



Great Lakes Fishery Commission

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SEA LAMPREY ABUNDANCES SPIKE AFTER COVID-RELATED TRAVEL RESTRICTIONS

Relaxation in sea lamprey control in 2020 and 2021 has resulted in above-target numbers, but trends are positive thanks to recent control efforts

ANN ARBOR, MI—The Great Lakes Fishery Commission (Commission) has announced the annual sea lamprey abundances for each Great Lake in 2024. In it, the Commission noted that populations of non-native predatory sea lampreys are above targets in all five of the Great Lakes. The sea lamprey, a highly noxious fish, spiked in numbers when field crews were constrained in their ability to conduct sea lamprey control in 2020 and 2021. Because of the sea lamprey's life cycle, scientists are now seeing the ramifications of those reduced control seasons. Recent levels of sea lamprey control give the Commission reason to believe that sea lamprey numbers are now on the way back down.

Sea lampreys are an invasive fish that entered the upper Great Lakes accidentally through shipping canals starting in 1921. Sea lampreys feed on the blood and body fluids of fish by attaching to them with a tooth-filled, suction cup mouth and file a hole through the fish's scales and skin with a piston-like rasping tongue. The average sea lamprey is capable of killing up to 40 pounds (18 kg) of fish during its parasitic stage.

Before sea lamprey control, which began in 1958, the species killed far more fish than humans did, causing considerable economic and ecological damage. Sea lampreys have made the Great Lakes home, but the control program has been one of history's biggest invasive species control success stories, reducing populations by 90% or more in most of the Great Lakes. That said, sea lampreys, like a coiled spring, have the ability to bounce back forcefully in numbers if controls are relaxed.

Sea lamprey abundances relative to targets are reported as 3-year averages for all lakes. According to the Commission's report, 2024 is the third year that reflected the impacts of reduced control effort due to the COVID-19 pandemic. The number of adult sea lampreys captured during 2024 was 8,619 more than the three-year pre-COVID average of 38,167 (2017-2019). The largest increases in abundance were observed in lakes Superior and Ontario during 2023 and 2024. Although still above target, lakes Michigan, Huron, and Erie have seen flattening trends in abundance since treatments have returned to a pre-pandemic level.

"The increased abundance in all lakes is not unexpected given significantly reduced control effort



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during 2020 and 2021 due to the pandemic,” said Commission chair Ethan Baker, who is also the mayor of Troy, Michigan. “Control effort in 2024 continued at pre-pandemic levels, but elevated and variable adult sea lamprey abundances should be expected over the next year or two before turning back downward.”

“The sustained increase in sea lamprey abundances following a lapse in annual control effort highlights the continued need for ongoing sea lamprey control and continued research into new and innovative control methods in the Great Lakes,” said Jim McKane, the Commission’s vice-chair. “Native to the Atlantic Ocean, invasive sea lampreys remain a significant threat to the Great Lakes ecosystem, and control efforts must remain a top priority for conservation and management efforts in the region. After more than six decades of successful sea lamprey control, the reduced effort during the COVID-19 pandemic shows that if controls are ceased or relaxed for even a short period of time, sea lamprey populations will rebound, and the fishery will suffer.”

The Commission was established by the Governments of Canada and the United States in 1955 in part as a response to the catastrophic damage caused by the sea lamprey invasion. The 1954 Convention on Great Lakes Fisheries charges the Commission to conduct sea lamprey control, formulate a coordinated bi-national research program, and coordinate fisheries management among the jurisdiction in the basin. Sea lamprey control is conducted in partnership with Fisheries and Oceans Canada and the US Fish and Wildlife Service, with research support from the US Geological Survey and other agencies and institutions. [Future control methods](#) are a priority for the Commission and are supported by the Commission’s science program.

“Maintaining consistent sea lamprey control in the Great Lakes basin is essential to sustaining the robust fishery that provides jobs, sustenance, and recreation for the people of the Great Lakes basin,” said McKane.

