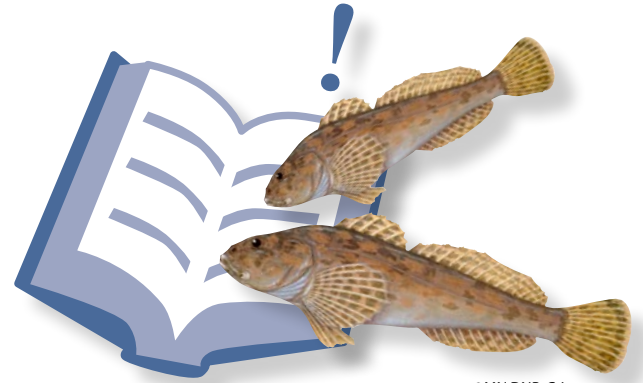


Minnesota Fun Fish Facts



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For more fun facts see the Nature Snapshots area of the Minnesota DNR website.

Fish Are Fascinating!

- All fish are craniates, with skulls of bone or cartilage.
- All fish are vertebrates (meaning that they have backbones) and breathe through gills.
- Most fish have fins and scales.
- Usually, fish are cold blooded, but several saltwater species, including some tuna and sharks, maintain elevated body temperatures that are substantially higher than surrounding waters.
- There are more than 27,000 living species of fish worldwide. Approximately 20,000 of these are bony fish.
- Fish are the largest population of vertebrates. There are more fish than all mammals, reptiles, amphibians, and birds combined. Although fish species are numerous, several groups of invertebrates far outnumber fishes. Nematodes, or roundworms, are the most abundant, with as many as one million estimated species. Approximately 20,000 species of nematodes have been described. One million insect species have been identified, so they, too, outnumber fishes. There are approximately 55,000 species of crustaceans, including lobsters, crabs, shrimps, and barnacles.
- A group of fish is called a school.
- Most fish lack eyelids—although some saltwater sharks have a nictitating membrane that acts as an eyelid.
- It's not always easy to tell the difference between a male fish and a female fish. In some species, males and females have different shapes or coloring; in other species there is no outwardly visible difference.
- Fish skin has glands that secrete mucous that gives fish their sliminess and odor. Mucous covers wounds to prevent infection, and protects fish from bacterial infections from fungus, mold, and other parasites. The slime covering also makes it easier for fish to slide through water and keeps scales lubricated.
- The muscle mass of most fish is segmented into zig-zaged shapes called myotomes. These muscle segments help fish move through the water. When you eat a fish, the meat is the muscle that folds or peels off in layers.
- The streamlined shape of a fish's body enables it to easily cut through water as it swims.
- An esophagus, the tube between the mouth and stomach, is flexible. A fish esophagus usually can handle anything that fits into the fish's mouth. It can even adjust mid-swallow—just in

case the fish eats something that happens to be considerably larger than itself.

- A fish's food slides through the esophagus into the stomach. From the stomach, food moves to the intestines where digestion continues. Fish intestines are lined with mucous that moves digesting food, and aids in the absorption of protein. The kidney, liver, and gall bladder contribute enzymes and acids that further process the food. After needed protein, fat, and carbohydrates have been extracted from the food and absorbed, the waste passes through the fish's vent, or anus.
- In order to be buoyant, and to expend as little energy as possible, most fish have an air (or gas) bladder to regulate buoyancy in the water. The air bladder inflates and deflates to keep the fish from sinking like a stone or bobbing to the surface. Adjusting the volume of gas in the air bladder brings the fish's overall density close to the density of the surrounding water. This gives the fish the ability to hover at a particular level in the water. Hagfish, lampreys, sharks, rays, and chimeras don't have gas bladders. There are also several species of ray-finned fishes that don't have gas bladders, including some Minnesota species.
- A fish's brain is located at the end of the vertebral column that runs through its body. The spinal cord inside the column transmits messages from various parts of the body to the brain and vice versa. The sections of the brain are the forebrain, 'tween brain, midbrain, and hindbrain, all of which are protected by a skull.
- Fish breathe by taking water in through their mouths and pushing it over the surface of their gills. The gills are protected by structures called gill rakers.
- The fish's inner ear includes an ear stone (otolith). Sound signals are transmitted to the brain after the sound registers in the ear stone. Otoliths grow each year, adding rings similar to the growth rings of a tree. Fish biologists examine the annual rings of the otolith to determine the ages of some types of fish. Ray-finned fishes have three otoliths and lobe-finned fishes have two. Paddlefish and sturgeon (like sharks, rays, and chimeras) don't have otoliths.
- Fish scales are laid down in rings each year (like tree rings) and can be used to age fish.

