

Wildlife Express

VOLUME 37 | ISSUE 10

JUNE 2024



Bull Trout

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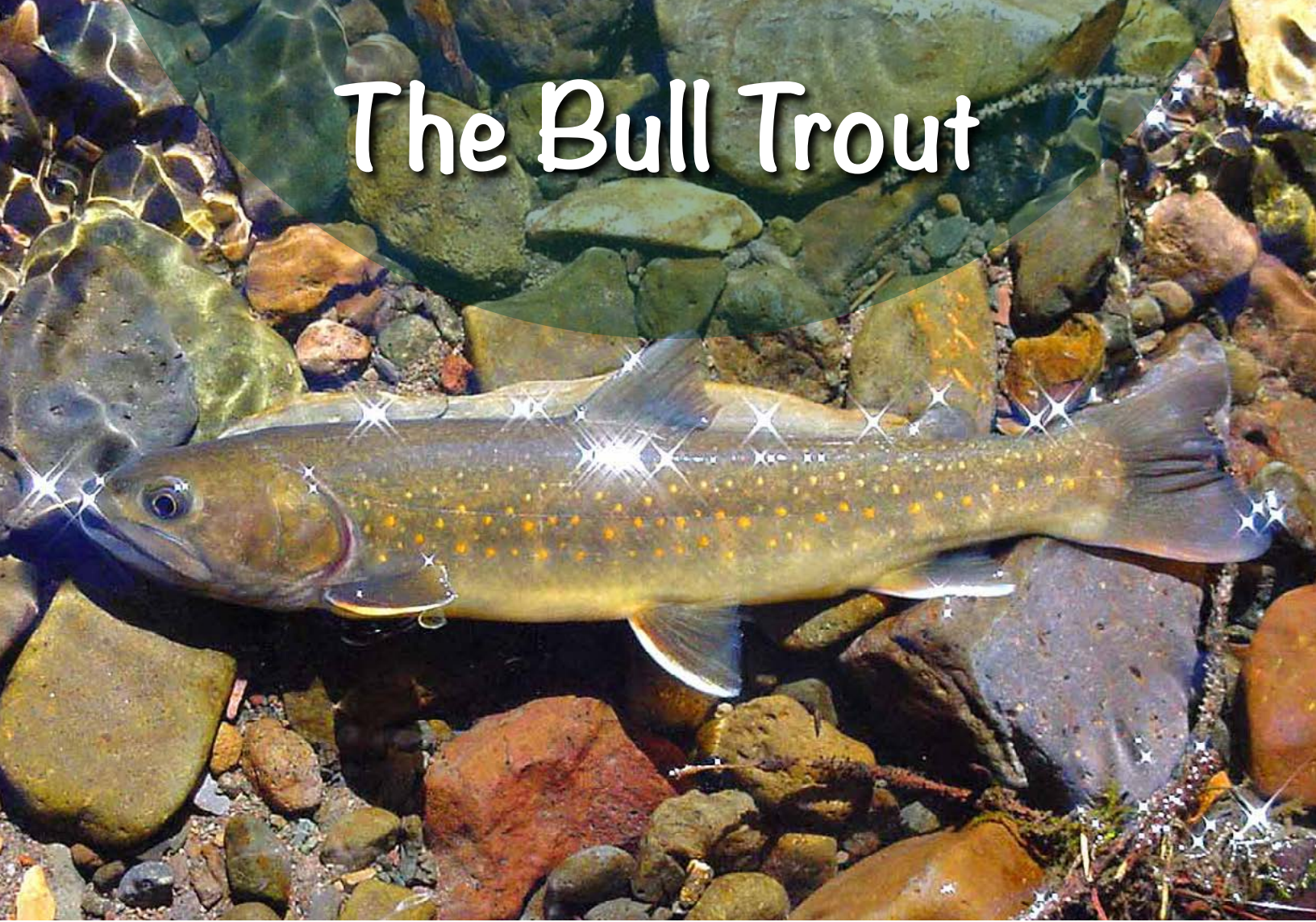
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idfg.idaho.gov

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The Bull Trout



Idaho has some amazing fish species. One of the coolest is the bull trout. They are members of the salmon family. Within that family, bull trout are in a group called char. They have dark bodies with light-colored spots. Bull trout are olive green with round, pale orangish spots on their sides and small yellow dots on their back. Char are also found in cold northern waters. This makes sense because bull trout are native to the Pacific Northwest, Alaska and Canada.