Added Baker, “Sea lamprey abundance targets are our benchmark for a healthy fishery. Targets for each lake are determined based on the average number of sea lampreys across a five-year period when sea lamprey wounding rates on fish are deemed acceptable. We continually strive to reach and maintain a level of sea lamprey suppression, which allows a fishery that supports the millions of people that live, work, and recreate in the Great Lakes.”

“The COVID-19 pandemic provided an unintentional, but valuable, lesson. Restricted control effort during 2020 and 2021 allowed millions of larval sea lampreys, that would have otherwise been removed, to survive and parasitize millions of pounds of valuable fish,” Baker continued.

A forthcoming multiagency study funded by the Commission, led by the US Geological Survey, and supported by state and federal agencies, will provide an in-depth analysis of the effect of reduced control effort during 2020 and 2021 on Great Lakes sea lamprey populations.

“Thankfully, control effort has returned to pre-pandemic levels, but elevated sea lamprey populations should continue to be expected over the next year or two,” Baker concluded. “If there was ever proof of the effectiveness of sea lamprey control, the 2020 pandemic and its effect on sea lamprey populations was it.”

REPORT DETAILS, BY LAKE

LAKE SUPERIOR: Adult sea lamprey abundance remains above target for Lake Superior. Stream-specific estimates showed the Brule and Bad rivers contributed 35% and 23%, to the adult abundance, indicating that impacts of reduced control effort during the pandemic may be delayed due to slower larval growth associated with the relatively cooler water temperatures in the Lake Superior basin. In addition, sea lampreys were discovered in an unnamed tributary near Nipigon, ON and in Little Carp River (Gogebic County, MI), though these streams are small and would have a marginal contribution to the lake-wide population. Additionally, sea lamprey escapement occurred upstream of sea lamprey barriers on the Big Carp and Misery rivers and Stokely Creek. Consequently, several factors could be contributing to the increased abundance such as reduced control effort, change in sea lamprey distribution, newly discovered infestations, escapement past barriers, and fully recruited larval populations in index streams. Over the past three years, Lake Superior has received a higher-than-average amount of control effort and with this increased effort, a decrease in lake-wide abundance is to be expected beginning in 2025.

LAKE MICHIGAN: The Lake Michigan adult sea lamprey abundance target was decreased from 34,982 to 20,526 based on the average sea lamprey abundance estimate from 2015-2019, when wounding was near the target of 5 wounds/100 lake trout. In 2024, adult sea lamprey abundance remains above target. Stream-specific estimates showed the Manistique and Big Manistee rivers contributed most to the lake-wide adult abundance estimate at 45% and 22%. Additionally, sea lamprey escapement was documented upstream of the sea lamprey barrier on the Keweenaw River.

LAKE HURON: Adult sea lamprey abundance slightly increased and remains above target for Lake Huron. Stream-specific estimates showed the Cheboygan River contributed most to the 2024 lake-wide adult abundance estimate at 34%.

LAKE ERIE: Adult sea lamprey abundance slightly increased and remains above target for Lake Erie. Stream-specific estimates showed Cattaraugus and Big Creeks contributed most to the lake-wide adult abundance estimate at 36% and 38%.

LAKE ONTARIO: Adult sea lamprey abundance remains above target for Lake Ontario. Stream-specific estimates showed the Humber and Black rivers contributed most to the lake-wide adult abundance estimate at 47% and 33%. A newly infested stream was discovered near Port Hope, ON (Ganaraska River), but the overall impact to the lake is considered minimal given the low abundance of larval sea lampreys observed. Additionally, sea lamprey escapement was documented above the sea lamprey barrier on Shelter Valley Creek. Decreases in the lake-wide adult abundance are a response to the resumption of pre-pandemic control effort. Lake-wide abundance is expected to continue to decline in 2025.

For more information about methodology and to see lake-specific graphs, visit www.glfc.org/status.php.



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