



## Great Lakes Fishery Commission

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**Contact:**  
**Marc Gaden, 734-669-3012**

### **SEA LAMPREY ABUNDANCES BELOW TARGET IN LAKES MICHIGAN AND ONTARIO AND ARE DECREASING IN LAKES SUPERIOR, HURON, AND ERIE**

**ANN ARBOR, MI—** The Great Lakes Fishery Commission today reported that populations of the invasive, parasitic sea lamprey remain at near-historic lows, below targets, in Lakes Michigan and Ontario, and above target, but holding steady, in Lakes Huron, Superior and Erie.<sup>1</sup> Sea lamprey populations in Lake Huron are close to target levels and have been holding steady for the past five years. Abundances in Lakes Superior and Erie remain above target but have also decreased significantly since the near-record highs observed in 2017. Sea lampreys are the worst of the alien species to invade the Great Lakes. Before control, sea lampreys destroyed many times the human fish catch. Today, sea lamprey control is the foundation of the \$7 billion Great Lakes fishery.

The Commission and its partners are encouraged by the overall decrease in abundance of sea lampreys throughout the Great Lakes basin during 2019, but caution that environmental conditions, such as a prolonged spring and high precipitation events, contributed to the decrease.

Sea lampreys are native to the Atlantic Ocean but have been an unwelcome nemesis in the Great Lakes since they invaded through man-made shipping canals in the early 20<sup>th</sup> century. By 1939, sea lampreys were ravishing the system and laying waste to millions of fish. They do little good for the Great Lakes ecosystem as they prey on important species and have no natural predators. 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 razor-sharp tongue. The average sea lamprey will kill up to 40 pounds (18 kg) of fish during its parasitic stage. Sea lampreys prefer trout, salmon, whitefish, and sturgeon, but they also attack smaller fish like walleye and perch.

Sea lampreys successfully reproduce in more than 500 Great Lakes tributaries and thus, the battle to keep their populations in check must remain steadfast. Thanks to more than six decades of successful sea lamprey control, the Great Lakes fishery is worth \$7 billion annually to the people of Canada and the United States today. Before control, sea lampreys killed an estimated 103 million pounds (47 million kilograms) of fish per year. Today, because of ongoing control, sea lampreys kill less than 10 million pounds (4.5 million kilograms) of fish per year. Sea lampreys are a coiled menace; they are extremely

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<sup>1</sup> Sea lamprey abundances relative to targets are reported as 3-year averages and trends are based on data from the past five years. For more information about methodology and to see lake-specific graphs, visit [www.glfc.org/status.php](http://www.glfc.org/status.php).



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2200 Commonwealth Blvd, Suite 100  
Ann Arbor, MI, 28105

734.662.3209  
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hardy and relentless, and history has shown that if control efforts are ceased, or even relaxed for a short period of time, their populations will rebound and the fishery will suffer.

The Great Lakes Fishery Commission was established by the Governments of Canada and the United States in 1955 as a response to the catastrophic damage wrought by the sea lamprey invasion. The 1954 Convention on Great Lakes Fisheries charges the Commission with sea lamprey control and research, fisheries research and fisheries management coordination. Sea lamprey control and research is conducted in partnership with Fisheries and Oceans Canada, the US Fish and Wildlife Service, and the US Geological Survey. Sea lamprey control consists of several techniques including lampricides, barriers, and traps. The Commission also is evaluating the use of chemosensory cues as a means to influence migratory and spawning behaviors. For more information, visit [www.glfc.org/sea-lamprey.php](http://www.glfc.org/sea-lamprey.php).

“Keeping sea lamprey populations in check is absolutely critical if we want a fishery in the Great Lakes,” said Jim McKane, chair of the Great Lakes Fishery Commission. “Each year, we must wage the battle anew. We cannot rest on our laurels or rely on our past success. Sea lampreys are here to stay. Fortunately, we can control their populations such that the damage they inflict on the fishery is a fraction of what it once was.”

McKane added: “It is estimated that only one in seven fish will survive a sea lamprey attack. Sea lamprey abundance targets are our benchmarks for a healthy fishery—targets for each lake were determined based on the average number of sea lampreys across a five-year period when wounding rates were deemed acceptable. We continually strive to reach and maintain a level of sea lamprey suppression that allows for the establishment of a fishery that supports the millions of people that live, work, and recreate in the Great Lakes.”

“The Great Lakes sea lamprey control program is the most successful aquatic vertebrate pest control program administered at an ecosystem scale in the world,” said Doug Stang, the Commission’s vice-chair. “Its effectiveness is built upon partnerships with both federal governments, the U.S. states the province of Ontario, tribes, and the Commission. The fishery makes these lakes great, and without sea lamprey control, there would be no fishery.”

The latest sea lamprey status, by lake, is as follows:

**LAKE ONTARIO:** Treatment effort on Lake Ontario has remained steadily consistent for the past three decades. As a result, lamprey numbers have remained steadily at or near target and at historic lows.

**LAKE MICHIGAN:** Lake Michigan has received a considerable amount of targeted treatment effort since 2012, including biennial treatment of the major lamprey-producing Manistique River; this effort is evident in the continuation of historically low abundances of sea lampreys. Lake Michigan likely benefits from treatments in the northern portion of Lake Huron, such as the St. Marys River.

**LAKE HURON:** For nearly a decade, heightened and targeted treatment strategies, including two large-scale treatments of the St. Marys River, have been employed in Lake Huron. While sea lamprey abundances are slightly above target, they are still near historic low and are holding steady. Two tributaries to northern Lake Huron, the Mississagi and Garden Rivers, have been a focus of the control program. The Mississagi was treated in 2019 in partnership with the Mississauga First Nation and the Garden River will be treated in 2020, as part of an ongoing alliance with the Garden



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River First Nation. We expect the benefits of these treatments to be seen in the 2021 population numbers.

**LAKE SUPERIOR:** Lake Superior received a targeted treatment effort in both 2016 and 2019. The effects of the 2016 targeted treatment were not evident in the 2019 sea lamprey abundances and the impact of the 2019 targeted treatment will likely not be seen until 2021. While sea lamprey populations are above target, they are holding steady. Contrary to the high populations, lake trout wounding rates are near target and decreasing, though there are pockets of higher wounding rates throughout the lake. Environmental factors, including a prolonged spring and high precipitation events, have long been hypothesized as being influential on sea lamprey catchability and natural mortality; this hypothesis was corroborated this year in that trap catches were low. In 2017 and 2018, the population estimate from the Brule River was greater than 40% of the total catch, but this trend did not hold in 2019.

**LAKE ERIE:** Challenging trapping conditions and poor catch rates in 2019 likely influenced the abundance estimate, which is above target but holding steady. Near record walleye year classes may be increasing, thereby creating predatory pressure on recently metamorphosed juvenile sea lamprey, especially from the Huron-Erie corridor.

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