Bull trout are definitely fish of cold waters. Idaho's snowmelt-fed streams, rivers and lakes give these trout the cold water they like. No warm water for bull trout! In fact, if the water temperature rises above 58 degrees, bull trout are in trouble. Bull trout like to hang out in deep pools where the water is cold, dark and quiet.

Bull trout can get huge! They can weigh around 30 pounds and be over three feet long. That's as tall as your three-year-old sibling! Most bull trout are smaller, around 25 inches in length. That is still a big fish. When they are young, bull trout eat aquatic invertebrates like insect larvae and crayfish. As they get larger, so does their food. Adult bull trout eat fish like suckers, minnows, sculpins, whitefish, and trout. They also eat frogs, snakes, and ducklings. Bull trout will even eat small mammals like mice or voles that find themselves swimming. Bull trout are opportunistic feeders---if it swims past, a bull trout will eat it!

Like people, bull trout take time to grow up. They usually do not mature until they are four to seven years old. At this time, bull trout can spawn. Between August and November, bull

trout travel to small, quiet streams. Here, the female builds a nest called a redd. She turns the gravel with her tail to clean it off. She lays about 5000 eggs in the redd, and the male fertilizes the eggs. These eggs will remain in the redd for about 210 days before hatching into tiny fish called fry. The fry will stay in the stream until they grow large enough to move downstream into larger waters.

Idaho used to have many bull trout. Unfortunately, this species has become more uncommon. It is considered threatened in Idaho. This means that bull trout could become endangered in the future. As land use has changed, the waters bull trout depend upon have changed, too. Some of them have become unhealthy. Because bull trout have such

special habitat needs, they are an indicator species. If their numbers are healthy, so is the aquatic habitat they live in. But if they start to disappear, it tells us that the aquatic habitat is unhealthy. This affects every animal that depends upon that habitat, including us.

Fortunately, people are working to help bull trout and other animals that depend upon healthy rivers and streams. Fishermen cannot fish for bull trout. This protects these fish by making sure that enough bull trout survive so they can spawn. Biologists are working with many other people like landowners and fishermen to protect bull trout habitat. By working together, we can make sure that bull trout always have the healthy habitats they need to survive.



Male Bull Trout



Juvenile Bull Trout



What is a fish?



When you hear the word fish, you probably picture a water animal with fins, scales, a long body and gills. You are not wrong. But fish are so much more! They are the largest group of vertebrate animals with over 32,000 species. This is more species than all the mammals, birds, reptiles and amphibians, combined!

Fish live in saltwater, freshwater and water that is a combination of both, called brackish water. They are adapted to cold water and warm water. Some species can even live near the hot water coming out of volcanic vents at the bottom of the ocean. Fish are also a very old kind of animal. Fish were living on Earth long before the dinosaurs. They have been here at least 450 million years!

Living in water has given fish many cool adaptations. Their scales protect their insides. Scales also give fish colors to hide or attract a mate. Fins help fish move in the water and stay upright in the water column. Different body shapes let different species of fish live in different kinds of water. For example, trout have slender bodies with pointed noses, kind of like a skinny football. Since trout live in faster water, this body shape causes the water to move around the trout. This helps it swim in fast currents. A sunfish has a body that is more like a pancake. They are adapted to living in

Photo: CC-BY Idaho Fish and Game

slower water where the current will not push them around.

