

Handling and Releasing Fish

A guide for the angler to
lessen fish stress and
catch-and-release mortality





Keeping Safety in Mind

Proper fish handling and release is all about safety — your safety as well as the safety and health of the fish.

Learn the best ways to protect your hands and to lessen fish stress when catching them and when they are in your possession.

A Word About Harvest

Cooking and consuming fish that you personally caught can be a rewarding conclusion to your outdoor adventure. There are many health benefits to eating wild-caught fish in Missouri, and it can be a good alternative to store-bought fish. For the Missouri Department of Health and Senior Services' consumption guidelines and fish advisory, check online at short.mdc.mo.gov/Zwb

Part of being a responsible angler is being mindful of regulations that dictate methods for fish harvest. Some of these regulations require anglers to return the fish they catch to the water alive.

Follow the guidelines in this booklet to reduce harm to fish, which will decrease catch-and-release mortality.

How to Measure Your Catch

Learn to measure and identify the fish you catch so that you can abide by Missouri's fishing seasons, daily limits, length limits, and other regulations. When in doubt about a fish's legal length, play it safe, and immediately return the fish to the water unharmed.

To measure a fish:

- Place the fish on a ruler. Make sure the fish is laid flat on its side.
- Close the fish's mouth.
- Squeeze the lobes of the fish's tail fin together.
- Measure a straight line from the tip of the snout to the tip of the tail lobes.

Note: Paddlefish are measured from the eye to the fork of the tail.
Sturgeon are measured from the tip of the snout to the fork of the tail. Only shovelnose sturgeon are legal to keep.

Minimum Length Limit

Any fish below the listed minimum length must be returned to the water unharmed immediately after being caught.



Choose Equipment That Brings Fish in With Minimal Harm

- ▶ Use artificial lures instead of live bait, especially for catch-and-release fishing. Fish that strike artificial baits are less likely to be hooked deeply enough to damage vital organs and have a higher survival rate.
- ▶ Squeeze hook barbs flat with pliers or file them off. Barbless hooks reduce the risk of causing serious wounds.
- ▶ Use a landing net large enough to handle your fish safely. Nets made of soft, woven, knotless nylon or rubber are preferred.



Walleye and rubber landing net

CLIFF WHITE



CLIFF WHITE



Blue catfish

Reduce Fish Stress – Angling Advice

- ◆ If you use live bait, set the hook at the first sign of a bite so the fish is less likely to swallow the bait.
- ◆ On rod and reel, don't play a fish any longer than necessary.
- ◆ Check setlines frequently to improve survival of released fish. In the summer, keep setlines positioned above the thermocline (the transition zone between surface water and deep water) and not in the deeper water where the oxygen concentrations are lower.

Don't Dump Bait!

It is illegal to dump bait into Missouri waters.

Throw unused bait in the trash.

Unwanted animals and plants can invade local water, damage habitat and ruin your fishing.

To learn more about protecting Missouri's streams, rivers and lakes from invasive species, visit www.missouriconservation.org.



Image courtesy of Illinois-Indiana Sea Grant.



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Handle Fish Carefully

- ◆ Keep the fish in the water as much as possible while removing the hook if you plan to release it.
- ◆ Be gentle. Squeezing the fish can damage its internal organs.
- ◆ Wet your hands and any other dry surface a fish may touch. This will protect the fish's slime coat, which guards it from infection and improves survival.
- ◆ Hold large fish by the lower jaw with one hand and cradle the heavy body with the other. Have another person remove the hook.
- ◆ Avoid teeth by grasping fish over the gill covers.
- ◆ Never put your fingers in the eye sockets or gills and do not lift the fish by the gill covers.
- ◆ Always carry a hook disgorger or needle-nosed pliers. Back the hooks out if possible.
- ◆ Cut the line as close to the hook as possible if the fish is hooked deeply in the gills or stomach. The hook will fall out after a time, with minimal harm to the fish.

Minimize the Amount of Time a Fish is Exposed to the Air

A good rule-of-thumb is to keep the fish out of water no longer than you can hold your breath.

- ◆ Take pictures quickly.
- ◆ Freezing air temperatures are especially harmful and can harm the gills, eyes, and other sensitive areas of a fish.
- ◆ Release endangered fish unharmed immediately. Pallid sturgeon and lake sturgeon are the endangered fish species that anglers are most likely to catch.

Missouri's Sport Fish Restoration and You

Anglers make it possible for the Missouri Department of Conservation to better manage the state's fish populations. Through the federally funded Sport Fish Restoration Program, you help make Missouri's fishing even better each time you purchase a new lure, replace a reel, or gas up your boat.



When you purchase sporting goods, you pay a special federal tax that is collected by suppliers and manufacturers. Each year, Missouri receives about \$8 million from that tax. This money pays 75 percent of many fish restoration projects designed to improve your fishing.

