Great Lakes Fishery Commission
La Commission des Pêcheries des Grands Lacs

For Immediate Release
April 10, 2025

Contact: Greg McClinchey
226-980-9193

NOXIOUS SEA LAMPREYS TOOK ADVANTAGE OF COVID-19 PANDEMIC, NEW STUDY FINDS

ANN ARBOR, MI—Travel restrictions associated with the COVID-19 pandemic caused a major pause in critical work to control destructive, invasive sea lampreys in the Great Lakes, resulting in two years of reduced control in 2020 and 2021. Scientists have analyzed this unprecedented situation to determine whether the pause had a meaningful effect on sea lamprey abundances and fish wounding. Their study, published in March in the journal *Fisheries*, concluded that sea lamprey numbers—and fish wounding—skyrocketed during the pause, demonstrating that ongoing control of this invasive species is critical to protecting Great Lakes fish and the valuable fisheries they support. Great Lakes fisheries generate $5.1 billion in economic output each year and directly support 35,000 jobs in addition to hundreds of thousands of jobs related to tourism, navigation, and more.

Sea lampreys are parasitic fish native to the Atlantic Ocean. Their populations spread into the Great Lakes in the mid-1800s and early 1900s, where they caused considerable harm to native fish, such as lake trout, whitefish, ciscoes, and walleye. Sea lampreys feed by suctioning onto fish, using their tongues to rasp a hole through the skin, and consuming the blood and juices that flow out. Each sea lamprey is capable of killing up to 40 pounds of fish during its parasitic stage. When populations peaked at nearly 2.5 million animals in the mid-1900s, sea lampreys were killing a staggering 100 million pounds of fish each year.

Science-based efforts to control Great Lakes sea lampreys began in the 1950s, eventually causing populations to plummet to only about 10% of their historic highs. Sea lamprey control is coordinated by the Great Lakes Fishery Commission in partnership with the U.S. Fish and Wildlife Service and Fisheries and Oceans Canada, with science support from the U.S. Geological Survey (USGS). The sea lamprey control program is considered one of the most cost-effective and successful invasive species suppression programs in the world and an essential component of protecting economically valuable Great Lakes fisheries.

But the COVID-19 pandemic threatened that success for two years.

With limitations on travel due to safety concerns in place during 2020-2021 for the primarily Michigan and Ontario-based control crews, control efforts were greatly reduced, particularly at the geographic extremes of Lake Ontario and Lake Superior. What followed was a unique situation that allowed scientists to answer

key questions about Great Lakes sea lamprey control. Are invasive sea lampreys still a threat to Great Lakes fisheries? Is sea lamprey control still necessary to suppress their populations?

A team of fifteen scientists from six agencies found that the answer to both questions is a resounding "yes." The research team found that reductions in lampricide applications—a pesticide highly selective to lampreys—during 2020-2021 corresponded to a rapid increase in sea lamprey abundance. In Lake Ontario, sea lamprey population sizes increased over an order of magnitude (10x).

"Like a coiled spring, sea lamprey populations bounced back quickly when control was relaxed," said Dr. Ben Marcy-Quay, fish biologist with the U.S. Geological Survey, and lead author of the study.

"We also looked at multiple fish species in Lake Ontario, including lake trout, Chinook salmon, coho salmon, and steelhead/rainbow trout, and found a substantially greater rate of sea lamprey wounds on fish following reduced treatment effort," continued Marcy-Quay. "Wounding on Chinook and coho salmon, specifically, increased over 10-fold. Our findings support observations by the fishing public and fishery managers of fish riddled with sea lamprey wounds, some containing three or more wounds per fish."

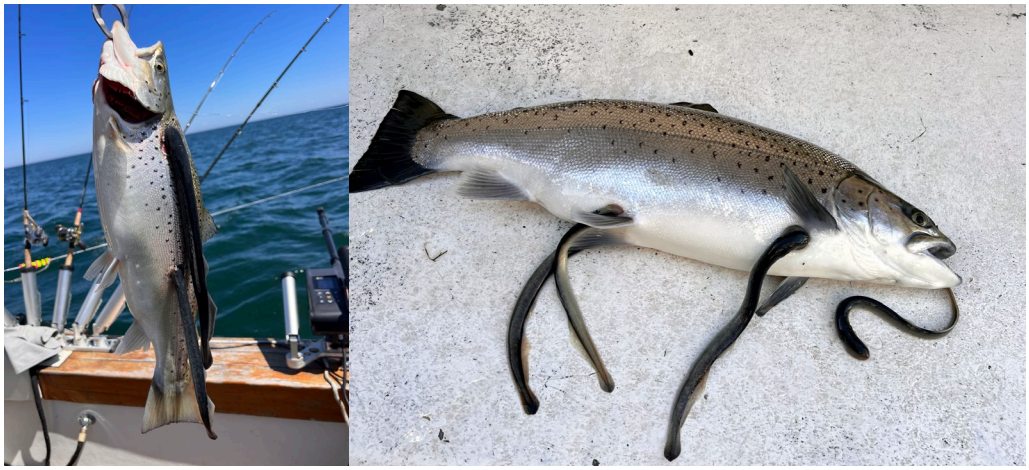
"When life gives you lemons, make lemonade," quipped Dr. Nick Johnson, research ecologist with the U.S. Geological Survey, and co-author on the study. "When the COVID-19 pandemic significantly reduced sea lamprey control for two years, our research team made the most of the situation by using it as an unplanned experiment to learn valuable information—nearly impossible to obtain otherwise—about the current impact of control on sea lamprey populations."

"Ongoing, consistent sea lamprey control is critically important for preventing damage to Great Lakes fish by invasive sea lampreys," explained the Hon. Ethan Baker, chair of the Great Lakes Fishery Commission and Mayor of the City of Troy, Michigan. "This research shows that sea lamprey control must continue each year to keep populations of this harmful invasive species in check. If we take our foot off the gas, even for a short while, sea lamprey populations will increase rapidly and cause considerable damage to fish."

Baker concluded, "Fishing is a way of life in the Great Lakes region. The health and happiness of millions of people are tied to the lakes. Sea lamprey control is critical to safeguard the prosperity of the region."

This research was conducted in collaboration by the U.S. Geological Survey, Fisheries and Oceans Canada, New York State Department of Environmental Conservation, U.S. Fish and Wildlife Service, Ontario Ministry of Natural Resources, and Great Lakes Fishery Commission.

Read the full study, "Sea lamprey control reduction during the COVID-19 pandemic corresponds to rapid increase in sea lamprey abundance," published in the journal *Fisheries*: https://doi.org/10.1093/fshmag/vuaf020.



Two brown trout captured in Lake Ontario on a recreational fishing charter during 2022, both of which had multiple parasitic sea lampreys attached. Sea lamprey populations increased dramatically in Lake Ontario following two years of reduced control effort. Credits: Captain Andy Bliss, used with permission.

[Alt text: A collage of two photos. The photo on the left shows a brown trout hanging from a pliers that has two parasitic sea lampreys attached to its side. The background shows the side of a boat, fishing poles, and a large body of water. The photo on the right shows a fish lying on the bottom of a boat with three parasitic sea lampreys attached and a fourth parasitic sea lamprey nearby.]

The Great Lakes Fishery Commission is an international organization established by the United States and Canada through the 1954 Convention on Great Lakes Fisheries. The commission has the responsibility to promote measures that protect and improve the multi-billion-dollar Great Lakes fishery. Visit online at www.glfc.org

-30-