

THE ART OF SEINING



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Everyone loves an aquarium. The sound of gurgling water and the rhythmic movement of fish have a calming—even mesmerizing—effect.

The aquaria I remember from my youth housed only tropical fish. The exotic fish they contained required a lot of care and a strictly controlled environment, and I wondered why people didn't keep native species instead. It made such perfect sense to do so that I began keeping native fish many years ago.

More than 215 species of native fish live in Missouri. Many are as beautiful as any of the exotics sold in the aquarium trade. Native fish also have the advantage of having adapted to harsh or disturbed environments. They usually are easier to keep in aquaria than exotic species that can survive only in specific and stable environments.

Another reason you might choose native fish for a home aquarium is that you can collect them from local streams.

You only need a valid Missouri fishing permit to possess 100 non-game fish. You cannot collect or possess Missouri endangered and threatened species, and you can only take game species by hook and line, or as regulations permit.

The best tool for collecting native species suitable for home aquaria is a seine. A seine is a rectangular-shaped, small-meshed net tied to large poles on each end. These poles are called brails. Seines come in many sizes. For the typical amateur fish enthusiast, a seine measuring 10 feet long and 5 feet high with 3/16-inch mesh will adequately capture most small fish in shallow pools. The brails should be made of strong wood cut into rods that are as tall as the seine is high. They should be about 1-1/2 to 2 inches in

diameter for easy gripping. Round wooden hand rails for stairways can be used and are available at most hardware stores.

Longer and taller nets with smaller mesh have more specialized applications and may be used as you gain more



Bob's daughter Jenny (front left) and son Chris (wearing the Nebraska cap) explore fish collected in a recreational seine haul.



Rainbow Darters (*Etheostoma caeruleum*) are common in many Missouri streams.

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Bob Hrabik's infatuation with native fishes began while seining for bait with his father on cool fall days in Nebraska. The bait they caught was kept alive overwinter and used for many ice fishing escapades. Curiosity about what kinds of stream fish they were catching led to streambank and garage "fish ID" sessions using the very old *Fishes of Nebraska* pamphlet (1974) and the first edition of *Fishes of Missouri* (1975). Years later, Bob found himself lead author on *The Fishes of Nebraska* (2015) and will soon complete the 3rd edition of *Fishes of Missouri*.



Lifting the seine and its valuable catch on to shore. Bob is in the cap, with his wife Linda and daughter Jenny to his right.

experience. Some seines have a bag attached in the center to trap fish more efficiently. The bag can prove cumbersome for beginners, and it may snag as you drag the net across the stream bottom.

Seines are often used by biologists to capture fish for scientific purposes. However, the effective use of a seine is probably more art than science. Seining usually involves two people working together to corral fish into an area where they can be trapped and pulled from the water in the net.

Seining with the current is far more efficient because there is less drag on the net. You can also move more quickly to trap fish, and there is no pressure wave in front of the seine, which can cause fish to move away from the net.

Fish may try to avoid a seine by going under, around, or over it. You can make your net more efficient by adding extra floats to the float line, especially when you will be using the net in deep and swift water. You can add a chain to the net to make it hug the bottom and churn up objects (like stones, sticks, etc.) to dislodge fish that live in crevices.

When pulling the seine to shore, be sure to keep the lead line on the bottom. You may have to get down on your knees and slowly work the lead line into the bank and then lift quickly into snags or undercut banks. If you see fish in

the net and there's no good takeout point along the shore, try quickly lifting the seine in mid-water. Through practice and repetition, you'll learn how best to capture fish and avoid snagging the net.

Many fish desirable for an aquarium live in riffles. Riffles are shallow areas in streams where the water flows swiftly over exposed gravel and cobble on the bottom. A drag seine may not be appropriate for riffles. However, you can set the seine below a riffle and dislodge fish by "kicking" the cobble and rock. This is called "kick seining." The technique usually requires three people, two to hold the net on each end and one to furiously kick the riffle. Kick seining is an especially good technique to capture darters and madtoms.

You can use the seine alone, but it is difficult and not as efficient. Instead, I prefer to use a sturdy dip net to capture fish in riffles, or in small pools with snags and undercut banks. I use the dip net as a one-person kick seine. I face downstream holding the dip net in the water below me with two hands. I then back upstream, disturbing the bottom with my feet. The net captures fish that rush downstream, panicked by the disturbance I make.

Many of Missouri's small fishes—especially darters, minnows, and madtoms—make excellent aquarium specimens. The young of large species like catfish, gar, and sun-



Kick seining in fast water. Leading the kickers (in black t-shirt) is NANFA member Tyler Goodale.



