

Ten Fantastic Fishes from Minnesota

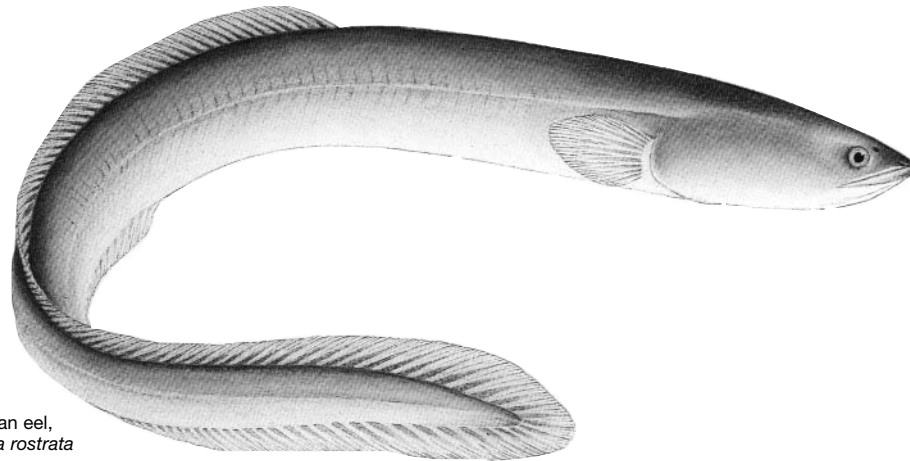
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by

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American eel,  
*Anguilla rostrata*

Fish delight me. With their sleek shapes, colorful variations, and precise scale patterns, fish appear to be the most efficiently beautiful of nature's citizenry.

But what I like even more than their cosmetic appeal is the mysteriousness of fish. Scientists, who have scrutinized every gland and gesture of white-tailed deer and mallard ducks, know surprisingly little about Minnesota's finned fauna. That is true enough of game fishes—walleyes, northern pike, crappies, bass, and the 20 or so other varieties sought for their flesh and fight. It is doubly so for the majority of fishes, ignobly named "forage fish" or "rough fish," that swim unnoticed beneath the hulls of passing boats.

These rarely seen creatures range in size from tiny darters smaller than your pinkie to lake sturgeon big as a man. In temperament they range from the docile paddle

fish to the ferocious bowfin. In all, more than 200 different species of fishes live in Minnesota.

Collected here are 10 fishes from Minnesota that I find particularly fascinating. A few are visually stunning. Others behave extraordinarily. All of them—combined with the state's other 200-plus fish species—are part of complex underwater worlds few people see, understand, or appreciate.

## American Eel

*From Bermuda to Brooklyn Center:  
What a long, strange trip it's been*

Slithering along the mucky bottoms of lakes and ponds in much of Minnesota is a snaky, slimy, slippery tube of flesh called the American eel.

Besides being one of the strangest-looking creatures to swim in freshwater, the eel is catadromous, meaning it lives in freshwater but spawns in the ocean. It's what the salmon does, only backwards.

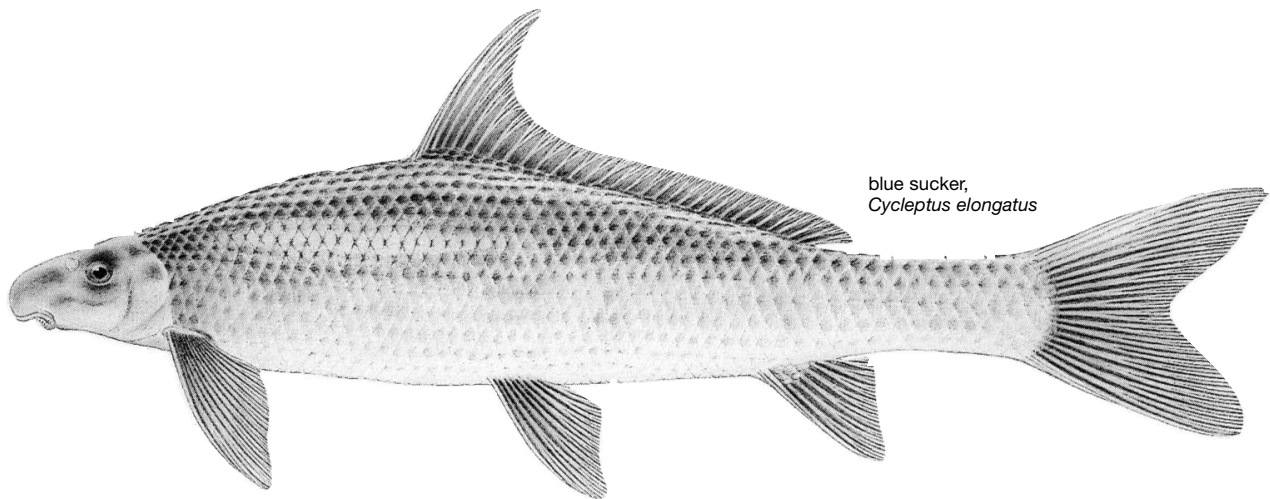
Each fall, adult female eels head from the tributaries and main stems of the St. Croix (below St. Croix Falls), Mississippi (below Coon Rapids Dam), and Minnesota (below Granite Falls) rivers in Minnesota and other waters throughout the continent east of the Rocky Mountains down major rivers to the Atlantic Ocean or Gulf of Mexico. In the brackish estuaries of rivers, the females meet adult males, which spend their lives there. Scientists

