Fishes of Idaho

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Chapter 1: Trout

There are many different types of trout. In Idaho, rainbow trout, cutthroat trout, steelhead, and bull trout are native. Their average lengths can be anywhere from 8 to 38 inches depending on type and lifestyle. Many are resident trout and live in cool, clear, freshwater streams and lakes that range from 50-60 degrees Fahrenheit. Rainbow trout and steelhead are the exact same fish, however steelhead are much larger and have become **anadromous**.

Cutthroat Trout

Timothy Knepp U.S. Fish and Wildlife Services

Trout feed on a variety of things. Their diets consist of smaller fish and insects. These include flies, mayflies, caddis flies, stoneflies, and dragonflies. Larger trout may also feed on shrimp, worms, and even eel! The fish's diets vary with location, time of year, and water temperature. Some fishermen will carry thermometers with them to be able to determine the exact food that will attract the most fish.

Types of Trout

There are three major groups of trout called **generas**. Two of these groups are native to Idaho, while the third is invasive. The main differences between the groups are where they originated. This creates differences in when the fish **spawn** and slight differences in habitat.

Rainbow Trout

Timothy Knepp U.S. Fish and Wildlife Services

Oncorhynchus is a group of fish species that includes Rainbow trout, Steelhead, Cutthroat trout, and some forms of salmon. The *Oncorhynchus* group is native to Idaho. This genus of fish spawns in the spring.

Salvelinus is the second genus that includes fish that are native to Idaho. The bull trout is in this genus. Not all trout in the genus are native to Idaho. The brook trout and lake trout are both in this genus and both in Idaho but are not

native to the state. The fish that make up this group spawn in the fall.

Although there are trout from the genus *Salmo* in Idaho they are not native to the region. The only *Salmo* in Idaho is the brown trout. *Salmo* are not native to North America at all. Europeans introduced any members of this genus found in North America.

Chapter 2: Sturgeon

Sturgeon is a special fish because of their lifespan. They have an average life span of 50-60 years. At the Bonneville Fish Hatchery in Oregon there is a sturgeon named Herman that is 70 years old. Although they are smaller in Idaho, sturgeon can grow to 18 feet and weigh more than 4,000 pounds!

74 Lb Sturgeon

Mark Luehring and Josh Schlosser
US Fish and Wildlife Services

Although they are in the category of bony fishes, their skeleton is composed of mainly **cartilage.** Sturgeon also have boney plates called scutes instead of scales like many other fish do.

Sturgeon have a way of looking for food that is much different than that of other fish. Sturgeon look for food using four **barbels.** The barbels help the fish to taste their food when they are swimming near the murky bottom of a stream where they cannot see. They drag the barbels across the bottom of the stream then snatch their food up when they taste it is there.

In this photo shows the barbels of a sturgeon. We can see that they are in front of the mouth to sense food before it goes in.

U.S. Army Corps of Engineers

Sturgeon are not unique to Idaho. They can live in a very wide range of habitats all over the northern hemisphere. Just a few places they have been found are all over the U.S, in the oceans outside of Italy, in rivers in china, and in the Gulf of Mexico.

Chapter 3: Salmon

Sockeye, chinook, and kokanee salmon are all native to Idaho. There are many differences between the different types of salmon. Both sockeye and chinook salmon are anadromous while kokanee are not.

Chinook used to live in drainages throughout Idaho, but because of damming on the Snake and Columbia rivers many fish can no longer make it this far. There are many **hatcheries** in the state that are stocking Salmon in the state in the hopes that they will return to spawn. In the last 5 years there have been increases in chinook running up the Snake and Salmon rivers in Idaho. In Idaho, chinook can get up to around 45 pounds and from 18-40 inches in length.
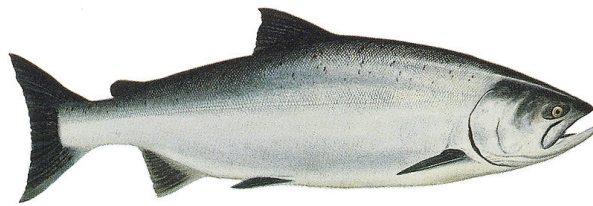
Chinook Salmon