Like you, fish need to breathe oxygen. But instead of having lungs, most fish use gills to breathe. Their gills are full of blood vessels. Oxygen from the water moves through the thin gill skin into the blood vessels. The blood cells move the oxygen around the fish's body just like your blood cells move oxygen throughout your body.

One kind of fish, however, has both gills and a lung. African lungfish are prehistoric fish that have remained unchanged for almost 400 million years! They breathe air above the surface of the water with a lung. They do this about every thirty minutes. The rest of the time, lungfish use their gills to breathe underwater. During Africa's dry season, however, water often dries up. Gills become useless. To survive, lungfish make burrows in the mud and become

inactive. Having a lung allows them to breathe in their burrow. When the rains come, the water returns. Lungfish leave their burrows and return to the water.

Most fish have skeletons made of bone. Some fishes, like sharks, skates and rays, have a skeleton made of cartilage. This is the material that supports your nose and ears. Cartilage is more flexible than bone. It is also lightweight. This means that cartilaginous (car-tuh-LAH-gin-us) fishes can swim faster than bony fish. Important parts of a cartilage skeleton have deposits of calcium salts. This makes the backbone, jaws, and areas around the brain stronger. Idaho has a famous cartilaginous fish, the white sturgeon.

Fish are an amazing group of animals. Idaho is lucky to have 83 different species living in its waters.





The Four C's

Bull trout and other members of the salmon family are very picky about their water. Any old water won't do for these fishes. Their water needs to be cold, clean, complex and connected. These four factors are often called the Four C's. Let's take a closer look at each one.

Cold water is exactly what you think. It's cold. Because much of Idaho's water comes from snowmelt, it is cold. But why is this important? Cold water holds more oxygen than warm water. This lets many kinds of animals live in that water. The food bull trout eat needs a lot of oxygen, so colder water supports many kinds of animals from aquatic insects to other fishes. If the water gets too warm, these important food animals will die. Bull trout and other fish will lose their food sources. Water stays cold when it is shaded by trees and other

plants growing along its banks. Streams and rivers with plenty of water flow also stay cold. Bull trout prefer water that does not get above 58 degrees. Brrrrrrrrr!

When we say clean, we mean water that is clear. You can see into it and the gravel on the bottom is clean and not covered with gunk. This gunk is called sediment. It is silt and soil that washes into a stream or river. When this happens, trout eggs get covered up. Oxygen cannot get into the eggs and the developing fish die. The aquatic insects that many fish, including young trout, eat also get covered up and die. Many aquatic animals cannot live in water that is full of sediment.

A complex stream or river is one that has pools, riffles, quiet water, beaver ponds, groundwater upwellings, submerged trees and large rocks, and undercut banks. These things give fish



places to hide, spawn, and look for food. Things like riffles let water rush and bubble over rocks. This movement helps bring oxygen into the water. Undercut banks make shade and provide cover for fish. The water flow is also slower in these areas, giving fish a place to get out of the current.

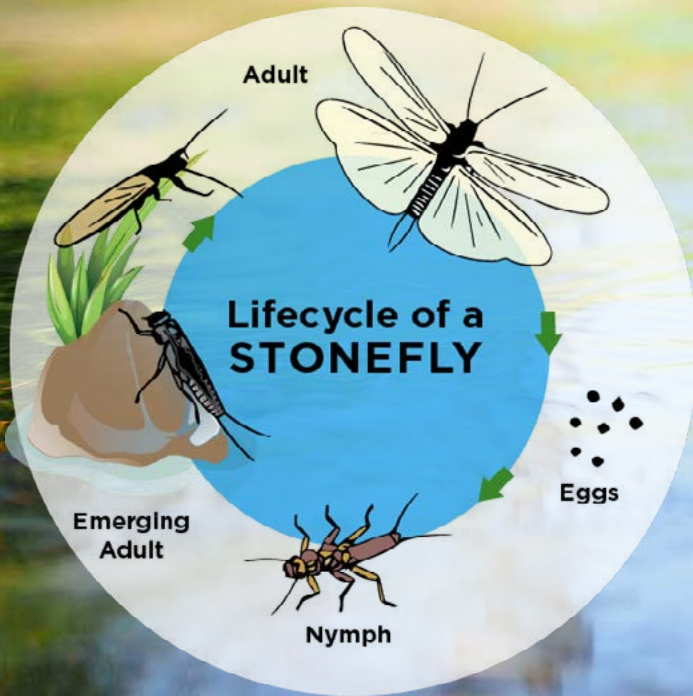
Connected waters are those that meet other streams, rivers or lakes. These connections allow migratory fish like some bull trout, to move from one place to another each year. They might leave the river where they spent the winter and swim into another stream to spawn later in the year. Then they make the trip back

