Wildlife Express!

Volume 23 Issue 1 September 2009

Idaho Ecosystems

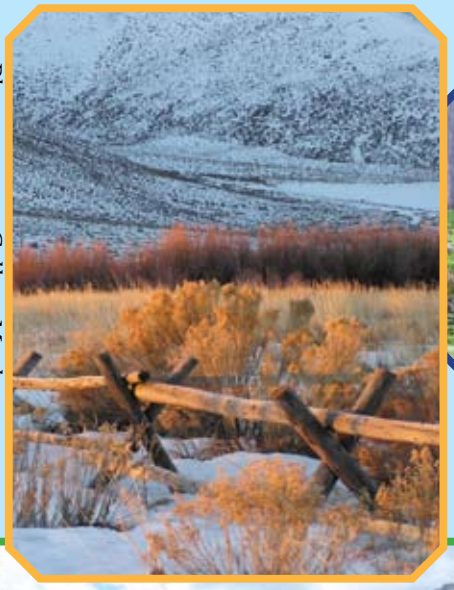


Photo courtesy Colleen Moulton

Photo courtesy Lynn Kinter

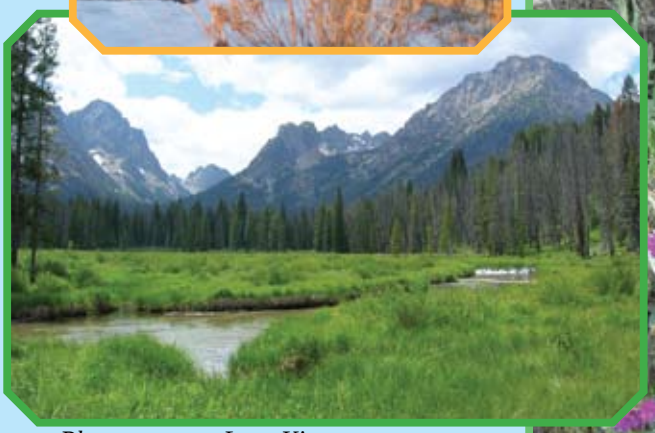


Photo courtesy Lynn Kinter

Photo courtesy Juanita Lichthardt

Idaho Has Four Main Ecosystems

Know the Lingo

Habitats, Communities, Ecosystems, Biomes – What do these words mean?

Have you heard people using the words "habitat" or "community" when talking about wildlife? What about "ecosystem" or " biome?" These are big words! Sometimes it is hard to figure out what the words mean. Here is the low-down on the lingo.

The word "habitat" means a home. A habitat has everything a plant or animal needs to survive. It contains four things: food, water, shelter and space. If one part is missing, the plant or animal will have a difficult time surviving. If you hear someone say "mule deer habitat" or "sagebrush habitat," that person is talking about a place that can support mule deer or sagebrush. These are areas where mule deer or sagebrush can live.

You are probably familiar with the word "community." You live in a community. A community is a group of people living in the same place. In nature, the word community is a bit different. When scientists talk about a community, they are talking about the plants and animals that live in an area and how they interact with each other.

The word ecosystem is used when the non-living parts (water, soil, weather, temperature, etc.) are added to the living parts of a community. Ecosystems can be very small, such as a pond or puddle. They can also be very large, such as a tropical rainforest. Do you think that the Earth can be considered an ecosystem? Some people think so.

If you hear someone talk about an ecoregion, they are talking about a specific area and the types of communities that are found there. An example would be the Florida Everglades or the Snake River Plain in Idaho. These areas have certain climates, terrains, soil types, and types of plants that are specific to these areas.

Another word that is used to describe different natural areas is the word "biome." A biome is a large area that is defined by the types of plants and animals living there. An example would be a desert. Deserts are found in many parts of the world. Within a biome, there are usually many different ecoregions and thousands of different ecosystems. Now you should have a better idea of what these words mean.

Exploring Idaho

Idaho's ecosystems give people many places to enjoy wildlife. Knowing each ecosystem is a big help when observing wildlife. When you know about ecosystems, you know that when you visit the desert you should not look for mountain goats. Seeing bighorn sheep in the forests of northern Idaho is also pretty unlikely.

