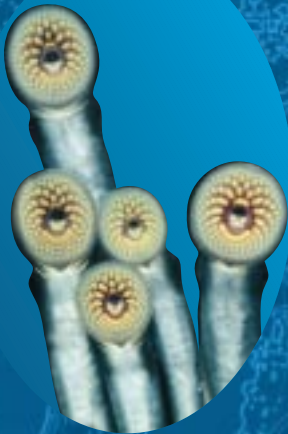


# SEA LAMPREY

## A Great Lakes Invader



Sea lampreys have a suction cup mouth ringed with sharp teeth. They attach to fish and feed on their blood, usually killing the fish.



PHOTOS: GREAT LAKES FISHERY COMMISSION, U.S. FISH AND WILDLIFE SERVICE, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

### What Are Sea Lampreys?

**S**EA LAMPREYS (*Petromyzon marinus*) are primitive jawless fish native to the Atlantic Ocean. In the Great Lakes, there are several different types of native lampreys (including the silver lamprey, the American brook lamprey, and the northern brook lamprey) but the exotic sea lamprey is far larger and more predaceous than native lampreys.

Although lampreys resemble eels, lampreys lack jaws and possess only cartilage. Lampreys have a large sucking disk for a mouth and a well-developed sense of smell. The mouth is filled with sharp teeth that surround a file-like tongue. A lamprey's body has smooth, scaleless skin and two dorsal fins, but has no lateral line, no vertebrae, no swim bladder, and no paired fins.

### How Did Sea Lampreys Spread into the Great Lakes?

Sea lampreys are native to the Atlantic Ocean, not the Great Lakes. Sea lampreys entered the Great Lakes system in the 1800s through manmade locks and shipping canals. Prior to the opening of the Welland Canal in 1829, and prior to its modification in 1919, Niagara Falls served as a natural barrier to keep sea lampreys out of the upper Great Lakes.

Sea lampreys were first observed in Lake Ontario in the 1830s. They did not invade Lake Erie prior to the improvements of the Welland Canal in 1919; sea lampreys were first observed in Lake Erie in 1921. After spreading into Lake Erie, sea lampreys moved rapidly to the other Great Lakes, appearing in Lake St. Clair in 1934, Lake Michigan in 1936, Lake Huron in 1937, and Lake Superior in 1938. By the late 1940s, sea lamprey populations had exploded in all of the upper Great Lakes causing severe damage to lake trout and other critical fish species.

more 

Great Lakes Fishery Commission

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## How Do Sea Lampreys Affect the Great Lakes Fishery?

Sea lampreys attach to fish with their sucking disk and sharp teeth, rasp through scales and skin, and feed on the fish's body fluids, often killing the fish. During its life as a parasite, each sea lamprey can kill 40 or more pounds of fish. Sea lampreys are so destructive that under some conditions, only one out of seven fish attacked by a sea lamprey will survive.

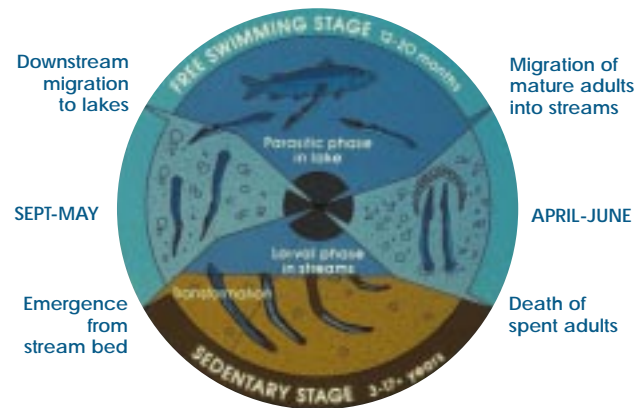
Sea lampreys have had an enormous negative impact on the Great Lakes fishery. Because sea lampreys did not evolve with naturally occurring Great Lakes fish species, their aggressive, predatory behavior gave them a strong advantage over their native fish prey. Sea lampreys prey on all species of large Great Lakes fish such as lake trout, salmon, rainbow trout (steelhead), whitefish, chubs, burbot, walleye and catfish.

Sea lampreys were a major cause of the collapse of lake trout, whitefish, and chub populations in the Great Lakes during the 1940s and 1950s. These fish were the mainstay of a vibrant and important fishery. Before the sea lamprey's spread, the United States and Canada harvested about 15 million pounds of lake trout in the upper Great Lakes each year. By the early 1960s, the catch was only about 300,000 pounds. In Lake Huron, the catch fell from 3.4 million pounds in 1937 to almost nothing in 1947. The catch in Lake Michigan dropped from 5.5 million pounds in 1946 to 402 pounds by 1953. The Lake Superior catch dropped from an average of 4.5 million pounds to 368,000 pounds in 1961. During the time of highest sea

Some information on this fact sheet from: W.B. Scott and E.J. Crossman, *Freshwater Fishes of Canada*, Fisheries Research Board of Canada, Ottawa, 1973.

lamprey abundance, up to 85% of fish somehow not killed by sea lampreys exhibited sea lamprey wounds. The once thriving fisheries were devastated. Great Lakes sea lampreys themselves, traditionally, have had no economic value.

## What Is the Sea Lamprey's Life Cycle?



Adult sea lampreys move into gravel areas of tributary streams during spring and early summer. They build nests and lay eggs before dying. After the eggs hatch, small, wormlike larvae are swept downstream from the nest and burrow into sand and silt. The larvae feed on bottom debris and algae carried to them by stream currents. During this stage, which averages about 4-6 years, larvae grow to about 6 inches. After the larval life stage, sea lampreys transform into their parasitic phase and migrate into the open waters of the Great Lakes. Sea lampreys spend the next 12-20 months feeding on fish. The sea lamprey's life cycle, from egg to adult, averages about 6 years, and may last as long as 20 years.

Of the 5,747 streams and tributaries of the Great Lakes, 433 are known to produce sea lampreys and about 250 are treated on a regular cycle. The Great Lakes Fishery Commission treats approximately 60-70 streams a year for sea lampreys.

The Great Lakes Fishery Commission was established by Convention between Canada and the United States in 1955 to improve and perpetuate fishery resources.

## Great Lakes Fishery Commission

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