for winter. The connection between a river and its floodplain is also important. A floodplain is land along a river or stream that can flood during high water. When a stream is connected to its floodplain, fast-moving high water in the spring has a place to go. It soaks into the ground, becoming more groundwater that can move back into the stream.

The Four C's are vital for our cold-water fishes. By paying attention to them, we help take care of our rivers and streams. This will make sure that we always have trout and many other aquatic animals to enjoy.



Aquatic Insects



Water Slider Photo: CC-BY tomokazu higashida at Flickr Creative Commons

When you look into the water, what kinds of animals do you think of? How about insects? As it turns out, a wide variety of insects begin their lives in the water. They are called aquatic macroinvertebrates or macros for short. These include familiar insects like dragonflies, mayflies, mosquitoes, water striders, stoneflies, and many more.

The adults of these insects lay their eggs on or in the water. The eggs hatch into a larvae or a nymph that lives in the water before becoming an adult. Like all aquatic animals, these insects have many adaptations to help them survive. Gills help them breathe underwater.



Strong legs help them swim and hooked feet help them hold on to rocks in fast water. Their hard exoskeleton protects them from bumps and predators. Some macros have unique adaptations. A few species have a tube like a snorkel for breathing above the water surface.

Some aquatic beetles capture air bubbles and pull them underwater. They breathe the air in the bubble. When it runs out, the beetle surfaces and grabs another bubble. Other insects shoot jets of water out of their abdomen to get around. Not bad for a bunch of bugs!

When aquatic insects become adults, they hatch off the water looking very different from their aquatic forms. The difference between a dragonfly nymph and an

adult is amazing! Often, the adult forms of the insects have a short lifespan. Some of them live only 24 hours after hatching into their adult form. They mate, lay eggs and die.

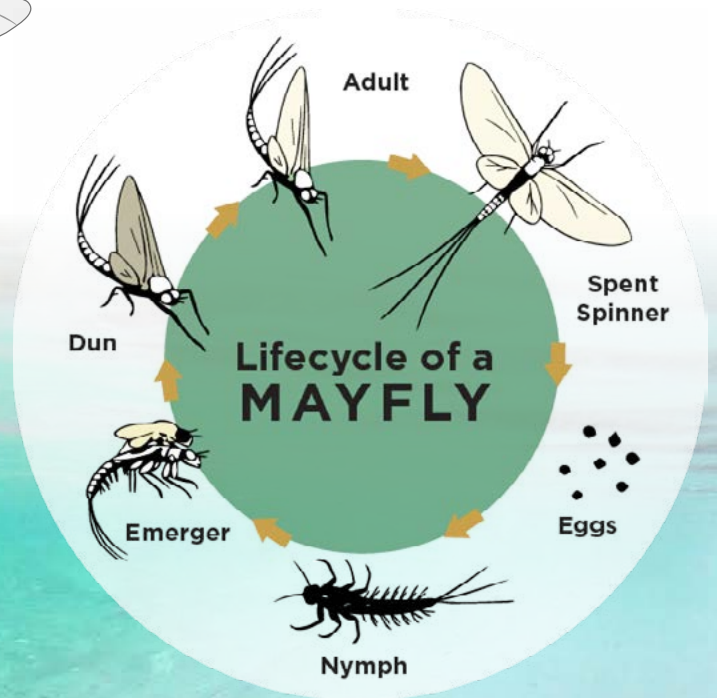
As both aquatic larvae and adults, these insects are an incredibly important food source for fish and other animals like birds and bats. They are parts of many food webs and can even help people. Think about mosquitoes. These pesky insects are an important food for bats.