they can catch and swallow. They make chirping or slurping sounds that can sometimes be heard on warm summer evenings as the fish feed on the surface. During the day, eels lie buried in mud. At night they emerge to feed, sometimes crawling out onto dewy fields to slurp up worms and unwary frogs.

### **Blue Sucker**

*A rough fish with class*

Here is an aristocrat among fishes. With its elegant shape, striking coloration, and acute sensitivity to pollution



blue sucker,  
*Cyprinus elongatus*

suspect that the pairs then head for spawning waters in the Sargasso Sea, near the Bermuda islands. Adult eels are believed to spawn in the spring and then die.

It gets weirder. The eggs hatch into cigar-shaped larvae, called glass eels because of their flatness and translucence, which drift with the ocean currents to the river mouths where their parents met. This takes about a year, after which the larvae darken, lengthen change into 2- to 3-inch-long juvenile eels called elvers. The males stay in estuaries while the females head upstream.

Moving at night in the shallow water near shore, the young eels make an incredible 2,000-mile journey up the Mississippi and its tributaries. Through the locks of 24 dams on the Mississippi, bypassing rapids by slithering onto shore, the small eels continue north to their mother's home waters. There, they live five to 10 years before the spawning urge strikes and draws them to the Caribbean for the vacation of a lifetime.

American eels, which reach up to four feet long, eat live invertebrates, minnows, crayfish, and anything else

the blue sucker seems more like a wild trout than a sucker. But sucker it is—one of 17 species in Minnesota.

Suckers are named for the toothless, lipped mouth they use to pick up food. In clean, fast-flowing streams, the fish pokes its elongated head among stones in search of scuds, mayfly nymphs, and other invertebrates. It chews its food in its throat (pharynx) using broad molars called pharyngeal teeth.

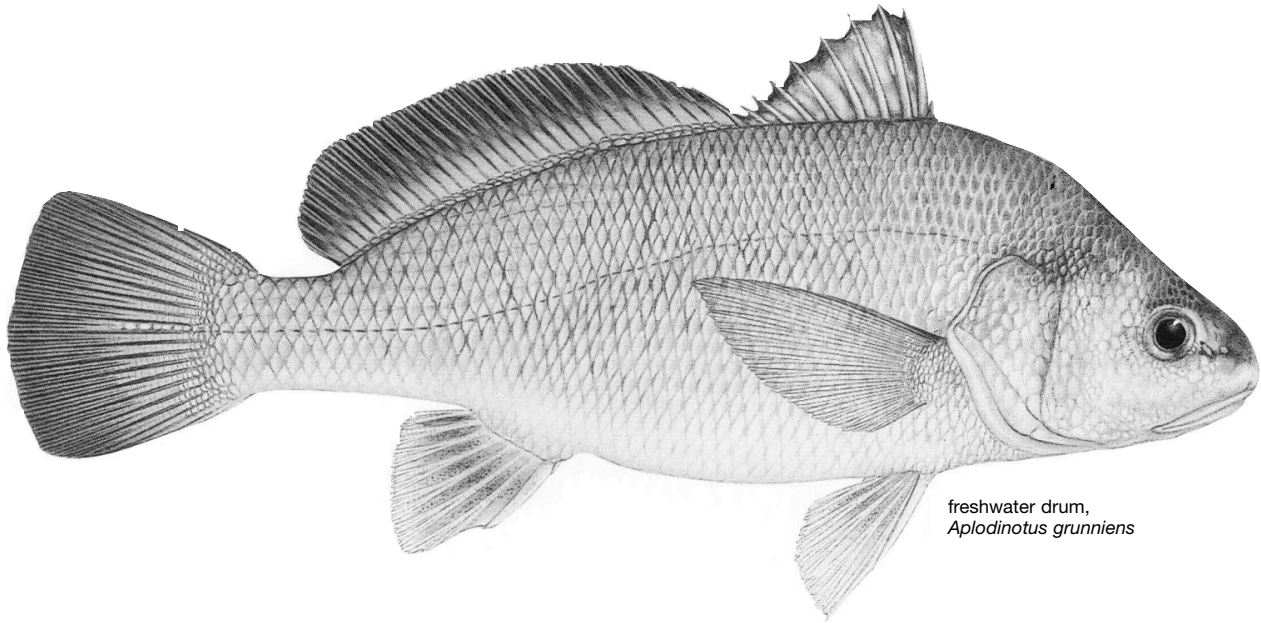
Though sometimes confused with exotic carp, an import from Germany, the 60 species of suckers are distinctly American, found nowhere else in the world except northeastern Siberia, where scientists believe some migrated millennia ago across the Bering Strait, and eastern China. Suckers in Minnesota are divided into four main groups: buffaloes, carpsuckers (no relation to the aforementioned exotic), redhorses, and suckers—one of which is the blue.