Minnesota Fish Family Trivia

In 2006, Minnesota was home to 160 species of fishes, 141 of them native. The number of species increases as new non-native species inextricably establish themselves in Minnesota waters. There are 26 families of Minnesota fishes. Here are some facts about some familiar fish families as well as some of the unusual fish families that live in Minnesota.

The Bowfin Family (Amiidae)



- Bowfin are the last surviving members of a formerly large family of fish—the rest exist only as fossilized remains.
- The name refers to the long, undulating dorsal fin along the back of these fish.
- Bowfin come to the surface every few minutes to breathe air, using their swim bladder like a lung. They also use gills to breathe in water. They can survive out of water for a considerable length of time. A farmer once found a live bowfin in moist soil while plowing a field that had been flooded a few weeks earlier.
- The male bowfin turns dark green while spawning and guarding its young.
- In recent years, aquaculturists have shown interest in harvesting bowfin eggs for caviar.
- Bowfin are also known as dogfish.

The Catfish Family (Ictaluridae)



Catfish exist throughout the world, but the Ictaluridae family lives only in North America. There are nine catfish species in Minnesota: three catfish species, three types of bullheads, and three smaller fish species. All members of this family have whisker-like barbels around their mouths and an adipose fin on their back between the dorsal and

tail fins. Catfish bodies are covered with taste buds instead of scales. These many taste buds—and the barbels—help catfish locate food.

Catfish

- The two large species of catfish commonly found in Minnesota are channel catfish and flathead catfish.
- Catfish barbels aren't "stingers" and won't sting you. They're an organ that senses taste, touch, and smell. But these fish do have sharp spines with poison glands—one in the leading edge of their top (dorsal) and one in each of their side (pectoral) fins. If you're not careful when handling these fish, you can poke your hand on these spines.

Bullheads

- Minnesota has three species of bullheads: brown, black, and yellow.
- Bullheads have as many as 100,000 taste buds scattered over their bodies. Many taste buds are also found on their barbels. Scientists think that well-developed sensory abilities help bullheads find food in muddy, dark water.
- Black bullheads are extremely hardy and do well in aquaria, so they're often used in scientific studies.

The Codfish or Cuskfish Family (Lotidae)



Burbot

- Most codfishes live in oceans. The only freshwater species in this family is the burbot.
- In Minnesota, burbot are commonly known as eelpout. Eelpout is the name of a family of saltwater fishes (Zoarcidae), but burbot are called eelpout simply because they resemble these fishes. Their Latin name, *Lota lota*, comes from the French word for codfish. It's possible that the word burbot is derived from *bourbe*, a French word meaning mud from a pond or lake.
- Burbot have a single barbel located under the chin.
- Burbot are the first fish to spawn each year. They

spawn in the middle of winter. They're the only fish in Minnesota to spawn under the ice.

- In early February, an annual International Eelpout Festival on Leech Lake includes a black-tie dinner on the lake, ice bowling, and a fishing tournament. The angler who catches the biggest burbot wins a seven-foot-tall trophy.

The Drum Family (Sciaenidae)



The freshwater drum is the only species of the large family of drum fishes that lives in Minnesota—and it's the only freshwater member of the drum family.

Freshwater Drum

- Freshwater drum are also known as sheepshead or croakers. It's the only freshwater fish with a lateral line that extends all the way to the end of its tail fin.
- Members of the freshwater drum family can produce audible sounds. Male drum make a deep, rumbling sound during spring breeding season by rubbing tendons against their swim bladders. They're the noisiest fish in Minnesota!
- Native Americans used the drum's otoliths, or ear bones, to make jewelry. These otoliths are notably larger than those of most other species.

The Gar Family (Lepisosteidae)



The long, narrow, bony snouts of members of this fish family are filled with many sharp teeth. Longnosed and shortnosed garfish exist in Minnesota; the entire family has seven species.

Longnose and Shortnose Garfish

- *Gar* is an old Anglo Saxon word meaning spear—in reference to the pointed snout of this fish.
- A gar has tough, armor-like scales that can flatten a bullet.
- In addition to breathing through gills, gar can take in oxygen by swimming to the surface and gulping air into their swim bladders. This ability to “breathe” surface air allows them to survive in water that has very little dissolved oxygen. They can even live out of water for many hours, as long as their bodies stay moist.
- Garfish eggs are poisonous to terrestrial wildlife.

