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Migration

Sockeye Salmon CCBY Idaho Fish and Game; Butterfly Photo CCBY Melissa Burovac, Unsplash

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What is Migration?

Photo CCBY Melissa Burovac, Unsplash

Do you have a special place you go to during the summer or winter? Your family may like to camp by a lake to escape the hot, dry days of summer. A sledding trip sure can brighten a long, gray winter day. People often take vacations in the same place year after year. Often these places mean something special to us. Many animals travel, too. When wildlife travels from one habitat to another habitat, we call it migration.

During the fall and spring, we often see animals on the move. An animal may migrate thousands of miles or less than 100 feet between habitats. The distance an animal moves is not important. What is important is that the animal moved between habitats during the year to survive.

Animals migrate for many reasons. The main reasons why animals migrate are to find food and find safe areas to breed and raise young. During the fall, days become shorter; nights become longer. The amount of sunlight reaching us is less, and temperatures are cooler. Shorter days mean animals have less time to look for food. Many plants die off for the winter or are buried under snow. It can be difficult for animals to locate food. Migrating to warmer, milder climates is a lifesaver to wildlife that depend on plants and insects.

Sometimes habitats that are good places for eating are not good places for breeding or raising a family. Young animals often need special attention. They may need areas with more trees or bushes to hide from danger. It takes a lot of energy to have and raise young. This is often a stressful time for mothers. Mothers may need to eat more food or eat food that has more nutrients. Sometimes moving is the only way to find a habitat that meets the needs of mother and young. Migrating may be the only solution to make sure young survive.

Migration is a wonderful thing. It is a tool animals can use when their habitat is not meeting their needs. Can you think of an animal that migrates? Look inside this issue of Wildlife Express to learn about some of Idaho's migratory animals. You might be surprised by what you read!

Photo CCBY Craig Brown, Unsplash

Birds-Star Athletes

Birds are champions when it comes to migration. Not only do some bird species travel a long way, but they also do it in record time. Check out these amazing flights:

Red knot This small sandpiper migrates 9995 miles from the tip of South America to its nesting grounds in the Canadian Arctic. In fall, it flies back to South America. One banded red knot, known as B95, has flown more miles in its lifetime than the distance between the Earth and moon. Red knots weigh five ounces, the same as a deck of cards.

Bar-tailed godwit This dove-sized sandpiper holds the record for the longest nonstop flight of any migratory bird. They fly 7200 miles, nonstop, from nesting grounds in western Alaska to New Zealand.

Arctic terns make a huge figure eight pattern across some of the world's oceans. Their round-trip migrations add up to as much as 51,000 miles a year! This is twice the distance scientists used to think these birds travelled.

How do these small birds make such incredible journeys? Before migration begins, all migratory birds do a lot of eating. All the extra food becomes fat. This stored fat provides the energy that fuels their muscles during flight. Birds that make nonstop flights, like the bar-tailed godwit, also shrink some of the body organs they do not need during migration. Since they will not eat or drink on their journey their intestines, salt glands and other organs are not needed. By shrinking these organs, the birds are lighter. In addition, the energy used to maintain these organs can be used for flying.

Once birds arrive at their destination, they eat and eat and eat. This helps their bodies recover from their long migrations. All migratory birds need places to stop, eat and rest for the next part of the journey. Good habitat makes sure these birds have what they need to recover from their amazing migration journeys.

Red knot

Arctic terns

Mammals on the move

Photo CCBY Jeremy Perkins, Unsplash

Many mammals migrate between summer and winter habitats. Deer and elk migrate to find food. During the winter, deep snow makes it harder for deer and elk to get food. To avoid snow, deer move down the mountains to lower elevations where the snow is not as deep. They may also move to south-facing hillsides. The sun hits these areas more, so snow melts faster, and the deer get warmed-up by the sun. When summer and spring arrive, deer and elk migrate back up the mountainsides where new plants are growing.

Caribou are also members of the deer family that migrate. Barren-ground caribou live in the Arctic. They are known for their long-distance migrations. Some barren-ground caribou migrate thousands of miles between their summer and winter habitats. Woodland caribou were once found in Idaho and may, on rare occasions, wander into Idaho from Canada. They also migrate, but they are different. Most animals travel down mountains in the winter to stay away from deep snow but not woodland caribou. They migrate up to the tops of mountains! Caribou hooves are large and round, so they don't sink as deep in the snow. Their feet work like snowshoes. Woodland caribou move to the tops of mountains where there are fewer predators and more food. During the winter, caribou eat lichen (LIE-ken) growing on trees. It looks a bit like green or brown spaghetti hanging from tree branches. Another name for this lichen is old man's beard. Lichen is the most important winter food for caribou. As the snow gets deeper in the winter, caribou can reach lichen growing higher in the trees. The snow is a bit like a ladder, allowing them to reach food that was once out of reach. During the summer, caribou move down into thick forests lower on the mountainsides and in valleys. Here they hide and give birth to their young.

