and people because of the factories, homes and park. The otters would not feel safe in this habitat.**

What kind of shelters do otters require? **Otters usually use burrows made by other animals. It is important to have a variety of animals living in a habitat so that otters can find a suitable shelter.**

Based on the map, do you think otters would be able to find shelter in the habitat?  
YES     NO

Explain your answer. **Other animals would also have a hard time making this habitat a home, so there is little chance there would be burrows available for otters.**

Based on your answers to the questions above, does your group believe that this is a good habitat to reintroduce otters to?    YES     NO

If your group answered no to the above question, what could be done to improve this habitat to make it suitable for otters? **Answers will vary.**

# The weight of the prairie is on their shoulders: Keystone species

A keystone species is an animal species that many other animals depend on for a variety of things like food or shelter. Without the keystone species, the habitat would change and some animals may become extinct. Two prairie keystone species are the bison and the prairie dog.

Bison can be thought of as the gardeners of the prairie. They have many behaviors that help the plants of the prairie survive and thrive!

## Bison Wallows

Many wild animals, including bison, roll in the dirt and dust. This behavior helps the animal rid itself of parasites and bugs in its fur or on its skin. Bison use their hooves to break up dirt and then roll in it. Often times many bison will use the same spot for a wallow. This makes a depression or dip in the ground. During the spring, these depressions fill with water and provide an aquatic habitat for a group of prairie animals for a short time. Below are three kinds of animals that may or may not use the wallows as a habitat. Circle the best answer.

Whales

Amphibians like frogs and salamanders

Mountain sheep

What does your group think that these animals use these wallow pools for?

**Amphians can use the pools when moving from one territory to another, or if the pools are deep enough they can lay their eggs in them!**

## Fast Facts to Share

- Cow birds adapted to follow herds of bison for an easier meal. The bison's hooves stir up insects, making for easy pickings for the cow birds. Because of this migratory life style, the cow bird doesn't have time to stop and raise a family. Instead, the cow bird removes eggs from another bird's nest and then lays her Own, leaving the eggs to be incubated and cared for by the "foster parents"!

Bison also help spread seeds of prairie plants. They eat the leaves, stems and seeds of the plants. While the stems and leaves are broken down and digested, the tough seeds are not broken down. Not only do they exit the body of the bison whole, they are packed in a great fertilizer and have an advantage when the growing season begins! There is another equally important way that bison can help spread seeds—it has to do with their fur. Do you know what it is? Write your answer in the space below. There is a hint below if you are stuck.

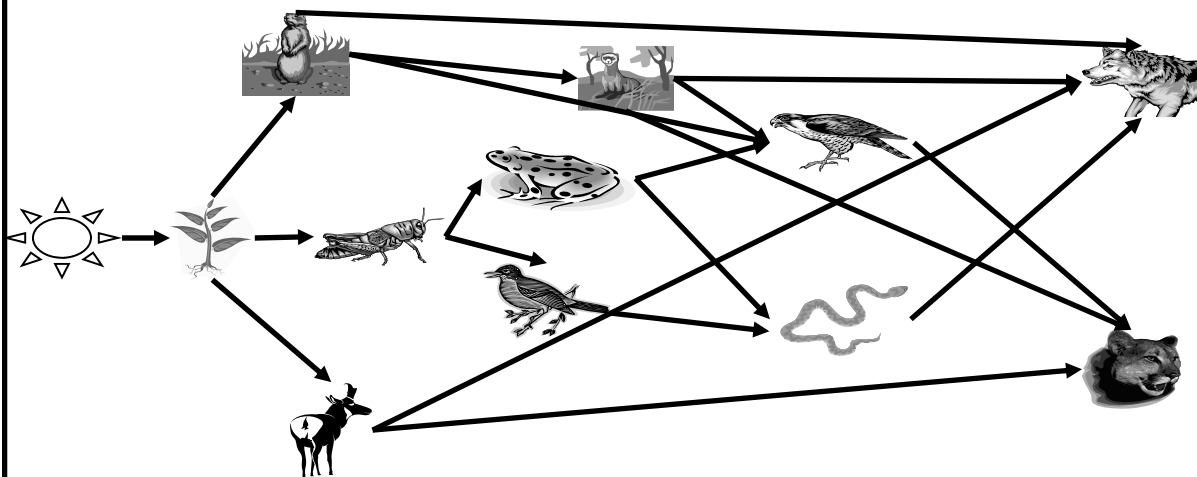
**Prairie grass seeds often have rough fibers on them that will stick to fur or clothing. As the bison walk through the grass, seeds stick to them and fall off far from the parent plant. This allows plants to spread over wide areas.**

Hint—Think about what would happen if you were to walk through the tall grass wearing a fuzzy shirt or pants.

# The weight of the prairie is on their shoulders.

## Keystone species

Prairie dogs are considered a keystone species for many reasons. One reason is that their abandoned burrows provide shelter for burrowing owls, snakes and many other animals. A second reason is that they help maintain the health of the prairie plant community by spreading seeds and loosening the soil. A third reason prairie dogs are considered a keystone species is because they provide food for many animals. Without prairie dogs, the prairie food web would change if not fall apart. Use the food web below to answer the following questions.



How many animals in this food web eat prairie dogs? 3

How many animals in this food web eat wolves? 0

What animals would be affected first if the plants were removed from the food web?  
**The first animals to be affected by the removal of plants would be the herbivores and insects.**

What kind of effect do you think it would have on these animals? **If the plants were removed from the web the herbivores and insects would starve.**

What would happen if the wolves were taken out of the food web? **If the wolves were taken out of the web, populations of their prey would increase and overpopulate the area. This would lead to die offs of these animals.**

Do you think it would be good or bad to take the wolves out of the food web? Why or why not? **At first thought it may not seem like a bad idea to take wolves out of the food web, but when wolves are removed it causes the ecosystem to change, and not always for the better.**