BE OUTSIDE

People who enjoy wildlife often have certain animals they would like to see. Bird watchers look for certain birds to add to their bird lists. Hunters look for a certain species that they can harvest. Wildlife photographers may be interested in photographing only specific animals. Understanding ecosystems and the animals that live in them helps them successfully enjoy their outdoor activity.

How can you become an ecosystem expert? Now that you know about Idaho's ecosystems, see if you can figure out the ecosystem where you live. Check out the trees and other plants. Do they need a lot of water or just a little bit? Record how much rain or snow falls to see how much water your area receives. Dig in the dirt to look at the soil. Is it dry, wet, or in between? What about the temperature? What kinds of animals do you see? Keep an outdoor journal to record all this information. Check the library, internet, or talk to a wildlife expert to learn the animals that live nearby. Take some scouting trips with your friends or family to observe these special animals. If you take a trip to another part of Idaho, compare areas and observe the differences. Before you know it, you will be a real Idaho ecosystem expert!

What is an ecosystem?

An ecosystem is made up of many things. About everything you could think of in nature is found in an ecosystem. Ecosystems include all the living parts of a community - the plants, animals, and smaller organisms. It also includes the non-living things, like water, dirt, rocks, sun, rain, wind, and temperature. You might also hear an ecosystem called a life zone.

Ecosystems come in all sizes. Have you ever turned over a rock in your backyard or in a park? Under that rock was an ecosystem. You may have seen a beetle scurry away as you lifted the rock. What was the beetle eating? An earwig or sowbug would make a nice dinner for a ground beetle. Was the dirt wetter and cooler under the rock than beside the rock? The beetle that was under the rock most likely needed a cooler, more moist environment to live. When you start to think about it, you can probably think of many differences between the area under the rock and the area around the rock. It is these differences that make ecosystems so special. Just think how different the plants, temperature, moisture, wind, and sunlight would be under the rock than above or around the rock. There are even differences between rocks that are right next to each other. It is amazing! Who knew it could be so special under a rock?

People who look at and study ecosystems are called ecologists. They like to see how everything interacts with each other. Everything in an ecosystem depends upon everything else. If people change one small part of an ecosystem, they change more than that one part. Think about the rock again. If people put out a chemical to kill the earwig, will the beetle find any food? It may have to look under another rock to find food. What if it wasn't wet enough under that rock? The beetle could die. In the end, there could actually be more earwigs because all the beetles died that were eating them. Sometimes things are more complex and tricky than they seem. Changing one thing can change the whole ecosystem.

Some ecosystems are in danger. Scientists break the dangers into five categories. They call these dangers HIPPO. No, not the animal hippopotamus!

HIPPO stands for:

Habitat loss – Sometimes habitats are used for other things. People may cut down a forest to use the wood for paper or to build homes.

Introduced species – Often people put a plant or animal in an ecosystem that is not supposed to be there. Have you ever heard of cheat grass? It was brought to Idaho by accident. Cheat grass has long seeds that get caught in your socks when you walk through it. Cheat grass catches on fire easily. In many parts of Idaho, fire burns the land more than it used to. This makes it harder for sagebrush to grow. Cheat grass has changed many of Idaho's ecosystems.

Pollution – Pollution means any human caused change. It may be seen, like litter, or it could be unseen, like chemicals in the water.

Population growth – Everyday more people are born. All of these people need food, clothing, and shelter which come from ecosystems.

Over-consumption – Over-consumption means using natural resources, like oil and trees, faster than they can be replaced in nature.

People are looking at all of the effects that HIPPO has on ecosystems. They are trying to come up with ways to get everything people need to survive and also keep ecosystems healthy. This is a difficult thing to do, but it can be done. Remember that people need ecosystems, too. If we protect and care for ecosystems, we are also caring for ourselves.

Forests

You have probably been in an Idaho forest before. Think about where you were and what the land was like around you. If you think about it, you were probably in or close to some mountains. Idaho's forests are found mostly in its mountains. In the mountains, summers are warm with cool nights, and winters are cold.