U.S. Government

Sockeye salmon are in a very similar situation. In the late 1980s only one sockeye made it all the way to the spawning location of Red Fish Lake. There are huge hatcheries that are dedicated to the restoration of sockeye to the waterways of Idaho. Sadly, only small amounts of the fish return to spawn.
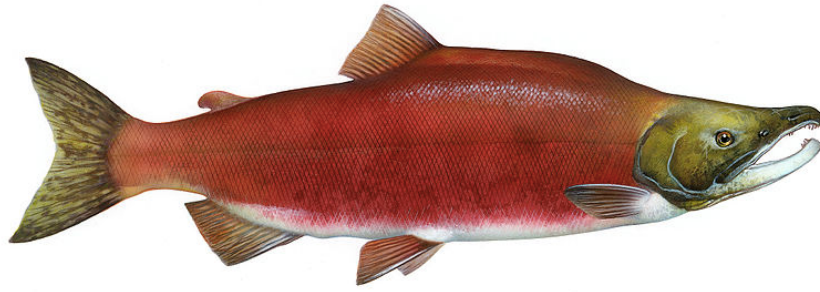
Sockeye Salmon Timothy Knepp U.S. Fish and Wildlife Services.

Kokanee salmon are a resident fish in Idaho and live in the deep lakes around the state. They are also known as

"Bluebacks" or "Silvers" because of their blue and green backs and silver bellies. In Idaho, they are about 10-12 inches and between a pound and a pound and a half when full grown. Between September and December, Kokanee move from lakes into the rivers to spawn. The females will use their tales to make a **redd** on the shore of the river. Salmon make their redds by using their talks to brush the larger rocks out of the way. They lay their eggs in the redd.

California Department of Fish and Wildlife
Lamprey sketch by Ellen Edmonson and Hugh Crisp for a New York study by the Conservation Department.

Chapter 4: Lamprey

Lamprey are interesting because they do not have jaws. Their mouth is a circle that is located at the front bottom of their faces. Their mouths are full of lots of teeth. Unlike the other fish in this book, lamprey feed by acting as a parasite. They will attach to larger fish and suck their blood. In some places they are referred to as the vampires of the deep. Lamprey are among the oldest organisms on Earth and existed many years before dinosaurs did. Scientists can date them back to around 300 million years. We know this because lamprey developed before jaws had evolved.

The inside of a lamprey's mouth is filled with lots of sharp teeth. The lamprey has a circular mouth and does not have a jaw.

T. Lawrence
The Great Lakes Fisheries Commission

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Lamprey are anadromous and **catadromous**. The pacific varieties of lamprey are anadromous. When lamprey are migrating inland they use their suckers to climb up dam walls. They will suck onto the wall, throw their bodies upward, and jump a few inches upward, sucking onto the wall again. Lamprey also use their suckers when creating their redds. Instead of brushing the rocks out of the way, they use their suckers to grab onto the rocks and move them away.

Lamprey attached to a lake trout to feed.

U.S. Geological Survey

In places like Idaho, lamprey are native and help to balance the environment. This is not the case everywhere they live. In the 1950s, lamprey used the boat passageways to make it to the Great Lakes. For the past 60 years, the government has been working to remove the lamprey from the lakes because they are killing all of the fish that are native to the environment.

Chapter 5: Burbot

Burbot are among the stranger fish that inhabit Idaho's waters. In Idaho, burbot are only native in the Kootenai River. They are the only fresh water version of the cod family. Burbot are identified by their one corkscrewing barbell, which sticks out of the middle of their chins. They look like a cross between a catfish and an eel.

When they are younger they eat mostly plankton, and when they are adults they eat insects and other fish. Burbot metamorphoses when they are newly hatched, completely changing their shape, which is similar to a butterfly. Burbot require almost a month of frigidly cold water, sitting at 33 degrees Fahrenheit, to spawn. They are the only fish that spawn in the dead of winter under the ice. A female burbot at spawn can lay almost 4 million eggs. In the summer they can stand temperatures up to 82 degrees Fahrenheit.

Burbot Virgil Beck for the Wisconsin Department of Natural Resources

Chapter 6: Non Native and Invasive Fishes

What is the difference between non-native and invasive fishes?