Caribou Photo CCBY Juan Encalada, Unsplash

There are even bats in Idaho that migrate. Some of Idaho's bats hibernate for the winter, but the pallid bat and hoary bat migrate. They fly south where the weather is a bit warmer to wait out the winter. When temperatures get warmer and insects start to appear in the orth, they fly back to Idaho to spend the summer and give birth to their young.

Hoary bat

Bat and Elk Photos CCBY Idaho Fish and Game

Amazing
Migrating Amphibians

Spotted frog

Do frogs and salamanders migrate?

They sure do! Spotted frogs that live in southern Idaho migrate from hibernating sites to breeding and feeding sites. The dry desert of southern Idaho is not a place many people think of as wonderful frog habitat. Frogs have moist skin, and they need to keep it that way! If a frog dries out, it may die. Spotted frogs have adapted to Idaho's dry desert by migrating between pools of water. They live around springs and streams. Some of the springs will dry up by the end of summer, so the frogs need to move. Spotted frogs migrate one-fourth to one-half of a mile between pools of water. One lap around a race track may not seem long to you, but for a frog that would be like running a marathon! Moving that far for a frog is an amazing feat.

Long-toed salamander

Many salamanders also migrate between the areas where they lay their eggs and where they spend the rest of their time. Salamander eggs need to be kept wet, just like frog eggs. In the spring, long-toed salamanders migrate to lakes and ponds. Here they find a mate and lay eggs. Once the eggs are safely in the water, long-toed salamanders move back to drier land to live out the rest of the year.

Meandering Monarchs & Dashing Dragonflies

Illustration by Paityn Goodnight
Lakeview Elementary 4th Grade

Migrating insects, you say? Believe it or not, there are insects that migrate.

Perhaps the most well-known migrating insect is the monarch butterfly. Monarch migration is unique and amazing! They are the only butterfly known to make a two-way migration, like birds. Unlike other butterflies, monarchs cannot survive cold winters as caterpillars, pupae or adults. They must travel to warmer climates to survive. Monarchs travel long distances, using air currents and thermals to help them along. Some fly as far as 2,000 to 3,000 miles! Idaho's monarchs and others from western North America travel to California for the winter. They stay along the Pacific coast near the cities of Santa Cruz and San Diego. Monarchs that live in eastern North America travel to Mexico. Monarchs travel between 50 to 100 miles a day. At night, they huddle close together in a roost. Pine, fir and cedar trees are great places for them to rest. Idaho's monarchs stay in California until the warmer, longer days tell them it is time to fly north. This is called the migrating generation. The migrating generation will not be seen in Idaho. They lay eggs while traveling north and die. This will happen three or four more times before monarchs finally reach Idaho.

In Idaho, we have four dragonflies that migrate. They are common green darners, wandering gliders, variegated meadowhawks and black saddlebags. The green darner dragonfly is the largest dragonfly in Idaho. It can be up to three inches long! The green darners we see in June emerged from ponds and lakes in the southern part of the United States. They fly to Idaho, lay eggs and then die. The eggs laid by the dragonfly will hatch, and the young dragonflies will stay in their watery home for two to three years. In August, green darners leave their watery home and fly south. Here they lay eggs that will develop and these adults migrate north to continue the cycle. Black saddlebags and variegated meadowhawk dragonflies are sometimes seen traveling south in swarms with the common green darner.

Another migrating dragonfly in Idaho is the wandering glider. These brown and orange dragonflies use stored fat in their abdomens to give them energy needed for migrating. They travel hundreds or even thousands of miles looking for seasonal ponds to lay their eggs. The young dragonflies eat a lot and grow quickly before their ponds dry up. This dragonfly is found all around the world. In Idaho, they are found along the Snake River Plain.

These are just a few examples of migrating insects. Can you think of other insects that migrate? Do some research to see if you are correct.

Sockeye Salmon Photo CCBY Idaho Fish and Game
Illustrations from Vecteezy.com

FANTASTIC FISH

Birds migrate. So do mammals and insects. But fish?

You bet! Idaho is home to some of the champions of fish migration - salmon and steelhead. These fish are anadromous (a-NAD-ro-mus). This means that they are born in freshwater then migrate to the ocean to eat and grow. They return to freshwater as adults when it is time to spawn or lay their eggs. Idaho's sockeye salmon travel 1800 miles in their round trip journey between Idaho's Redfish Lake and the Pacific Ocean. And that doesn't include all the swimming they do around the ocean.

Fishes that are not anadromous also migrate. Like anadromous fish, their migration is to find food and to spawn. A bull trout that was part of a study made an annual migration from Hells Canyon to Central Idaho that topped 200 miles! The bull trout was captured and a small electronic tag was placed in its body. If the bull trout was recaptured or swam by a detecting site, the tag's number was recorded. This allowed researchers to see when and where the bull trout traveled. Idaho's state fish, cutthroat trout, average 78 miles for their round-trip migration. These fish leave wintering areas in the spring. They arrive in their spawning areas where they hang out for the summer. Come fall, they spawn then head back to their wintering areas. Radio tagging studies have shown that some of these fish return to the exact pool where they started their journey as eggs!