The forests in southern Idaho and northern Idaho can be pretty different. The one thing that makes them so different is water. Southern and central Idaho forests get most of their water from winter snow. Some southern Idaho forests only get 14 inches of water a year! That includes all rain and snow. Northern Idaho forests are thick and lush because they get more rain. Some northern Idaho forests average about 30 inches of water a year. That's more than double the amount of water a forest in southern Idaho will get!

Photo Courtesy Terry Thomas

Idaho's forests have mostly conifer trees growing in them. Conifers are trees that have small, thin leaves that look like needles. Their leaves usually stay green all year. Pine, fir and spruce trees are conifers.

It's really the nonliving parts of the ecosystem that determine which trees will grow. It's the water and elevation. Wet forests at lower elevations will have western red-cedar, western hemlock and Pacific yew trees with ferns growing underneath. Idaho's driest forests will have ponderosa pines and Douglas-fir. Huckleberries, snowberries or grasses might be found under the trees. At higher elevations, you are likely to see white bark pine, subalpine fir, Englemann spruce, and mountain hemlock. These trees like to be high up on the mountain side. Dwarf huckleberries and beargrass are often found growing with subalpine firs. Lodgepole pine and western larch are not as picky. They grow in wet, dry, high or low places. Grand fir is an "in-between" tree. You will often find it growing between wet and dry and high and low places.

Many of the animals you will find living in Idaho's forests use the trees for shelter or food. Porcupines love to eat the bark off of pine trees; they will also eat the pine needles. During the winter, porcupines find shelter in the tree boughs. If the snow is very deep, they may spend weeks in the same tree. Black bears are also common animals in Idaho's forests. They eat mostly berries, pine nuts and grasses. Idaho black bears don't eat many fish or much meat. Red squirrels are found in almost every forest ecosystem in Idaho. They eat pine nuts and find shelter in holes in the trees.

Keep an eye out for other animals like deer, owls, birds, beetles, or wolves when exploring our forests. Think about what you see. Is the forest wet or dry? Are you high or low in elevation? What kind of trees and animals do you notice? How do these things help and hurt each other? Write your findings down in a journal. You will be exploring Idaho's forest ecosystems just like an ecologist.

Photo courtesy Lynn Kinter

North Idaho Forest

Deserts

IDFG Photo

What do you think about when you say the word “desert?” Do you think about miles and miles of sand dotted with big, tall cacti? Do you think about high, bare sandstone bluffs and tall spires of rock that Wiley Coyote and Roadrunner call home? Well, that’s one type of desert, and it’s usually found in the southwestern United States. In Idaho, we have a different kind of desert. It’s all around us in southern Idaho. It’s called sagebrush steppe (step).

Idaho is part of the Great Basin Desert. The Great Basin desert is about 190,000 square miles. It is the largest of four deserts in North America. The Great Basin desert is a cool or “cold desert.” It is cool because much of the desert is at elevations over 4,000 feet. Snow is a common sight in the winter. Our desert has cold winters and hot summers with cool nights. Like all deserts, it doesn’t get much moisture. Only about four to 12 inches of water falls during the year, and that includes the winter snows.

As you drive through this area, you see mile after mile of low, mounding gray-green shrubs. Most of these shrubs are sagebrush, but there is also rabbitbrush and bitterbush. Mixed in with the shrubs are grasses, wildflowers, soft-stemmed plants, and a few cacti, like prickly pear.

Photo courtesy Beth Waterbury

Plants that are adapted to live in the desert are called xerophytes (ZER-o-fites). Xero means desert and phytes means plants, so xerophytes are desert plants. These plants often have special leaves. Sometimes they are waxy, hairy, spiny, or small. Sagebrush has narrow leaves that are covered with tiny hairs. This helps protect the plant from drying out in the summer heat and in the cold winter. Desert plants also usually have a long tap root to reach water deep in the soil. Sagebrush developed so that it can water itself! At night, the tap root of sagebrush pulls moisture from deep in the soil to shallow branching roots that grow near the surface. During the day, the shallow roots use this water to keep the shrub alive. Sometimes desert plants live off of other plants or dry up during the dry season.Then, when water comes, the plants spring back to life.

Sagebrush is the most important plant in Idaho’s deserts. This woody shrub provides food and cover for many desert animals year-round. The pygmy rabbit is the smallest rabbit in Idaho. This tiny bunny is only found living around sagebrush. In the winter, sagebrush is the only thing it eats! Pygmy rabbits also dig their burrows under tall sagebrush. This helps to hide the burrow entrances.