In Missouri, the Sport Fish Restoration Program helps fund:

- ◆ Research to increase fish populations and improve fishing
- ◆ Fisheries management and research to improve fish habitats and fishing and management advice to pond owners
- ◆ Public access to lakes, rivers and streams, and new public lakes
- ◆ Hatcheries, which produce the fish used to stock lakes and rivers
- ◆ Educational programs about Missouri's diverse aquatic environment
- ◆ Special projects to teach angling skills and provide fishing opportunities for kids, urbanites, the disabled, and the elderly

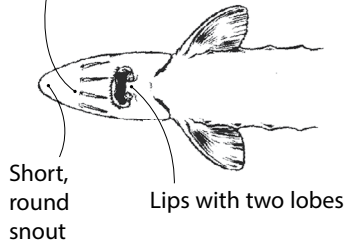
How to Identify Sturgeon

There are three species of sturgeon in Missouri. Pallid and lake sturgeon are endangered and must be protected. Use the information listed below to learn the key differences so you can always return pallid and lake sturgeon unharmed to the water immediately.

Lake sturgeon (endangered)

- ▶ Sides and back range from dark slate to light brown or yellowish-olive; white belly
- ▶ Found throughout Missouri and Mississippi rivers and their tributaries
- ▶ May reach 8 feet in length and more than 300 pounds

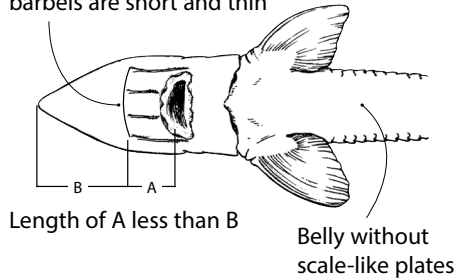
Barbels near mouth are smooth, not fringed



Pallid sturgeon (endangered)

- ▶ Grayish-white color
- ▶ Found in the Missouri River and in the Mississippi River downstream from the mouth of the Illinois River and their tributaries
- ▶ May exceed 30 inches in length and reach 10 pounds or more

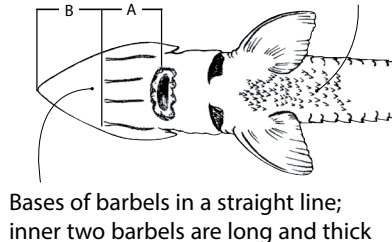
Bases of barbels form a crescent; inner two barbels are short and thin



Shovelnose sturgeon

- ▶ Reddish-brown or buff color
- ▶ Found throughout Missouri and Mississippi rivers and their tributaries
- ▶ Rarely exceeds 30 inches in length or 5 pounds

Belly with scale-like plates





NOPPADOL PAOT-HONG

Reviving a Tired Fish

An exhausted fish may have little energy to swim away when released.

- ◆ Hold it upright in the water by grasping its tail with one hand while supporting its belly with the other.
- ◆ Gently move the fish back and forth below the water's surface. This allows oxygenated water to flow over the gills.
- ◆ When the fish is revived, release your grip, and allow it to swim away.

Fish Caught from Deep Water and Buoyancy Problems

Most fish have an internal swim bladder that is used to maintain buoyancy. Deep-caught fish that are brought up too quickly may have trouble regulating pressure in their swim bladder, causing barotrauma. Due to physiological differences, some fish species can prevent barotrauma. Examples in Missouri are trout, gar, and catfish. Other fish species that can be harmed by being brought up too quickly can show the following symptoms:

- ◆ Bulging eyes.
- ◆ Stomach protruding from mouth.
- ◆ Remaining at the surface on their side or in a “belly-up” posture.
- ◆ Bloody fins due to ruptured blood vessels.

Bringing fish up quickly from depths greater than 30 feet can cause barotrauma and increase fish mortality.

The following practices can help reduce the likelihood of barotrauma in fish:

- ◆ Fish waters no deeper than 30 feet.
- ◆ Reel in fish slowly to give them time to depressurize.

Maintain Optimal Conditions in Holding Tanks and Livewells

- ◆ Provide continuous aeration, cool the water with ice when livewell water temperature is over 80 degrees, maintain a 0.5 percent salt (NaCl) solution (1/3 cup non-iodized salt per 5 gallons water), and replace half of the livewell water at least every two hours.
- ◆ Don't allow water to drain from a live well when motoring around the lake.
- ◆ Don't put too many fish in your live well. You should hold no more than 3/4 pounds of fish per gallon of water.



DAVID STONNER

Recommendations for Tournaments

Locate the weigh-in site close to the release site and the parking lot or boat-mooring area.

- ◆ Keep fish in livewells until participants leave their boats.
- ◆ Shorten weigh-in lines by using only three to five organizer-provided weigh-in baskets. A series of light colored, clean, 50-gallon plastic garbage cans of lake water should be spaced every 10 feet up to the scales so that baskets of fish can be kept in water until the actual weigh-in. The water in these cans must be kept cool, fresh, and aerated.
- ◆ Provide proper water conditions in the post weigh-in holding tank by using continuous aeration and maintaining recommended temperature and salt concentrations.
- ◆ Choose release sites with relatively cool, clear, deep water.
- ◆ Assign people to coordinate fish release. After the weigh-in, fish should be classified as releasable or non-releasable. Non-releasable are dead, weak, or injured fish.
- ◆ Three to five days after the release, check every release area and remove any dead fish. The tournament should not be considered over until this has been done.
- ◆ Consider refereed or geo-referenced photographic tournament formats. Nearly immediate release after recording increases fish survival.

A complete guidebook for tournament anglers and organizers can be found at:

- ◆ B.A.S.S.: short.mdc.mo.gov/4YY
- ◆ Shimano: short.mdc.mo.gov/4Yr



PHAPPADOL PAOTHONG

Gasconade River



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