The bats help control mosquito populations, helping prevent the spread of mosquito-borne diseases that can infect our livestock and us. Aquatic macroinvertebrates are also important indicators of water quality. Scientists survey water bodies for these insects. Their presence or absence can tell the scientists if the water is healthy or unhealthy.

Learning about these insects can even help you become a better fisherman. By paying attention to the insects around you, you will know what the fish might be eating. This will help you choose the right thing to put on the end of your fishing line to tempt a hungry fish!



Adult dragonfly and dragonfly nymph



dragonfly Illustrations: CC-BY Vecteezy.com, Mayfly Illustration: CC-BY NJ at Idaho Fish and Game, Photo: CC-BY USFWS at Flickr Creative Commons



Bull Trout Lifestyles



Photo: CC-BY G. L. Briton at Flickr Creative Commons

Bull trout are cool fish for many reasons, including where they live. You can find bull trout in most of Idaho. Because they live in so many places, they have had to adapt to different waters. To do this, bull trout have four different life history strategies. These are kind of like four unique lifestyles all found in the same species of fish.

Overall, bull trout can be said to be resident or migratory. As you might guess, a resident fish pretty much stays in the same headwater stream its whole life. It is born, grows up and spawns in this stream. These bull trout do not

grow as large as those with other lifestyles. A spawning resident bull trout might only be 12 inches long. The streams provide them with exactly what they need to survive even if they do not grow to be large.

Some bull trout live in larger rivers or streams. Like other bull trout lifestyles, these fish are born in smaller streams. However, they migrate to a larger river to grow up. When it comes time to spawn, they migrate back to the small headwater streams. This is called a fluvial (floo-VEE-al) bull trout. The larger water body provides plenty of food and shelter. A smaller



Photo: CC-BY Idaho Fish and Game

stream has the gravels needed to protect developing bull trout eggs. That small stream also has many aquatic insects for baby bull trout to eat.

Other bull trout live in lakes. They are born in headwater streams, then migrate to a lake. When it is time to spawn, the bull trout swims back to the same headwaters stream to lay its eggs. This lifestyle is called adfluvial (add-floo-VEE-al). Some of Idaho's largest bull trout are adfluvial. In fact, the state record bull trout was caught in Lake Pend Orielle. It weighed 32 pounds! Adfluvial bull trout can get this large because lakes provide plenty of small fish to eat.