Our sagebrush desert is the perfect place for many animals to call home. Sage grouse, coyotes, lizards, snakes, mountain lions, and pronghorn are just some of the animals that love our sagebrush desert. To some people, the sagebrush desert is a boring landscape. For those who understand and appreciate deserts, it’s fascinating and beautiful.

IDFG Photo

Aquatic or Water

Photo courtesy IDFG

Aquatic, or water, ecosystems are one of the most important ecosystems on Earth. Aquatic ecosystems include all of Idaho's rivers, streams, lakes, and ponds. They include not only water, but the land around the water. Marshes, bogs, swamps and riparian (ri-PEAR-ee-en) areas are also included. Sometimes these areas are called wetlands.

Judging by the name, you might think that a wetland is just that, wet dirt, but they are more than soggy soil. In North America, you can find more plants and animals living in wetlands than any other place. Only about one percent of all of Idaho's land is considered wetlands, but 75 percent of Idaho's wildlife species depend upon wetlands during some part of their life. Wetlands give wildlife the food and shelter they need. Some animals you will find around wetlands are beaver, muskrats, mink, otters, insects, fish, ducks and geese.

You may think wetlands would always be covered by water. Well, not always. Areas need more than just water and land to be called wetlands. They need three things: water, soils that hold onto water and water loving plants. If one of these is missing, the area is not called a wetland. Soils that hold onto water are called hydric soils. Hydric means water. These soils usually have lots of dead plants in them. Water loving plants are called hydrophytes (HI-dro-fites). Hydro means water, and phytes means plants. These water loving plants won't rot or suffocate in water like other plants.

There are many different kinds of wetlands. In Idaho, you may hear wetlands called riparian areas. This is the green area along the water's edge. Wetlands around flowing water, like rivers and streams, are called marshes and swamps. Marshes have grass-like plants. Cattails and sedges are found in marshes. Swamps are wetlands with woody plants. Cottonwood trees and willows are found in Idaho's swamps.

Have you ever heard of bogs and fens? These are special wetlands that are from 4,000 to 60,000 years old! They grow only one inch every 100 years! Peat moss and other mosses are found in bogs and fens. Plants have a difficult time living in bogs. The soil is high in acid and low in nutrients, so plants need other ways to get the things they need to live. Two plants, sundews and bladderworts, eat meat. These plants capture insects in their long, hairy, sticky leaves. Who knew Idaho has a plant like the Venus fly-trap!

Indian Valley Sedge

Photo courtesy Lynn Kinter

Playas (PLY-as) and potholes are found in Idaho. Playas are often dry. They are found in Idaho's desert. They may hold water for just a few weeks. These small lakes are important to wildlife. Many toads lay their eggs in them, and birds use them as places to rest during migrations.

Wetlands do many important things. They help clean water. The slower the water moves, the less dirt and pollution it can carry. Wetland plants slow down water, so dirt and pollution are filtered out. They also give wildlife a safe place to raise their young, rest and feed. Wetlands sure are more than just wet dirt!

Grasslands

IDFG Photo

Idaho's grasslands are located in northern Idaho in an area called the Palouse. If you find the town of Moscow, Idaho on a map, this area is part of the Palouse.

The Palouse looks very different than it did before humans settled the area. At one time, the rolling hills of the Palouse were covered with native grasses. The soils on the Palouse are special. They are made of rich wind-blown silt called loess. Loess has a lot of dirt in it from ancient volcanoes. The volcanic soil is rich in minerals that are perfect for growing grasses. It is also good for growing crops. Much of the native grassland has been turned into farm fields. The grasslands in the Palouse are one of the most endangered ecosystems in the United States. Only a little over one percent still exists.

Plants that live on the Palouse are grasses, like bunchgrass, wheatgrass and fescue, and wildflowers, like camas. Grasslands can be windy places because there are not many trees to help slow the wind. Plants that grow in grasslands have developed ways to survive the wind. Many grassland plants are wind pollinated. Instead of relying on insects to pollinate their flowers, they let the wind blow the pollen from plant to plant. They also have long, narrow leaves to reduce evaporation in the wind.