The Minnow Family (Cyprinidae)



With 45 species—41 of them native—existing in the state, the minnow family is Minnesota’s largest fish family. Minnows aren’t necessarily small, and small fish aren’t necessarily minnows.

Minnows

- Minnows are a very important link in the aquatic food chain because they’re a food source for many larger fish species.
- Many small minnow species are economically important to the state’s bait industry.
- Some of the more common commercial minnow species include: fathead (crappie) minnows, finescale dace (rainbow chubs), hornyhead (red tail) chubs, northern redbelly dace (jumpers), and golden shiners.

Carp

- Carp are the largest members of the minnow family in Minnesota waters.
- Carp are the strongest swimmers of Minnesota’s warm water species.
- Carp are invasive (non-native) species in Minnesota.

The Pike Family (Esocidae)



Pike are important top predators in aquatic ecosystems, and they help balance populations of smaller fish.

Muskellunge

- Muskellunge, also known as muskies, are the largest members of the Pike family.
- It takes five to seven pounds of live fish to produce one pound of muskie.
- Adult muskies can eat fish as large as one-third their own length. Younger muskies can eat fish almost as large as themselves.

Northern Pike

- The northern pike is one of the world’s most widely distributed species of freshwater fish.
- It’s one of the fastest-growing freshwater fish.

Tiger Muskie

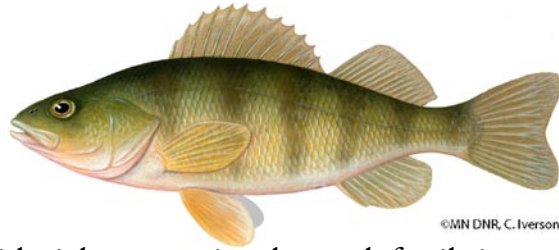
- This fish is a sterile hybrid cross of a muskellunge and a northern pike.

The Paddlefish Family (Polyodontidae)



- There are two species of paddlefish in the world, one in China and the other in North America. It’s a fish of ancient origin, with a skeleton made of cartilage. Due to their long, canoe paddle-shaped snouts, they’re sometimes called spoonbills.
- The snout of a paddlefish is covered in sensory organs that could be responsible for helping it find food.
- Although they’re large fish, they grow slowly and eat tiny plants and animals called plankton.
- Paddlefish are quite sensitive to pollution and their numbers have greatly declined. They’re a protected species in Minnesota.

The Perch Family (Percidae)



With eighteen species, the perch family is Minnesota's second largest fish family, which includes perch, walleye, sauger, and darters. Darters live only in North America—and fifteen species of these tiny fishes live in Minnesota.

Yellow Perch

- Like bluegills and other sunfish, yellow perch are considered panfish.
- They have several dark, vertical tiger stripes on their yellowish bodies.
- Yellow perch are a favored prey of walleye.

Walleye

- Although sometimes referred to as a walleye pike, it's not a member of the pike family.
- In 1965, the state legislature designated the walleye as Minnesota's state fish.
- Walleye refers to this fish's large, milky pupils. The inner part of the eye reflects light, allowing the fish to see in dark or murky water. This reflective membrane is called the tapetum lucidum, or bright carpet.
- Studies have shown that walleye live as long as 29 years in some waters.
- Minnesota's walleye stocking program is the largest in North America.
- A female walleye produces 40,000 to 250,000 eggs per season, depending on her size and condition.

Least Darter

- The least darter is the smallest fish in Minnesota. Actually, at one to one and one-half inches long, it's the smallest vertebrate animal in North America.

The Salmon Family (Salmonidae)



This family includes salmon, trout, whitefish, cisco, grayling, and char species. Like the catfish family, all fish in this family have an adipose fin on their backs between their dorsal and tail fins. Salmonids are cold-water fishes—they typically occupy waters colder than 72° F.

Trout

- Lake trout and brook trout are native to Minnesota.
- The Minnesota DNR stocks splake, a cross between male brook trout and female lake trout.
- Back in Minnesota's lumberjack days, logging outfits used to transport brook trout in milk cans and stock them in north woods streams. The fish then provided meals for loggers.
- Minnesota designates 3,700 miles of streams as trout habitat.
- Is the steelhead a salmon or a trout? This popular Lake Superior sport fish is actually a rainbow trout. The name refers to its steel-grey head. The steelhead migrates to sea as a juvenile and returns to fresh water to spawn as an adult.

Salmon

- Three species of Pacific salmon have been introduced to Lake Superior in the past few decades. All feed in the lake until they reach sexual maturity. In fall, they swim up rivers to spawn. They then die. The Chinook, or king salmon, is the largest and has best fared in its new environment.