Though once common in the Mississippi River and tributaries below St. Anthony Falls, the blue sucker is now scarce and is listed in Minnesota as a species of special

concern in Minnesota in lives in the St. Croix basin north to Taylor’s Falls and in the Mississippi south of Hastings. Though the fish averages a respectable two-foot long, catches by anglers are almost unheard of. Dams built on the Mississippi River stopped the blues’ upstream migration and flooded riffles and rapids where the fish spawn and feed. Silt and other pollutants have made other streams intolerable for this fish, which needs clean water to survive.

Among the drum’s remarkable features:

- The ability to grunt. By vibrating a set of muscles and tendons against its balloon-like swim bladder, a male drum makes a grunting sound during spring breeding season. The drum is also called croaker and thunder-pumper for this sound, which is thought to attract females from a distance.
- A lateral line extending to the end of the tail, rather than just to the base, as on other fish. This allows the



### Freshwater Drum

*This baby’s loaded with evolutionary extras!*

If the freshwater drum were a car, it would be a Rolls Royce. A silver-colored fish that weighs up to 20 pounds in Minnesota, the drum is equipped with so many biological enhancements it can out-compete other species in waters from mid-Canada to Mexico’s Yucatan peninsula. It has the greatest north-south range of any freshwater fish in North America, and is found in rivers, streams, and shallow lakes over much of Minnesota except for the Arrowhead Region. And it is the only freshwater member of the drum family, which includes the popular redbfish (served “blackened” in New Orleans restaurants).

The freshwater drum is known to scientists as *Aplodinotus grunniens*. In Minnesota, the fish is commonly called sheepshead, but in Louisiana its name is gaspergou (from the French *casburgot*—literally, “to break a clam,” referring to its ability to crush mollusks with the heavy molars that line its throat).

drum to pick up extra vibrations and better locate food and enemies.

- An oversized otolith. This white, half-sphere of rock-hard calcium, found in the inner ear of all vertebrates, is especially large in freshwater drum. Smooth on one side, rough on the other, the otolith floats on cilia and helps the fish stay balanced and oriented in murky water.

- Eggs that float on the water surface until they hatch, sometimes traveling for miles on rivers or wind-swept lakes before the tiny fry emerge. The buoyant eggs help account for the species’s continent-wide range.

