



## Biological Indicators of Watershed Health

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# Freshwater Fish Families by Order

## Order Acipenseriformes ([Sturgeons](#) and [Paddlefishes](#))

This order contains two families, the sturgeons (Acipenseridae) and the paddlefishes (Polyodontidae - see below) both of which occur in North America. These fishes are found in freshwaters; however, some are anadromous. (Anadromous fish are born in fresh water, migrate to the ocean to grow into adults, and then return to fresh water to spawn.) They are among the largest freshwater fishes, and are remnants of an ancient and primitive group. Members of this order have largely cartilaginous skeletons, upper jaws that are not united with the skull, and heterocercal caudal fins. (Heterocercal caudal fin which means that the upper lobe is larger than the lower lobe and produces a downward thrust; when used with the pectoral fins it provides a forward motion). (National Audubon Society Field Guide to North American Fishes)



The paddlefish is of the Order Acipenseriformes, Family Polyodontidae. There are only two genera and two species worldwide. There is only one species in North America - *Polyodon spathula*.

## Order Lepisosteiformes ([Gars](#))

This order consists of a single family, 2 genera and 7 species worldwide with 5 of them in North America. Gars are mostly freshwater and are long, slender, predatory fishes covered with interlocking ganoid scales that protect them from most predators. Extremely hardy, gars typically inhabit quiet, weedy backwater areas. They have elongate jaws with needle-like teeth, and are equipped with a vascularized swim bladder to permit aerial respiration. The single dorsal fin is located posteriorly on the body above the anal fin. (National Audubon Society Field Guide to North American Fishes)

## Order Cypriniformes ([Minnows](#), [Carps](#) and [Suckers](#))

This order of fish has 2,662 species, with the greatest diversity of species found in Southeastern Asia. All the fish in this order lack teeth in their mouths. Many species are used for food, aquarium fish, or research. Some common examples are the goldfish, minnows, and loaches. (<http://www.biokids.umich.edu/critters/information/Cypriniformes.html>)

## Order Siluriformes ([North American Catfishes](#))

This large order contains 34 families, but in the US there are only 2 native families with most belonging to the Ictaluridae. North American catfishes are closely related to the Cypriniformes because both groups have an organ connecting the swim bladder with the inner ear, providing excellent hearing. The Ictaluridae have four pairs of barbels, an adipose fin, and each dorsal and pectoral fin has a single spine. (National Audubon Society Field Guide to North American Fishes)

## Order Esociformes ([Pikes](#) and [Pickerels](#))

There are two families in this small order, both of which occur in North America. These freshwater fishes have elongate to relatively elongate bodies, with the dorsal and anal fins located far back on the body. They lack adipose fins, and breeding males do not have tubercles. (National Audubon Society Field Guide to North American Fishes)

## Order Salmoniformes ([Trout](#) and [Salmon](#))

This order contains 2 families, both of which are found in North America. Smelts (Osmeridae) and Trouts and Salmon (Salmonidae). They include freshwater, marine, anadromous, and deep-sea species. All have soft-rayed fins, adipose fins, and abdominal pelvic fins. (National Audubon Society Field Guide to North American Fishes)

## Order Scorpaeniformes ([Sculpins](#))

Head and body tend to be spiny or have bony plates; pectoral fin usually rounded, membranes between lower rays often incised; caudal fin usually rounded (occasionally

truncate, rarely forked). <http://www.fishbase.org/Summary/OrdersSummary.cfm?order=Scorpaeniformes>

### Order Perciformes ([Temperate Basses](#), [Sunfish](#), [Perches](#), Drums)

Perciformes is not only the largest order of fish, but also the largest order of all vertebrates. There are 9,293 species, which is more than one third of all the fish species in the world. Most members of this order are marine fish, but about 2,000 species are freshwater. Many species of marine fish do spend part of their life cycle in freshwater. (<http://www.biokids.umich.edu/critters/information/Perciformes.html>)

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