The Sturgeon Family (Acipenseridae)



Like the paddlefish, a sturgeon has a skeleton made largely of cartilage. There are two species of sturgeon in Minnesota: lake sturgeon and the smaller shovelnose sturgeon. A sturgeon's body is covered with large overlapping plates called scutes.

Lake Sturgeon

- Lake sturgeon are the largest fish in Minnesota.
- At the end of the 1800s, lake sturgeon eggs (caviar) were in high demand.
- Sturgeon grow slowly, but they live a long time, typically more than 100 years.
- Female lake sturgeon don't spawn until they're approximately 20 to 25 years old—and then just once every several years.
- Among Great Lakes Indians, the lake sturgeon was the most respected of all fish. The Ojibwe referred to it as Nahmay or Namé, meaning the king of fish.

Sucker Family (Catostomidae)



There are seventeen species of suckers in Minnesota.

Buffalo

- The bigmouth buffalo is Minnesota's largest member of the sucker family.
- Unlike other members of this family, the bigmouth buffalo has a mouth at the front of its face. It looks like a carp without barbels.
- One nickname for a bigmouth buffalo is baldpate—this fish has a large, bare head.

Blue Sucker

- The blue sucker is one of Minnesota's rarest fishes. A sensitive fish species that can be an indicator of water quality, it can't live in impaired waters.

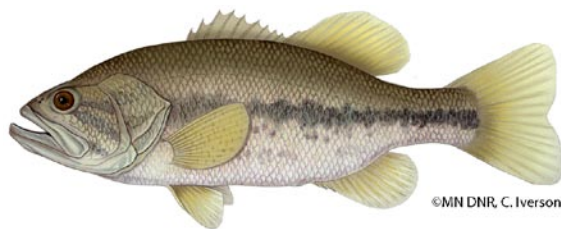
Redhorse

- Minnesota has six of these species. Underneath their heads, they have mouths with thick soft lips. Even though each redhorse species has distinctively shaped lips that aid identification, they can be extremely difficult to tell apart.

White Sucker

- This is one of most common, numerous types of fish in Minnesota.
- White suckers are an important prey species for many other fish, including walleye and northern pike.
- White suckers are a popular commercial baitfish and are grown in ponds.

The Sunfish Family (Centrarchidae)



There are eleven species of sunfish in Minnesota, including the bluegill, pumpkinseed, crappies, largemouth bass, and smallmouth bass.

Bluegill

- Bluegill spawning beds, six to twelve inches in diameter, are found in shallow water. In some spots, as many as 50 beds may be clustered together. Spawning bluegills aggressively protect their spawning beds, attacking anything (even a hook) that comes near them. This makes them easy to catch during the spring.
- Members of this family are also referred to as panfish.
- Bluegill are the fish most often caught by Minnesota anglers. They're usually the first catch of beginning anglers.

Largemouth Bass

- This fish is a popular sport fish because it aggressively attacks lures and leaps out of the water when hooked.
- It takes about four pounds of food to produce every pound of largemouth bass.

Smallmouth Bass

- For its size, the smallmouth bass may be the hardest-fighting fish swimming in Minnesota's many waterways.
- Many of these fish have red eyes.

Crappie

- Minnesota is home to both white and black crappies—black crappies are more common.

Minnesota's Reputation for Good Fishing

As many as two million anglers wet their lines in Minnesota each year. Approximately 29 percent of Minnesota residents fish. As many as 1,500,000 fishing licenses are sold each year.

Approximately 49,700 Minnesota jobs are related to fishing, providing an economic benefit of 1.3 to 2.8 billion dollars annually.

In Minnesota, anglers spend 50 million dollars on bait annually.

More than 100 million pounds of fish are harvested from Minnesota waters each year—walleye: 35 million pounds, northern pike: 3.2 million pounds, and panfish: 64 million pounds.

Species most often caught, in order of prevalence, include: panfish (including bluegill, crappies, and yellow perch), walleye, and northern pike.

Of Minnesota's more than 10,000 lakes larger than ten acres, 5,493 are fishable.

There are 15,000 miles of fishable rivers and streams in Minnesota. Minnesota has 1,900 miles of trout streams.

The Minnesota DNR manages 3.8 million acres of fishing waters.

Minnesota fish hatcheries include five cold-water hatcheries (for trout and salmon), and twelve cool- and warm-water hatcheries (for walleye, muskie, catfish, and other fish).