### Orangespotted Sunfish

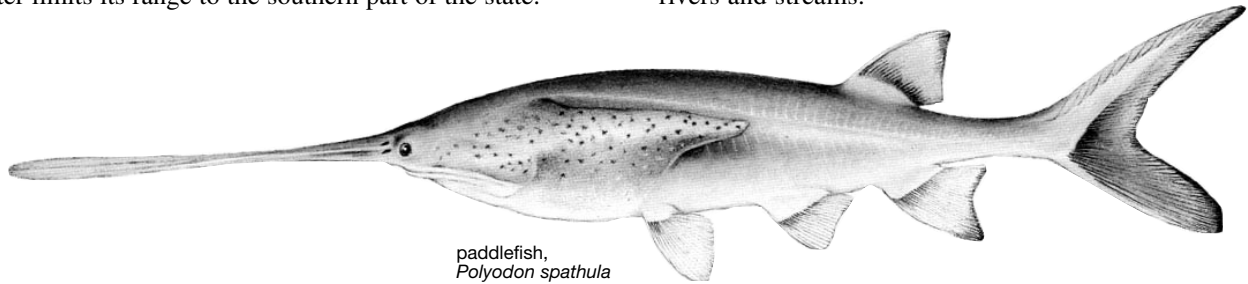
*If peacocks had fins . . .*

The 4-inch-long orangespotted sunfish can look more like a jewel-studded brooch than the sunfish most anglers are used to catching.

Though one of Minnesota’s most colorful fishes, it is only the ostentatious male—and only during spawning

season—that boasts a dazzling appearance. When it's time to attract a mate, the male's body turns a bright turquoise blue, while the belly, fin tips, and most scales radiate a brilliant orange. Females are a drab olive green year-round.

Because the species is so small, it is rarely caught by anglers. Like the green sunfish often found swimming in the same water, the orangespotted sunfish prefers silty, tepid streams with almost no flow. An aversion to cold water limits its range to the southern part of the state.



### **Paddlefish**

*This plankton eater has a spatula for a snout*

Sort of an elephant with fins, the docile paddlefish is a massive fish, weighing up to 100 pounds in Minnesota. Despite its prodigious mass, shark-shaped body, and cave-like mouth, the fish has an easy-going nature. All it eats are tiny insects such as microscopic zooplankton, which it strains from the water using rakes in its gills.

Made rare by dams blocking its upstream spawning migration, the paddlefish is protected in Minnesota. Anglers catch few paddlefish because the fish ignore any bait big enough to fit on a hook. Some states allow paddlefish snagging, a barbarism in which anglers yank oversized treble hooks through the water and then winch the impaled fish onto shore.

The paddle? No one knows what it's for. Some scientists suspect the fish uses it to stir up the river bottom and dislodge insects. Pathologists have found that the paddle is covered with taste buds, which may help the massive fish find food as it roams, mouth agape, through big rivers such as the Minnesota and Mississippi.

### **Common Carp**

*The world's most popular freshwater fish*

Forget everything you've read about carp; this fish is a marvel. Dubbed "Queen of the Rivers" by Izaak Walton 300 years ago, the carp today is the most widely eaten freshwater fish on earth. No species is more popular

among anglers in Britain and Europe, and it is revered by the Japanese and Chinese as a symbol of honor and courage. In most parts of the U.S. however, carp caught by anglers are tossed onto the bank to rot.

Few fish are so vilified in this country as the carp, which, though guilty of some environmental harm to shallow lakes, has been wrongly blamed for a range of acts from destroying game fish populations to polluting rivers and streams.

A native to Europe and Asia, the common carp is an oversized minnow gifted with size (85-pounders have been captured in Minnesota), speed (among the quickest warmwater fish to accelerate from a still position), and remarkable senses of smell and feel.

Like other minnows, the carp possesses a "Weberian apparatus"—a series of small bones and ligaments that link the fish's bladder to its inner ear. The air bladder works as a resonating chamber that amplifies vibrations carried through the water. One study found that carp could detect a tuning fork sounded softly underwater 200 feet away.

Carp weren't always reviled here. In the early 1880s, the fish were actually stocked in private ponds by the Minnesota State Fish Commission. Floods spread the fish to other waters, and soon the prolific fish had spread throughout much of the state. Wrote commission president Robert Sweeny in a 1888-90 report: "Carp . . . are now to be found almost daily on the stalls of the fish dealers of St. Paul and Minneapolis and to the great satisfaction and gustatory enjoyment of many of our foreign-born citizens."

Soon thereafter, however, the carp's popularity waned and then crashed, and by the 1930s the state was paying to have the fish netted from lakes.

Today, carp are starting to gain attention among American sport anglers. Several angling books, including one on fly-fishing for carp in the Great Lakes, called *Carp Are Gamefish*, have been published in recent years. And in its Jan./Feb. 1995 issue, *In-Fisherman* magazine went so far as to call it "The World's Greatest Sportfish."