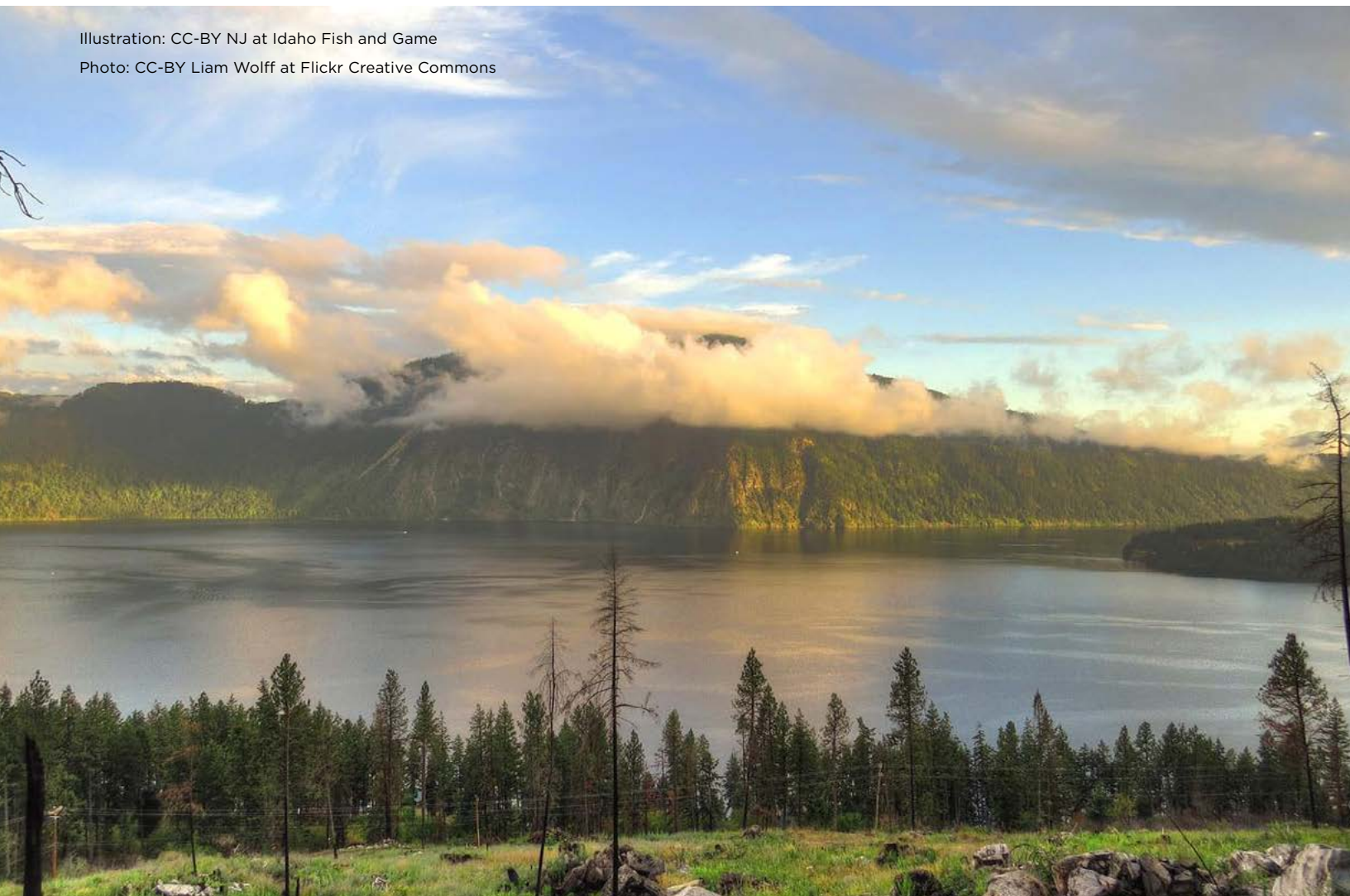


The final bull trout lifestyle is the rarest. Idaho's bull trout do not live this lifestyle. These are anadromous bull trout. Like their relatives the salmon, anadromous bull trout are born in freshwater. They then travel to the ocean to grow, migrating back to freshwater when it's time to spawn.

Fluvial, adfluvial and anadromous bull trout are all migratory. They travel to and from specific places during their lives. Some might travel only a few miles. Others travel hundreds of miles moving from larger waters to smaller ones to spawn. Our migratory bull trout live alongside resident bull trout in many of Idaho's waters. It's pretty cool that our state's small headwater streams, large wild rivers, and lakes provide bull trout with the perfect places to live.

Illustration: CC-BY NJ at Idaho Fish and Game

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Family Fishing Waters



It's summer! No school and warm summer days stretch out before you. What will you do this summer? For a lot of families, fishing is a favorite summertime activity. Hanging out near the water, waiting for a fish to bite and the chance for a yummy fish dinner---what's not to like?

If you and your family are new to fishing, Fish and Game offers opportunities for you to learn. The Take Me Fishing Trailer is perfect for beginners. Stocked with equipment you can borrow and staffed by experts, a trailer event is a great way to get started in fishing. These events are held at ponds around the state. They are free, and no one needs a fishing license to participate. To find a fishing trailer event near you, check out the trailer schedule at

<https://idfg.idaho.gov/fish/trailers>

So, you have attended a Take Me Fishing Trailer event and are excited to fish on your own.