How does a fish know which way to go? Studies have shown that fish can detect polarized light patterns. Fish also use their sense of smell. To a fish, water has very specific scents. Fish are able to smell their way back to the same stream where they were born! Could you smell your way home from school?

Photo CCBY by Ryan Hagerty, Idaho Fish and Game

Finding their way

How animals migrate is a great puzzle. Long ago, people had some strange ideas about migration. Some thought that birds spent the winter under the mud of lakes. Other ancient scientists thought that birds changed into different birds in the winter. Today, these explanations sound pretty silly. While we have not uncovered all the secrets of how animals find their way, we have some pretty good ideas:

Sun Compass

Some migrating animals use the movement of the sun across the sky to find their way. The sun changes position as the Earth rotates. Because of this, animals need to be able to make adjustments to their travel direction, so they don't just follow the sun. This is called "time compensation." Experiments with birds showed that this is what happens. Animals that migrate during the day are likely to use a sun compass.

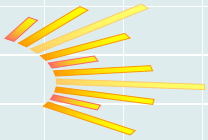
Star Compass

The star compass is like a nighttime version of the sun compass. Scientists discovered that young birds learn to find north by observing the pattern of stars around the North Star. This pattern includes the Big Dipper, Little Dipper, and other stars. As these constellations rotate around the North Star, they stay in the same position from each other. This allows birds to find north. Many songbirds and shorebirds migrate at night using a star compass.

Magnetic Compass

Earth has two magnetic poles, the South Pole and the North Pole. These two poles turn the Earth into a big magnet. Between the two poles are invisible magnetic lines of force. They make up the Earth's magnetic field. This makes your compass work. The magnetic field is stronger at the poles and weaker at the magnetic equator. At some points, the magnetic field touches the earth at an angle called the dip angle. Birds and other animals like sea turtles can find north and south because they detect these magnetic lines of force. Scientists believe that birds can also detect the dip angles. This would help them know how far to the north or south they have moved.

Polarized Light



Polarized light comes from special kinds of light waves. It creates a special pattern in the sky. This pattern stays the same as the sun moves across the sky. Even if the sky is cloudy, animals can still detect the polarized light pattern. This tells them the position of the sun. Insects, amphibians, fish and birds use polarized light to migrate.

Landscape Maps

How do you find your way to school? Do you turn right at a certain block by a specific house? These are examples of landscape clues you use to navigate. Scientists think that some animals use landscape maps when they migrate. Things like mountain ranges, rivers or coastlines can be part of landscape maps.

Migration is still mysterious. We don't understand all the ways migrating animals find their way. The one thing we do know is that these amazing migratory animals understand exactly how to get where they are going!

Photo CCBY by
Markus Spiske, Unsplash

Photo CCBY by Jie Wang, Unsplash

Idaho has many different kinds of migrating animals. From birds to salmon to elk to monarch butterflies, migration is all around us at certain times of the year. So how do you see migration? The first step is to become a good observer. Pay attention to what is around you. Make a record of the animals you see during every month. This could be a list, drawings or notes of your sightings. Your observations can show you migration patterns of the animals you see in your area. After a while, you can predict what kind of animals you will see when. It's kind of exciting to see if your predictions are correct!

Watch for different animals during different seasons. If you observe elk during the winter on bare hillsides, but they are not there in the summer, that is a migration pattern. Check out the birds that visit your backyard feeders. While some of the birds may hang around all year, other birds will be around only in certain seasons.

Plan to take a family trip to a wildlife refuge in each season. Keep a list of what you see on each visit. Compare your list of observations. What has changed? Visit the Salmon or Clearwater Rivers to check out migrating salmon. Make a trip to Stanley to see migrating sockeye salmon. Take a cruise on Lake Coeur d'Alene to see bald eagles spending the winter in Idaho. Visit a wildlife management area to see thousands of migrating snow geese in the spring. Use binoculars to watch birds as they fly past a full moon when migrating at night. By paying attention, you can observe some of nature's most amazing cycles.

Wandering WORDS

Find the migration related words and phrases in the word search puzzle.

T	Z	N	S	U	R	V	I	V	A	L	N	V	Y	E	F	B	Q	J	M
J	E	I	E	O	U	T	F	A	W	Z	V	I	V	F	E	V	W	I	Z
K	A	J	L	G	A	P	O	L	A	R	I	Z	E	D	L	I	G	H	T
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ANADROMOUS
LANDSCAPE MAPS
MAGNETIC POLES
RAISE YOUNG
FLOCK
CHANGING HABITATS
SUN COMPASS
POLARIZED LIGHT
SURVIVAL
HERD
LACK OF FOOD
STAR COMPASS
MIGRATING GENERATION
SEASONAL PONDS
AVOIDING COLD

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Mountain Bluebird CCBY Catherine Zinsky

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WE WOULD LIKE TO HEAR FROM YOU!
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