## Rainbow Darter

*The Northland's answer to a neon tetra*

Rainbow darters look like they belong in a tropical aquarium. Unlike other small fish that blend into their surroundings, the bright blue-and-red rainbow darter appears to shout to predators, "Here I am!" It's surprising any of the little fish remain.

The rainbow is one of Minnesota's 15 species of darters, 2- to 4-inch fish shaped like miniature walleyes. Outfitted with underdeveloped air bladders, darters don't float like other fish but instead dart—hence the name—around over gravelly creek bottoms, snatching up nymphs and other tiny water insects. This evolutionary adaptation allows darters to live in the slower water below swift riffles, where fish that float would be swept downstream.

noons, anglers see its trademark snout—stretching one-sixth its body length—break the water surface as the fish gulps a mouthful of air and then submerges.

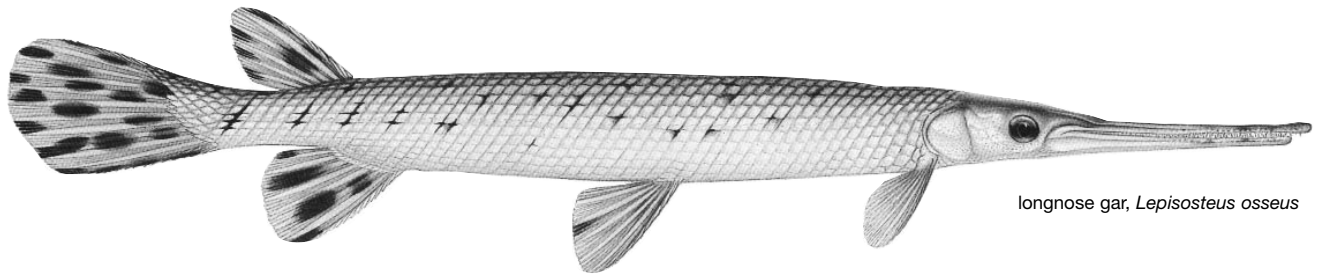
Females lay bright green eggs in shallow weedy bays and swamps that warm to more than 70 degrees. The young often lie in groups at the water surface, looking like floating black match sticks.

Gars stick to warm, slow-moving water where they spend sunny days eating young carp and other minnows that swim within reach.

## Bowfin

*Pugnacious prehistoric piscavore*

The bowfin is another primitive fish largely unchanged from the Jurassic period. Known in Minnesota as dogfish,



longnose gar, *Lepisosteus osseus*

## Longnose Gar

*A throwback to a time when T. rex ruled the region*

To call a gar a living fossil is no exaggeration. The stick-beaked fish today found finning lazily in the stagnant backwaters of Minnesota lakes and rivers differs little from those that darted among the tree-trunk legs of dinosaurs wading in prehistoric swamps.

One of two gars in Minnesota (the smaller shortnose gar being the other), the longnose looks like an armored tube. Covering the cylindrical body is a sheath of interlocking diamond-shaped plates that bend and flex as the fish moves. Hard as tooth enamel, gar "scales" were once used by some American Indian tribes to tip arrows.

Like the bowfin, a gar can actually breathe air by taking oxygen from the atmosphere through its swim bladder, allowing it to survive in water practically devoid of oxygen. Gars have even been known to live 24 hours or more completely out of water. (Anglers take note: livewell unnecessary.)

The longnose gar is common in backwaters of the Minnesota and Mississippi rivers. On hot summer after-

the bowfin is called shoepike in Louisiana, from the French *choupique*, or cabbage pike, on account of its predatory nature and preference for weedy water.

Like the gar, the bowfin has an air bladder that can double as a lung when dissolved oxygen gets low. In unsubstantiated reports, farmers plowing previously flooded fields claimed to unearth live bowfins up to two weeks after the waters had receded.

With its long body, flat snout, and wide mouth, the bowfin resembles a catfish, but with a long unbroken dorsal fin extending the length of its body, which in Minnesota grows up to 10 pounds. In Minnesota, the species is found in shallow lakes, slow-moving rivers, and backwaters in the lower two-thirds of the state.

Legendary for its voracious appetite, the bowfin has been known to eat anything it can fit into its teeth-lined jaws, including turtles, snakes, and small rodents. When guarding its young, a male dogfish will attack anything that approaches. A Wisconsin fisheries biologist once reported that a bowfin attacked him, lunging up and onto the bank before falling back into the water.

No less audacious is the male's spawning coloration.