Summers and winters are mild in the grasslands. Rainfall averages 27 inches per year, and it is evenly distributed throughout the year. To catch rain and surface water, many grassland plants have shallow, fibrous roots. If you have ever pulled a bunch of grass from your lawn, you know what these roots look like. Grass roots are made to absorb water from the surface of the ground. Since rainfall is spread out during the year, most grassland plants in Idaho don't need to have long tap roots to get water deep in the ground.

IDFG Photo

Animals that live in grasslands often seek shelter in the ground. There are not too many plants to hide in or under. Pocket gophers, skunks and red foxes can all dig their own burrows to raise their young and find shelter.

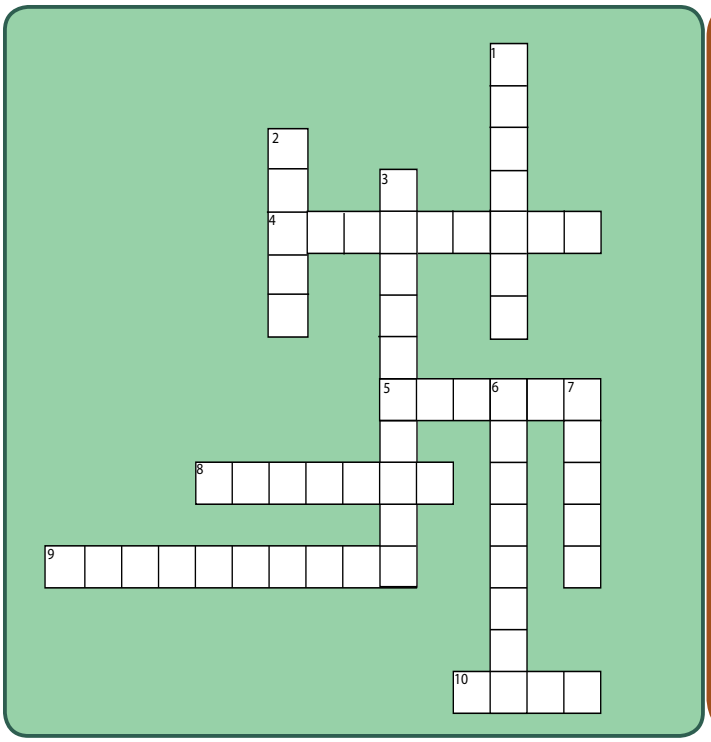
A very interesting worm also calls the Palouse home – the giant Palouse earthworm. This worm has only been seen four times in the last 110 years! The last time it was seen was in 2005. The worm is said to reach lengths of three feet and live in burrows 15 feet long! It is a white-pink color. When it is handled, it makes an odor that smells like lilies. It is even said to spit at predators! This worm has only been found living under native Palouse bunchgrass. Who would have thought that such an amazing creature would be living in Idaho's grasslands!

Photo courtesy Lynn Kinter

Ecosystems Puzzler

Words:

Basin
Clean
Forests
Grasslands
Hydric
Palouse
Riparian
Sagebrush
Snow
Xerophytes



Across

4. This is the most important plant in Idaho's deserts.
5. Soil that can hold onto lots of water is called _____soil.
8. Idaho's _____are found mostly in its mountains.
9. This Idaho ecosystem is considered one of the most endangered ecosystems in the United States.
10. Southern and central Idaho forests get most of their water from _____.

Down

1. This is the area where most of Idaho's grasslands are found.
2. Idaho belongs to the Great _____Desert.
3. This is the name for desert-loving plants.
6. The green area along the water's edge is called the _____ area.
7. Wetlands help to _____water.

WILDLIFE EXPRESS

Volume 23 • Issue 1 • Idaho Ecosystems • September 2009

Wildlife Express is published nine times a year (September-May) by the Idaho Department of Fish and Game. Classroom subscriptions and an Educator's Guide are available for $35.00 per year and includes a classroom set of 30 copies mailed to your school each month. Subscriptions of 10 copies or less are available for $20.00. This publication is made possible through the sale of wildlife license plates.

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WE WOULD LIKE TO HEAR FROM YOU !

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