Photo: CC-BY Idaho Fish and Game

Where do you go? Your next step is to check out the many Family Fishing Waters around Idaho. Each region of the state has a list of family-friendly waters for fishing. These ponds and lakes are easy to find, close to home, and are filled with fish just waiting to be caught. Okay, maybe it's not quite that easy, but many of these waters are stocked with catchable rainbow trout. Restroom facilities, picnic tables and easy access to the water make Family Fishing Waters a great place for a family fishing trip. Check out all the Family Fishing Waters at

<https://idfg.idaho.gov/fish/family-fishing-waters>

Make sure to check the fishing regulations before you head out. If you are under 14 years of age, you will not need a fishing license. Family Fishing Waters have rules, but they are simple. That said, it is always important to know the rules for any water you want to fish. Knowing the rules helps you do the right thing, and it protects the fish. Have a wonderful summer of fishing fun!

Add some fun color!

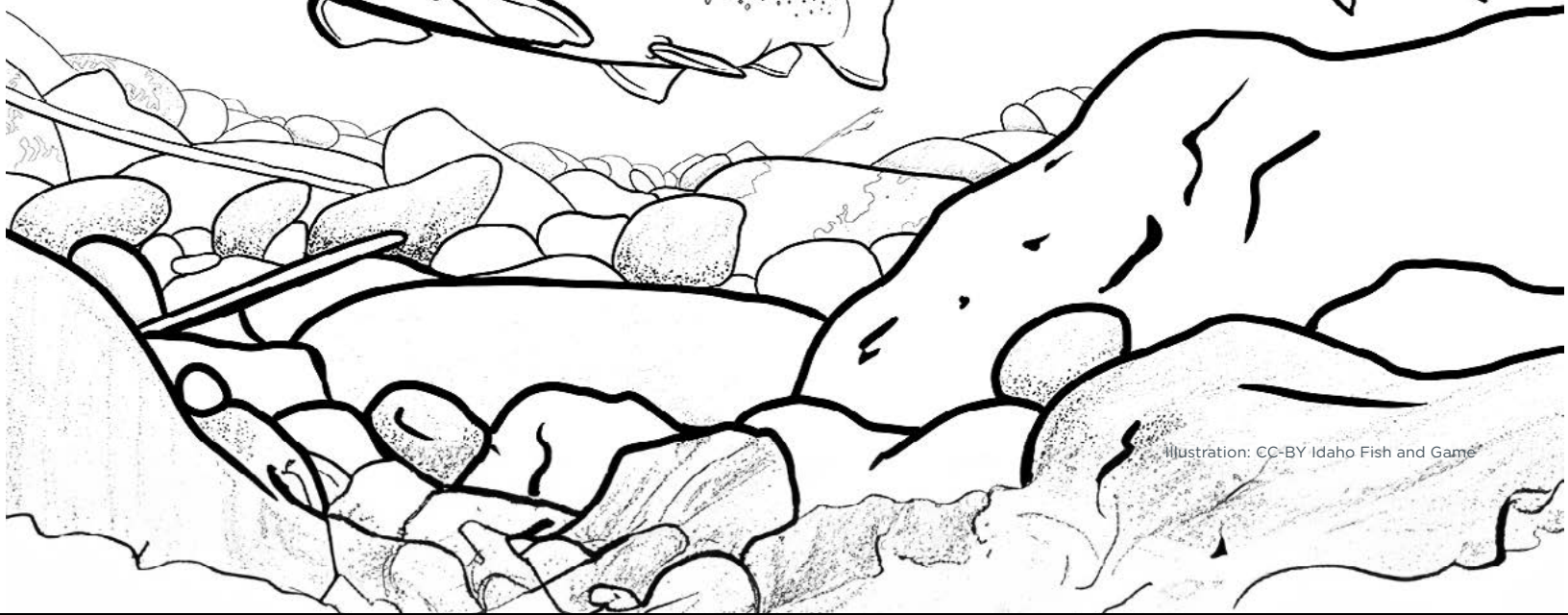
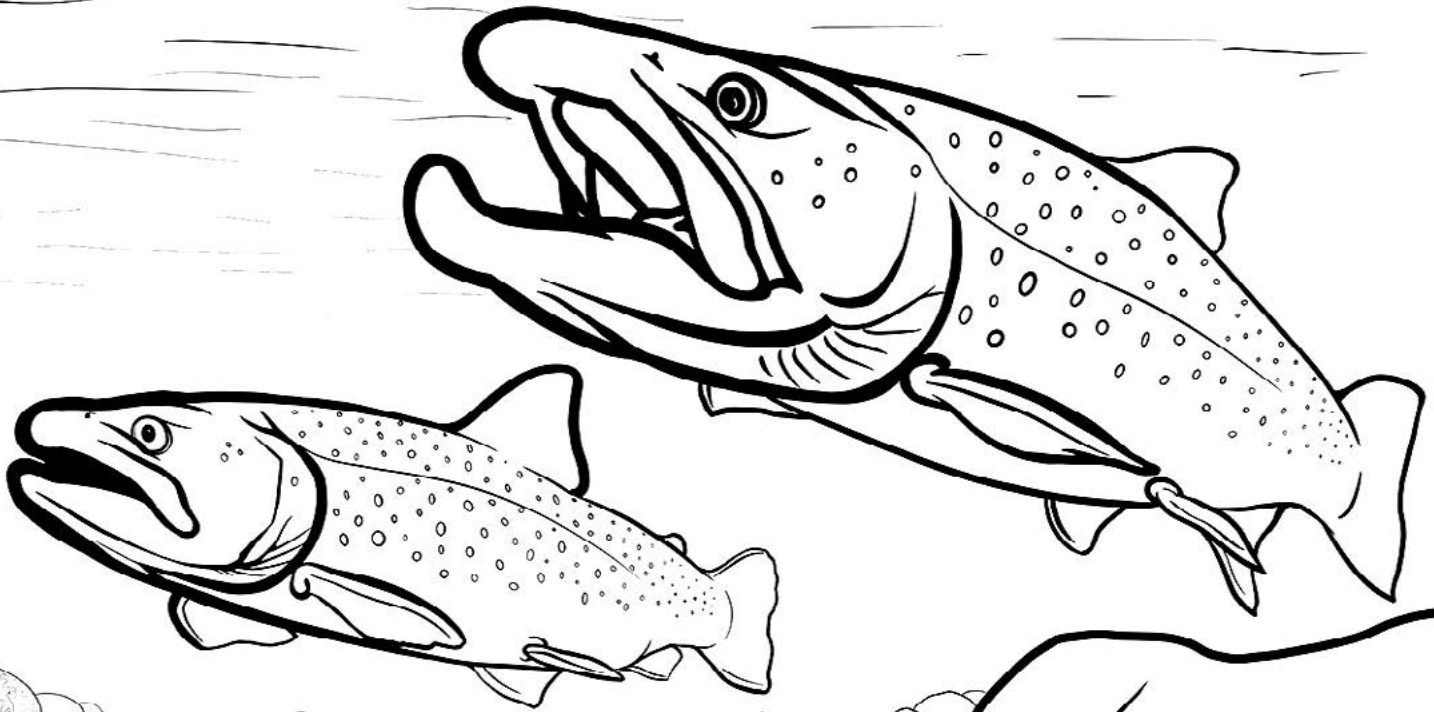


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Volume 37 • Issue 10

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June 2024

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WE WOULD LIKE TO HEAR FROM YOU!

If you have a letter, poem or question for Wildlife Express, it may be included in a future issue!

Send it to: victoria.runnoe@idfg.idaho.gov

or

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