Wildlife Express

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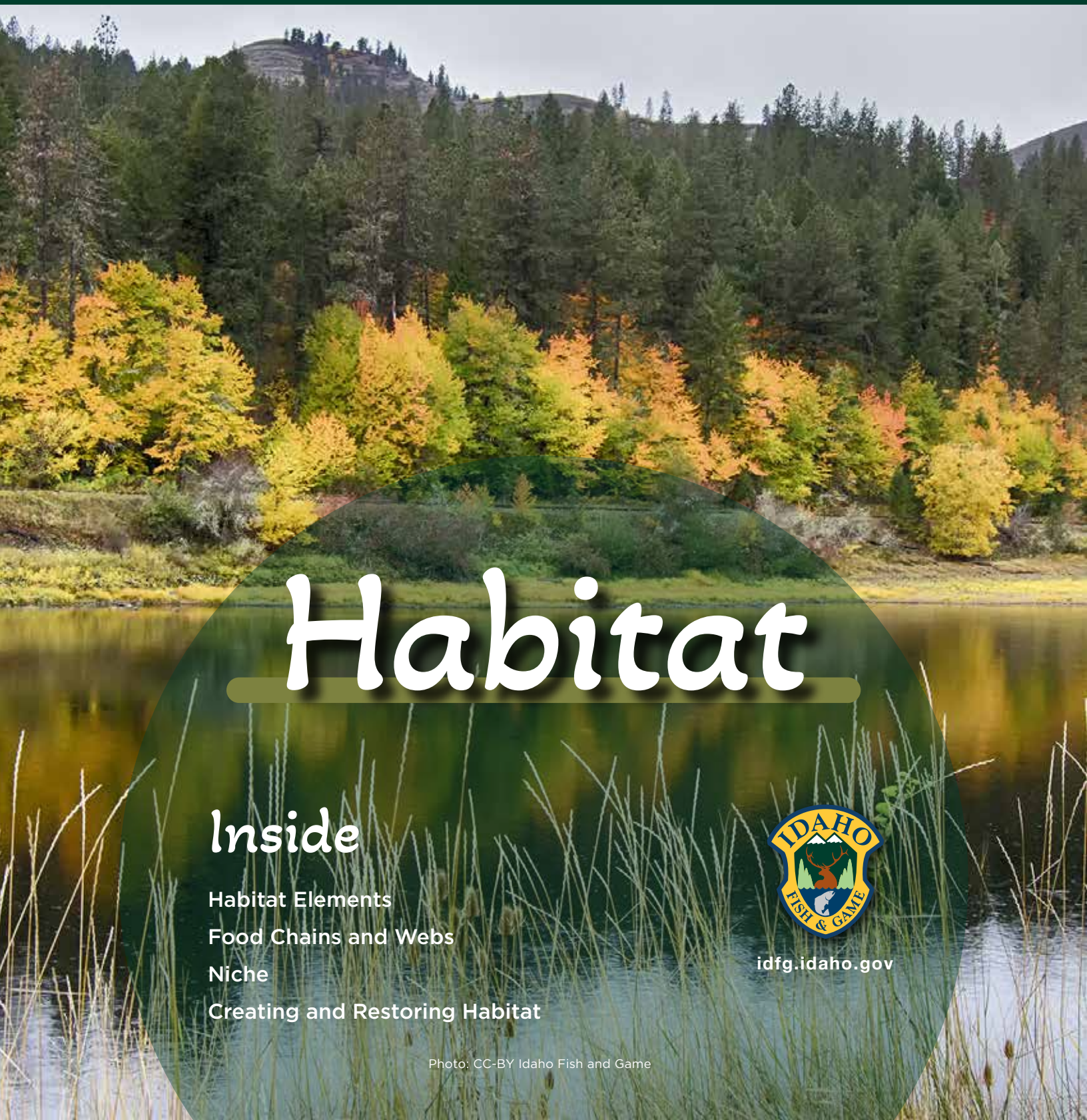

