

LAMPREYS AND GREAT LAKES FISHERIES

Along with many other European immigrants to the United States in the nineteenth century came many Scandinavians. Many of these Scandinavian immigrants fished for a living, and they were understandably attracted to the Great Lakes Region. Through the early part of the twentieth century, fishing was very good. Catches included a variety of smaller fishes that inhabited the shoals and bays of the Great Lakes, but the prize catches were two deep-water predators—lake trout (*Salvelinus namaycush*) and whitefish (*Coregonus clupeaformis*). The yearly catch of lake trout in each of the Great Lakes in the 1930s exceeded 2,000 metric tons.

These commercial fisheries, however, were doomed. Their fate was sealed years before many immigrants even left their homes in Scandinavia. In 1829, the Welland Canal was completed. It provided a shipping route around Niagara Falls between Lakes Ontario and Erie. Niagara Falls, however, had not only been a barrier to shipping, it had also been a barrier to the sea lamprey. After the Welland Canal was completed, sea lampreys slowly worked their way from Lake Ontario to the other Great Lakes. By 1937, spawning lampreys were recorded in Lake Michigan, and by the early 1940s, Great Lakes fishermen had to work very hard to bring home a single lake trout with a day's catch of predominately smaller fishes. The lamprey, like humans, had a decided preference for the larger, cold-water fish species. In 1944, the annual catch of lake

trout from Lake Michigan had been reduced to less than 100 metric tons. In 1953, it was down to a few hundred kilograms!

Although the lamprey invasion into the Great Lakes brought severe economic hardship to many fishermen, it also resulted in an important success story in fishery management. In the 1950s, Canada and the states bordering the Great Lakes instituted an intensive lamprey control program. Control measures involved the use of mechanical weirs that prevented spawning migrations of lampreys into the tributaries of the Great Lakes. Electrical shocking devices were employed in an attempt to kill lampreys in spawning streams. Finally, chemical control measures were employed. Lamprey populations began to decline, and by the mid-1960s, lamprey control measures were considered a success.

A sport fishery has filled the void that the decline of lake trout created. In the late 1960s, Coho (*Oncorhynchus kisutch*) and Chinook (*Oncorhynchus tshawytscha*) salmon were stocked in the Great Lakes. Survival and growth of these salmon have been remarkable, and fewer than 5% of the salmon caught are marked by lamprey wounds. Fishermen are catching whitefish and lake trout again. To preserve this fishery, lamprey control measures will be maintained in the future to prevent large-scale growth of lamprey populations. Recently, sterile male lampreys have been released in attempts to reduce reproductive success.