Tyler Goodale kicking rocks in a riffle to flush hiding fish into the dip net.

fish, are often docile and interesting, but they quickly outgrow a small aquarium.

Darters are some of the most beautiful fishes in North America. Many darters, especially males during the breeding season, have brilliant splashes of orange, red, green, and blue on the fins and over their body. Most darters are docile and display their colors when perching upon objects in the tank. The wide-spread Orangethroat (*Etheostoma spectabile*) and Rainbow (*E. caeruleum*) darters are especially calm and attractive in aquaria. The Johnny Darter (*E. nigrum*) and Logperch (*Percina caprodes*), also widespread in Missouri, tend to be a little nervous, but they become accustomed to living in an aquarium over time. Darters prefer live food, but most species can be conditioned to eat frozen brine shrimp and other manufactured fish foods.

Nearly 70 species of minnows live in Missouri. Minnows generally aren't as brilliantly colored as darters. Most are energetic and move frequently back and forth across the tank. However, some minnows, such as the Southern

Redbelly Dace (*Chrosomus erythrogaster*) are beautiful and do well in an aquarium.

The widespread Bluntnose Minnow (*Pimephales notatus*), Red Shiner (*Cyprinella lutrensis*), and Redfin Shiner (*Lythrurus umbratilis*) also thrive in an aquarium. Red Shiners are territorial and often chase other fish from their corner of the tank. Stonerollers, which are also widespread, usually do poorly because they eat algae, which is not readily available in most aquaria. Minnows will eat dry fish food and brine shrimp, making them very easy to keep.

Madtoms are small members of the catfish family and are found statewide. All nine madtom species make good to excellent aquarium specimens. Madtoms are secretive, however, and are usually seen only at feeding time or at night. They spend most of their time hiding under objects in the aquarium.

Most madtoms are uniformly colored, but the widespread Slender Madtom (*Noturus exilis*) has dark-fringed fins. Others, such as the Ozark (*N. albater*) and Brindled



Slender Madtoms (*Noturus exilis*) are common over much of the Ozarks, but show interesting variation in the White River system. Their range extends well into northeastern Missouri all the way to Fox River. This distribution poses interesting zoogeographic questions.

(*N. miurus*) Madtoms, have crossbars over their backs and may appear mottled. Madtoms are voracious and will eat just about anything.

Keeping native species in an aquarium can have scientific value. Many of our native species are difficult to

study and observe in their normal habitats. Scientists have learned much about the reproductive behavior of native fish simply by keeping them in aquaria. Even amateur fish collectors have discovered behaviors previously unknown to science by watching native fish in a home aquarium.

AQUARIUM CARE FOR NATIVE FISH

Keeping native fish alive and well in an aquarium is easy. Our native fish are generally hardier than exotics. Provide a clean environment and proper amounts of food and you can enjoy native fish for many years.

Begin with a 20-gallon aquarium or smaller. You can work up to a larger system as your needs and experience permit. Don't exceed more than one 2-to 3-inch fish per gallon of water. However, when getting started, I recommend not exceeding one fish per two gallons of water (or no more than 10 fish in a 20-gallon aquarium).

A healthy aquarium must have adequate oxygenation and, more importantly, good filtration. More fish die in aquaria from ammonia build-up than from any other cause, except for initial rough handling in the field. Clean and/or change the filters often. As long as you don't overstock, one small aquarium pump will provide more than enough oxygen in a 20-gallon tank.

Overfeeding also causes problems for novice aquarium owners. Avoid feeding your fish daily at first. Instead, try feeding once every two days. Minnows, darters, and madtoms are small and do not need large quantities of food, especially in an aquarium. If your water appears cloudy after feeding, you have fed too much. Overfeeding can lead to excessive build-ups of impurities that could kill your fish.

If you feed, filter, and oxygenate properly, you won't have to change the water in your tank for up to a year or more. If you do have to change the water, or when adding new fish to an aquarium, be sure the water temperature is the same as that from which the fish came. Remove all chlorine if the water came from a municipal supply. You can do this by adding aquarium dechlorination products, which are available in most pet stores. Change the water if it becomes cloudy when you place new fish in an aquarium.

Finally, give your fish a home. Place rocks, shells, or other objects in the tank for fish to use as cover. Over time, you may add living plants and other animals, like crayfish and shrimp. I recommend keeping the aquarium out of direct sunlight to discourage algae growth.

To learn more about Missouri's fishes, obtain a copy of *The Fishes of Missouri*, published by the Missouri Conservation Department. To learn more about native fish collecting and aquarium design, visit the web site of the North American Native Fishes Association (NANFA).



Chris Hrabik feeding native fishes caught from the Whitewater River, Cape Girardeau County, Missouri.