Habitat

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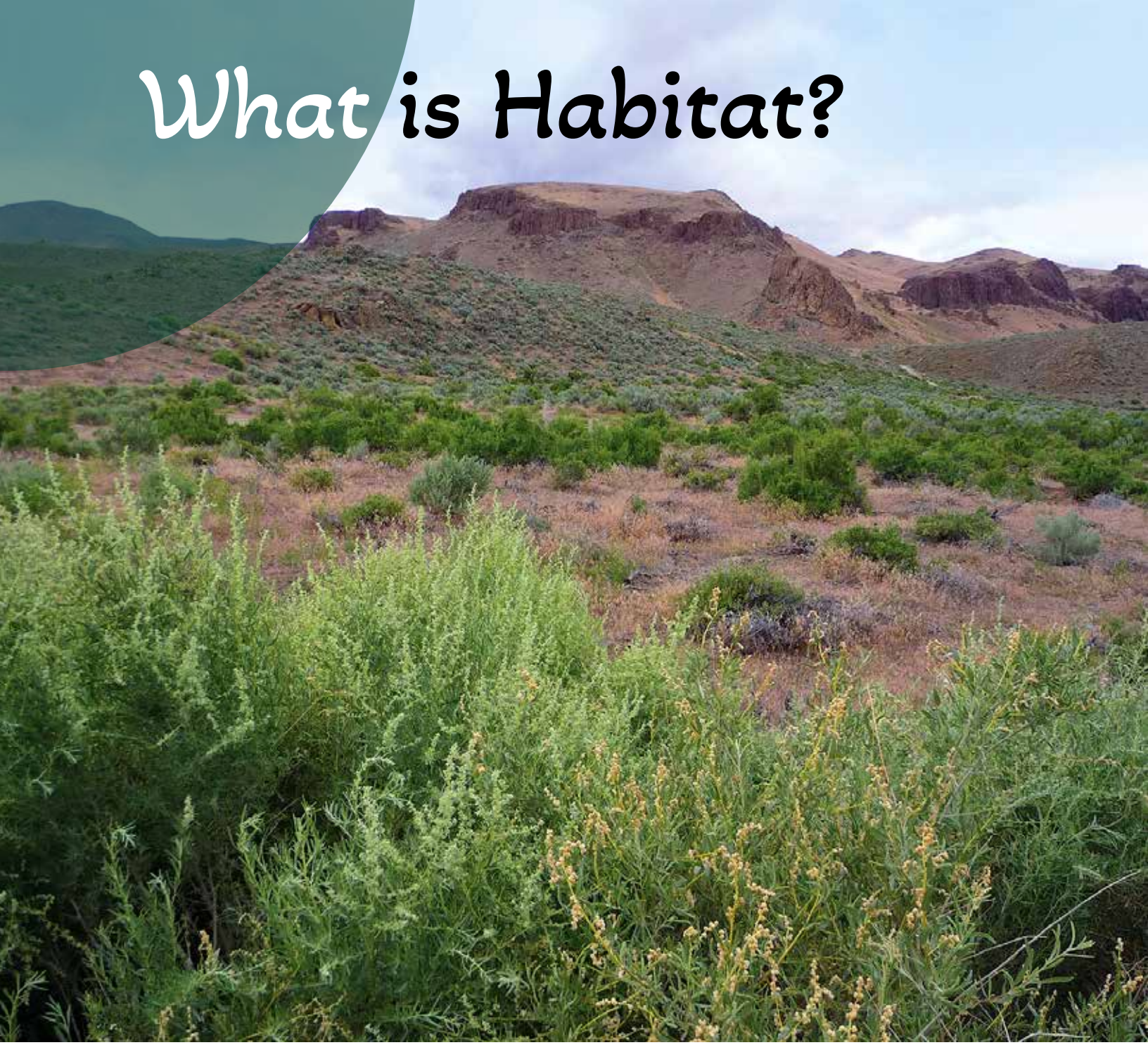
What is Habitat?



A word that you often hear when learning about wildlife is habitat. What is it? Why is it important? Quite simply, habitat is home. It is where an animal or plant lives. Habitat is important to all plants and animals. From microscopic creatures to cottonwood trees to enormous animals like whales, habitat is key. Without healthy habitat, living things cannot survive, and that includes people. We also depend upon healthy habitat.

Photo: CC-BY Lynn Kinter Idaho Fish and Game

Habitat is made up of five important elements: food, water, shelter, space and arrangement.

Each is important so let's take a closer look.

