**Good Lampreys Are Hard to Find**

by

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Most Minnesotans who know anything about lampreys seem to hate them. But should we? Yes, I realize that the sea lamprey has wreaked havoc with fish in Lake Superior. And yes, we’ve spent lots of money trying to control it and deal with the consequences of its parasitic lifestyle. But what about Minnesota’s “other” lampreys, our native species. Are they just as bad?

Six species of lampreys live in Minnesota. Our five native lampreys are much smaller and far less destructive than their distant non-native cousin. Only two native species—the silver and the chestnut lamprey—share the sea lamprey’s behavior of preying on other fish, and they seldom have a noticeable effect on their prey populations. Our three other natives—American brook, northern brook, and southern brook lamprey—are non-parasitic, meaning that they do not attack and prey on other fish.

During the past few years, I did field work on two lamprey projects for the Minnesota Department of Natural Resources’ Natural Heritage and Nongame Research Program to determine lamprey range and abundance and to collect specimens for DNA analysis in the laboratory. I rarely encountered anyone who had seen one of our native lampreys or knew anything about them. Having learned a great deal about these lampreys, I now find them to be some of Minnesota’s most interesting fish species.

All of Minnesota’s lampreys have similar life cycles. Adult lampreys ascend streams to spawn from late April to mid-June, depending on locale and species. Awaiting the onset of spawning, lampreys hide beneath rocks or other objects in fast riffles. I once found an American brook lamprey under a discarded oven door in the South Fork of the Zumbro River near Rochester.

Adults move out of riffles and just upstream to spawning areas in loose groups. I’ve watched as many as a dozen lampreys move out of hiding within a few minutes and begin to spawn. What stimulates them to begin their spawning activities together remains a mystery.

Although a single lamprey can construct a spawning nest, several lampreys often construct a nest together in beds of coarse sand, gravel, or cobble. To clear a spot for nesting, a lamprey picks up stones with its suction-cup mouth and laboriously pushes or drags them away. It also attaches its mouth to a rock and thrashes its body vigorously within the nest, stirring up sediment, which the current carries away. This thrashing digs out a depression an inch or two deep and about the size of a dinner plate, similar to the spawning nests created by sunfish in the shallows of many of our lakes.
Great Lakes Scourge

The only non-native Minnesota lamprey, the sea lamprey (*Petromyzon marinus*) traveled here from its native waters in the Atlantic Ocean and coastal streams of eastern North America. Following construction of the Erie and Welland canals, sea lampreys took more than 100 years to make their way through the Great Lakes to Lake Superior, appearing in 1938.

Preying on lake trout, whitefish, and other commercial and sport fish, the adult sea lamprey attaches its mouth, rasps wounds with sharp teeth and filelike tongue, and feeds on fish tissue, blood, and other body fluids. During its parasitic adult life, it feeds on several individuals. A large fish usually survives a lamprey attack, but it bears scars. A small fish is usually killed outright or dies later from massive infections from the wounds.

In lakes Huron and Michigan, sea lampreys and overfishing drove lake trout to extinction. The same nearly happened in Lake Superior. Fortunately, selective chemical toxicants, or lampricides, were developed to control sea lampreys in tributary streams during their larval stage. Lake Superior trout numbers are now recovering. Control programs for the Great Lakes cost several million dollars each year, but they protect multibillion-dollar sport and commercial fisheries.

Native Lampreys

Smaller size, different fin shape, and unique form and pattern of teeth distinguish native lamprey species from the sea lamprey.

The *silver lamprey* (*Ichthyomyzon unicuspis*) grows to a length of 12 inches. It is most common in the Mississippi, Minnesota, St. Croix, Red, and Rainy rivers and Lake of the Woods. When I collected silver lampreys in the Mississippi, they were usually attached to common carp, but they also parasitized a wide range of fish, including catfish, walleyes, northern pike, suckers, sturgeons, and paddlefish.

The *chestnut lamprey* (*I. castaneus*), similar in size to the silver, lives in smaller streams, such as tributaries of the Rainy, Big Fork, and upper St. Croix rivers. Adults can parasitize large catfish and sturgeon, but most go for smaller suckers and trout.

In general, neither silver nor chestnut lampreys have had the same severe impacts on prey fish populations that...
The American brook lamprey has produced, although silver lampreys have caused some problems in Lake of the Woods. Biologists have speculated that long-term coexistence of native lampreys and their prey has allowed them to adapt to one another.

The **American brook lamprey** (*Lampetra appendix*) is the most common of Minnesota’s three non-parasitic lampreys. However, its relatively small size—usually six to eight inches long—and secretive lifestyle make it difficult to observe. Its natural range extends from Minnesota’s southeastern corner—where it has been reported in about 50 different streams—south to northern Alabama and east to the Atlantic Coast.

Apparently even more secretive than the American brook lamprey, the **northern brook lamprey** (*I. fossor*) and **southern brook lamprey** (*I. gagei*) have escaped mention in recent popular books on Minnesota fishes.

Projects aimed at improving stream habitats for game fish appear to benefit lampreys as well. As people focus on better land management practices in watersheds throughout Minnesota, and as more people learn about native lampreys, I hope the outlook for survival of these obscure but intriguing creatures will improve.

In this issue:

Lampreys  The Continuous Flow Aquarium  Algal Turf Scrubbing
Raising Swamp Fish Fry  Return of the Robust Redhorse  Planted Aquariums  Mummichogs
Mystery of the White River "Monster"  Center for the Preservation of Fish Species