The largemouth bass is not native to Idaho. It was brought in as a fish for fisherman to catch.

Timothy Knepp
U.S. Fish and Wildlife Services

Both invasive and non-native fish are living in environments where they did not originally develop or evolve. If a fish is not native to an environment it can still thrive there without having an effect on the environment and the animals living there. An invasive fish is a non-native fish that has an effect on the environment and the other animals that live there. Invasiveness can occur for many different reasons. Sometimes the new species will eat the fish that already live there or they will eat the same food and not leave enough for the other species to survive. Other times they are not a food source for the natural predators of an

environment and they are allowed to reproduce without anything to slow them down.

What are the effects of invasive fishes?

Lake trout search the depths of Yellowstone Lake in search of food.

*Timothy Knepp
U.S. Fish and Wildlife Services*

Invasive species can be very detrimental to environments where they do not belong. A lamprey, for example, is not detrimental to the river drainages or oceans where they are native. On the other hand, when the sea lamprey made it to the Great Lakes, they nearly killed all of the native fish. In this case, lampreys became invasive by killing the fish that were already there. Invasive fish can effect more than just fish populations and environments. The Great Lakes is a large area for commercial and recreational fishing. When the lampreys began to kill all of the fish there became too few fish for all of the catching that was needed. The economy of the area struggled because there were not enough fish for the companies to sell.

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An example that is closer to home is that of Yellowstone Lake. The fish that are native to Yellowstone Lake are the Cutthroat Trout. At some point, no one is quite sure how, Lake Trout were introduced into the lake. The Lake Trout eat the young Cutthroat Trout and have led to decreases in the population of Cutthroat Trout in the lake. If the Lake Trout continue to survive in Yellowstone, the Cutthroat population could fall to 10% of what it was historically.

Invasive Fishes in Idaho

Even though smallmouth and largemouth bass are closely related, they live in completely different environments.

Timothy Knepp
U.S. Fish and Wildlife Services.

Many of the non-native fish living in Idaho are here because they are game fish. A game fish is a fish that fishermen like to catch, but it is often a challenge to do so. Bass, Pike, and Walleye are all game fish that have been introduced to Idaho over the years. People also like these fish, particularly Pike and Walleye, because they taste good.

Both largemouth and smallmouth bass are found in Idaho. Bass are a **piscivorous** fish, which means they feed on smaller fish. Largemouth like to live in warm, grassy lakes, while smallmouth prefer rocky habitats. Largemouth and smallmouth bass are native in the Mississippi drainage area. Bass have been introduced around the world as game fish and have caused a lot of damage to natural habitats. There are a few fish species scattered around the globe that went extinct after bass were introduced.

Brown Trout

Timothy Knepp
U.S. Fish and
Wildlife Services

The fish we have talked about so far do not have cousins that are native to Idaho. The brown trout and lake trout might seem native to Idaho because many trout are native. Both of these species are in fact non-native and can be detrimental to the native populations. Brown trout are not native to North America at all, but are only native in Europe. Neither species of trout is terribly detrimental to the environment in Idaho, but any time a fish is not native they will have some effect on the native populations.

Glossary

Fishes: The plural term for fish when referring to more than one species of fish.

Anadromous: Fish that are born in freshwater but grow up in the ocean and come back to fresh water to spawn.

Spawn: To lay and fertilize eggs, to create large amounts of young.

Cartilage: Connective tissue that is softer than bone, but harder and stiffer than muscle. It is found in humans in joints and between bones.

Barbels: A sensory whisker that is in front of the mouth and houses the taste buds of the fish.

Hatchery: A place where fish are born and live the first few years of life before being released into the wild.

Redd: A nest made of small rocks for fish to lay their eggs in.

Catadromous: When fish live in rivers and spawn in the oceans. The fish are born in the ocean and return to freshwater to grow up.

Genus (Genera): A group of species of living things where every species share common ancestry and characteristics.

Piscivorous: A diet consisting of mainly fish

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Print Resources

Common Core State Standards

CCSS.ELA-LITERACY.RI.4.3

Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

CCSS.ELA-LITERACY.RI.4.8

Explain how an author uses reasons and evidence to support particular points in a text.

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