Habitat Elements

At its most basic, food is anything that provides energy. If it moves or grows, chances are that something will eat it. You might enjoy pizza while an elk prefers to graze on grasses, or a red-tailed hawk eats a snake. Animals can be grouped based on what they eat. Plant-eating animals like voles, elk, or rabbits are herbivores. The prefix *herb* means plant, while the suffix *vore* is from a Latin word that means to devour. Meat-eating animals like bobcats, bull trout or hawks are carnivores. Many animals eat both plants and animals depending on the season. In the spring, many songbirds eat insects. When autumn arrives, some songbirds switch to seeds. Others migrate to places where they can find their insect food. Like many people, a lot of animals eat both plants and animals. They are called omnivores. Being an omnivore lets animals take advantage of a wider variety of foods during different seasons.

Plants also need food. While plants don't chase down prey or nibble on berries, they get food by making it themselves. This happens during a process called photosynthesis (pho-toe-SIN-tha-sis). As the plant absorbs sunlight, it gets energy. This energy is used to combine carbon dioxide that plants absorb from the air with water they get from the soil. This makes molecules of sugar and oxygen. The plant uses the sugar and minerals absorbed from the soil to grow, make flowers and produce fruits. As plants make their food, they send oxygen into the air, helping animals and people breathe.

Through chemical reactions in the body, food is turned into energy. This process is called metabolism. Thousands of metabolic reactions happen at the same time. These reactions keep living things healthy. From growing to breathing to thinking to digesting food to circulating blood, a healthy metabolism is vital. Nutritious food makes that happen no matter if you are a plant or an animal.

Food

Photo: CC-BY Lynn Kinter Idaho Fish and Game

Water

Water might seem like a pretty simple part of habitat. Depending upon the habitat, it can be. A river or lake offers a good source of water for many animals. A soaking rain is great for plants. Heavy winter snows create mountain snowpacks that slowly melt in spring. This renews many aquatic habitats from wetlands to streams and lakes. Even tiny streams or puddles can have enough water for some animals. An insect can take advantage of a water droplet.

Water can be found in many foods. This can be an excellent source of water for many living things. Some desert animals, like kangaroo rats, get all the water they need from the food they eat. They are also active at night when it is cooler. This helps these rodents save water. Many of Idaho's high elevation desert animals are nocturnal or crepuscular. Being active at night or at dusk and dawn helps these animals conserve water. Chilly nighttime temperatures keep these animals cool while they are active. They don't have to sweat or get thirsty. They can depend on the food they eat for the water they need.

Why is water so important? Besides being refreshing on a hot day, your body depends on water to function and survive. The same goes for other living things. A human's body weight is made up of approximately 60 percent water. Every day, you lose eight to 12 cups of water just by doing things like breathing, sweating and going to the bathroom. Your metabolism uses water for all sorts of things. Water helps regulate body temperature. It protects internal organs and tissues. Water helps lubricate joints, making movement easier. When you pee, water helps your body get rid of waste products. It dissolves important minerals and nutrients so they can be used. Water also carries oxygen and nutrients to cells in the body.

Water can also be a habitat. Think of fish and other aquatic animals. They eat, breathe, move and reproduce in water. Without water, these animals would not survive. For animals like beaver, otter, moose, mink, kingfishers, flycatchers and many others, the edges between water and land are their habitats. They might find food in the water but find shelter on land. They would not survive without the water to support part of their lives. These are just a few of the many important things water does for living things. Clearly, a good source of water is vital to a healthy habitat.

If you have ever been caught out in the pouring rain, you know how nice it is to find some shelter. Wildlife also needs shelter. It protects animals from the weather, both the heat of summer and the cold of winter. Shelter protects animals from predators by giving them a place to hide. It gives animals a safe place to raise their babies. Animals also use shelter to sleep at night or during the day.

Some animals can utilize many kinds of shelter. For example, a black bear might make its winter den in a cave; at the base of a fallen tree; in a large tree cavity; or even underground. Other animals need more specific kinds of shelter. Woodpeckers only nest in tree cavities. Finding the right tree is important. Good woodpecker habitat needs to have dead or dying standing trees so the woodpecker can make its nest cavity. Old woodpecker nest cavities are, in turn, used as shelter by many other kinds of animals from birds to bats to other small mammals. In fact, the abandoned shelter of one animal can be a perfect shelter for another.