In spring, the belly and lower fins take on a fluorescent green color that makes the fish look eerily radioactive and allows it to attract females through the murky water the species often inhabits.

On the upper base of the male's tail is a black spot, called an ocellus. Ringed in bright green or orange, the spot looks like a gigantic eye, which some scientists believe diverts attention of herons or other predators from the more vulnerable head.

### **Burbot**

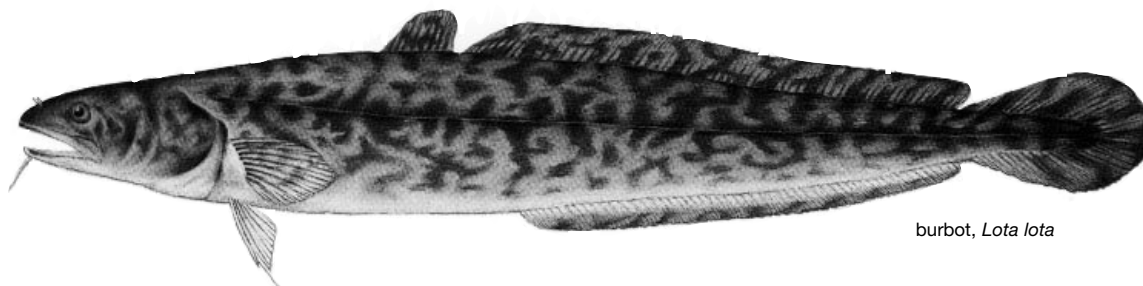
#### *Spectacular spawning of the cornbelt cod*

The burbot can't seem to forget it came from the ocean. Scientists theorize that this freshwater relative of

such a sight as few have ever seen—a struggling, squirming mass of fish, the long brownish snaky bodies twisting around each other, the entire contorted mass turning over and over, beating the water into a foam.”

Like lake trout, burbot are primarily fish of northern waters. Though some occasionally turn up in large rivers as far south as northern Missouri, most burbot swim in deep, clean, cold lakes. Burbot have been found as deep as 1,000 feet in Lake Superior—a depth at which scientists previously believed no fish could live.

Like that of the cod, the burbot's liver is rich in vitamins A and D. French connoisseurs prize the *foie do lotte de riviere* (liver of the river cod), either poached in white wine or made into pate or canapés. The meat is cod-like, too—white and boneless.



burbot, *Lota lota*

Atlantic cod, haddock, and pollock was trapped in Minnesota and a few other northern states when an arm of a prehistoric sea receded. They may be right. The burbot and its European counterpart are the only freshwater fish to spawn in the winter. Perhaps not by coincidence, that is also when cod spawn in the Atlantic Ocean.

The catfish-shaped burbot is marked by a single barbel on its chin and a mottled pattern of brown blotches on a yellow background. Slow for a fish, the burbot uses its camouflage to dupe minnows into swimming within striking distance.

Seen by relatively few biologists and ice anglers, the spawning ritual of the burbot is almost mythical. In late January, burbot move from the depths of lakes to shallow water over mud flats or sandy shoals. The snakelike fish then congregate in a living glob, which may number from a dozen to more than 100 intertwined bodies that move in and out of the quivering sphere, releasing eggs and spawn.

Noted guide and naturalist Sigurd E. Olson, who once witnessed burbot spawning through an opening in the ice, described the spectacle in 1946: “We . . . saw

*Tom Dickson is an information officer for the Minnesota DNR Division of Fish and Wildlife. He is the co-author of Fishing for Buffalo: A Guide to the Pursuit, Lore, and Cuisine of Buffalo, Carp, Mooneye, Gar, and Other “Rough” Fish. A shorter version of this article—minus the sections on the paddlefish and rainbow darter—originally appeared in the July-August 1995 Minnesota Volunteer. © by Tom Dickson.*

#### **How to join NANFA's E-mail lists**

If you have a computer and a modem, feel free to join one or both of NANFA's two E-mail lists: a list for the discussion of native fish keeping and appreciation, and a Board of Directors list for the discussion of BOD issues. To join the general NANFA list, send the word “subscribe” in the body (not subject) of an E-mail to:

[nanfa-request@aquaria.net](mailto:nanfa-request@aquaria.net)

To join the BOD list, send the word “subscribe” in the body (not subject) of an E-mail to:

[nanfa-bod-request@aquaria.net](mailto:nanfa-bod-request@aquaria.net)

Instructions on how to use the lists will be issued when you subscribe.