Tiny creatures like insects find shelter under logs or rocks. Sometimes, the underside of a leaf is enough shelter for an insect. Underwater, fish use overhanging banks, submerged trees and rocks as shelter. Some fishes, like flounder, even burrow under the sand at the bottom of the water. This lets them hide from both predators and possible prey.

Some animals just find an existing space for shelter. A hawk might build its nest in a crack in a cliff. The hawk takes advantage of the shelter the cliff provides. Other animals build their own shelter. Think about a beaver lodge. This is a very specific kind of shelter. It takes a lot of time for beavers to build a lodge. A family of beaver might use the same lodge for a long time. Spiders spin webs to catch food and to hide. Each day, they build a new web. Squirrels build nests, called dreys, in trees to shelter them from the weather and raise their young. Spend some time looking around your yard or neighborhood park and see if you can find some shelter that you think an animal could use.

Shelter

40 Horse Cave Photo: CC-BY Secrets at Flickr Creative Commons

When talking about space and habitat, we are not talking about outer space. Have you ever seen a raccoon floating around the moon? Of course not! Space is the place where an animal or plant finds its food, water and shelter. Depending upon the size of the animal, the space it needs could be large or small. A shrew will need a lot less space than an elk. A dragonfly nymph needs less space than a trout. If the space has a lot of food, water and shelter, an animal might not need as much space. The opposite is true as well. If a large habitat does not have much food, water or shelter, it will not be a good place for some animals to survive.

Migrating animals need space in different parts of the world. The rufous hummingbird visiting your feeder in the summer also needs space to spend the winter. They fly all the way to central Mexico for the winter. They need space in different countries. Migrating animals like birds also need space for habitat along their migration journey. These are called stop-over habitat. Here the birds rest and refuel by eating as much as they can before resuming their journey. Without these vital spaces, these birds could not survive their migration.

Plants also need space. If the plant species has very general needs, it can survive in a variety of places. Some plants, however, need very specific soil types, moisture levels and amounts of shade or sun. The space in which they grow might be quite small. Space is the place where habitat happens.

Space

Rufous Photo: CC-BY John Gerlach at Flickr Creative Commons

Arrangement

Arrangement in a habitat means how the elements of food, water and shelter are found in a space. Are they close together or far apart? For wildlife, having habitat elements far apart is not a good arrangement. A tiny shrew might live in a habitat the size of your living room. As long as the shrew can easily find its food, water and shelter, that habitat arrangement is good. But what if all the food is in one corner of the habitat, the water in another and shelter in a totally different place? That habitat would not be well arranged for the shrew. It might not be able to survive. The same is true for a large animal like a mountain lion. These big cats might live in a habitat covering as much as 350 square miles. Imagine if the cat's prey hung out at one part of this area and its den was at the opposite side. That's not a very convenient place for the mountain lion to live. A good arrangement of food, water and shelter in a space is critical for an animal to survive in its habitat.

Photo: CC-BY Idaho Fish and Game

Carrying Capacity

When learning about habitat, a term you might hear is carrying capacity. This is the largest number of animals of a species that a habitat can support. If the number of animals gets too high, they can eat more food than their habitat can produce. This causes the number of animals to decrease. For example, if a deer herd grows too large for their habitat, they will eat most of the plants. This leaves little food for the deer, and they begin to die. With fewer deer, the plants can regrow and return to a level that supports the deer. With more food available, the habitat can support more deer again so the deer population can grow. In healthy habitats, animal populations tend to stay close to their carrying capacity.

However, situations can change. This can affect carrying capacity. Unusual weather events like a lot of spring rain could cause a big increase in plant growth. Too little rain and plants cannot grow. Each situation affects different animals and the carrying capacity of the habitat for those species.

The things that affect the carrying capacity of a habitat are called limiting factors. They can be thought of as something that is missing or limited in a habitat. These factors can include the amount of food, water and shelter. Things like the number of predators or a disease can also be limiting factors. Even things like the amount of sunlight or soil type can be a limiting factor. The activities of people can also be a limiting factor. As it turns out, healthy habitats are complicated!

Food Chains & Webs

Food chains and food webs are important parts of habitats. They show the connections between animals and plants in their habitat. A food chain is formed when one animal eats a plant and another animal eats it. Each plant and animal is a link in the food chain.

All food chains begin with the sun. It gives plants energy to grow and reproduce. When an animal like a rabbit eats a plant, it gets energy from the plant and the sun. The fox that eats the rabbit is getting energy from the sun, the plant and the rabbit. When the fox dies, scavengers and decomposers get their energy from eating the dead fox. Decomposers help return minerals and nutrients in the fox's body back to the soil. Plants take up those minerals and nutrients, and the cycle continues.

Food chains can happen in even the smallest habitat. Seeds can blow into a puddle and sprout, growing into tiny plants. A mosquito lays her eggs in the puddle, and the eggs hatch into larvae that eat the tiny plants. Sun, plants and mosquito larvae are all linked together in this small food chain.

Food webs are food chains that are linked together. No matter how different and separate plants and animals may seem, their food chains connect them in some way. Do you think a wolf would be connected to a salamander? It seems hard to see this connection, but both animals are connected through food webs. Wolves eat moose, and moose eat cattails. Salamanders eat aquatic insects that eat cattails. As it turns out, cattails are the connection between wolves and salamanders in the food web. If all the cattails die, the aquatic insects, salamanders, moose and wolves would be affected.

Everything in nature is connected in some way. We often do not see those connections. By looking at food chains and food webs, we can begin to understand these connections and why they are important. Can you think of any food chains and food webs in your own backyard? Where do you fit in a food chain?

Niche

Think about the place where you live. People in your community have special jobs or roles. Doctors keep you healthy. Teachers help you learn. Construction workers build places for you to live. Librarians help you choose books. The grocer provides a place to buy food. These are important roles and jobs that make your community a nice place to live.

Animals and plants living in habitats also have important roles and jobs. They might not be like human jobs, but they are just as important. These roles or jobs are called a niche (NITCH). An animal's niche includes things like where and how the animal gathers food and its link in the food chain. Bobcats eat a lot of rodents. Their niche helps keep rodent populations from getting too large. Owls hunt at night. Their niche is as a nocturnal predator. Vultures eat dead animals. Their niche is as a scavenger, helping recycle nutrients. Bumble bees pollinate flowers as they gather nectar and pollen. Their niche is being a pollinator. Niches are as varied as the animals and plants living in a habitat.

Sometimes it is hard to see an animal's important role. A yellowjacket seems to just be an annoying insect. But they play an important role, even if we don't like them. Yellowjackets and other wasps are top predators of crop-damaging insects like aphids. We might not like them because they sting, but without them, people and domestic animals would not have much food to eat. Skunks are another animal that don't seem to be very useful. They are smelly and can cause problems with their digging. But skunks eat more insects than any other kind of food.

Grasshoppers, beetles, moth larvae and others are important prey for skunks. By eating these insects, skunks help keep populations of insect pests from getting too high. This helps other wildlife, gardeners and farmers. The niches of animals are an important part of habitats all over the world.

Be Outside
Creating and Restoring Habitat

BE OUTSIDE
IDAHO CHILDREN IN NATURE

One of the best things that people can do for wildlife is create and restore habitat. Many people volunteer their time to help with these efforts. Planting trees, shrubs and wildflowers can help restore a habitat that was disturbed. Building and putting up nest boxes for cavity-nesting birds helps provide new places for these birds to nest. Biologists and volunteers are even building dams on streams, hoping to attract beavers. The biologists hope these furry engineers will help restore wetlands. Sometimes, restoring habitat means keeping people out for a while. This lets the habitat grow back on its own without people causing damage.

You can create habitats right in your own backyard. It's amazing what even a small corner habitat can attract. Doing things like planting native plants can bring pollinators to your yard. Adding a nest box or two along with some bird feeders can turn your backyard into a habitat for your neighborhood birds. Planting some trees creates both habitat and some shade for you and your family to enjoy in the summer. The addition of a brush pile will create shelter for many small animals. Bird baths give birds a place to take a drink and have a bath. Just leaving a small area of dirt or sand can give solitary bees a place to nest or a spot for birds to dust bathe.

If you are interested in helping with habitat restoration projects, talk with your parents. Maybe your entire family could help. Contact your nearest Fish and Game office and ask to speak with the volunteer coordinator. Organizations like Audubon and native plant societies often have volunteer opportunities. By participating, you will learn something new, make new friends and know that you are making a difference for Idaho's wildlife.

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WE WOULD LIKE TO HEAR FROM YOU!

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