STATUS OF SEA LAMPREY CONTROL IN LAKE ERIE

Adult Sea Lamprey:

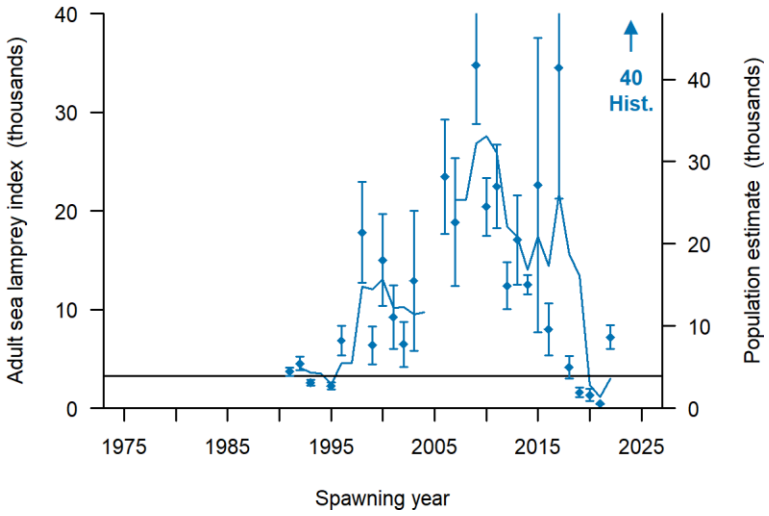

Figure 1. Index estimates with 95% confidence intervals (vertical bars) of adult sea lampreys, including historic pre-control abundance (as a population estimate) and the three-year moving average (line). The population estimate scale (right vertical axis) is based on the index-to-PE conversion factor of 1.2. The adult index in 2022 was 7,200 with 95% confidence interval (6,000-8,400). The three-year (2020-2022) average of 3,000 met the target of 3,300. The index target was estimated as the mean of indices during a period with acceptable marking rates (1991-1995).

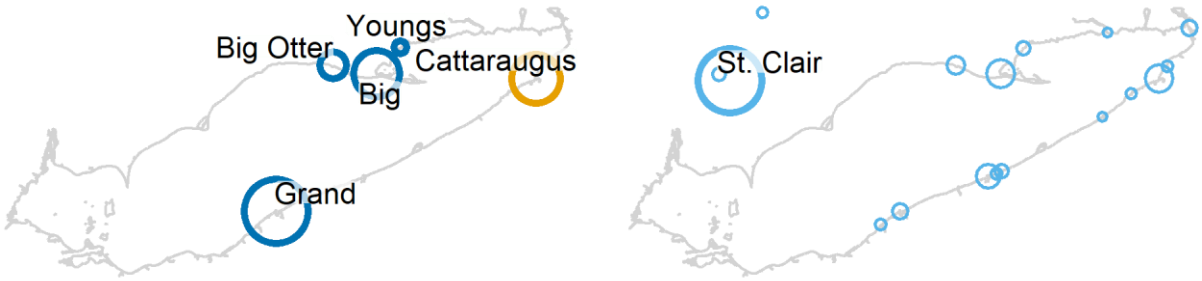

Figure 2. LEFT: Estimated index of adult sea lampreys during the spring spawning migration, 2022. Circle size corresponds to estimated number of adults from mark-recapture studies (blue) and model predictions (orange). All index streams are labelled. RIGHT: Maximum estimated number of larval sea lampreys in each stream surveyed during 1995-2012. Tributaries composing over half of the estimated maximum lake-wide larval population are identified (St. Clair 920,000).

- Black River – The MIDNR and Service-Alpena Fish and Wildlife Conservation Office completed a feasibility study in 2019 for the removal of Wingford Dam. Project partners are currently working to find a mutually beneficial solution to allow fish passage while preventing sea lamprey escapement. Larval assessment data collected for the upper Black River is currently being analyzed to determine the sea lamprey production potential for this area should escapement occur.
- Clinton River – The MIDNR and Clinton River Watershed Council collaborated with the Service to repair a bypass around the Yates Mill Dam. Since the repair, the bypass has reopened. A stream geomorphic study was recently conducted upstream of the dam, which provided recommendations for river channel modifications to

alleviate future bypass channel formation. Project partners are working together to review the recommendations and plan a course of action.

Lake Trout Marking and Relative Abundance:

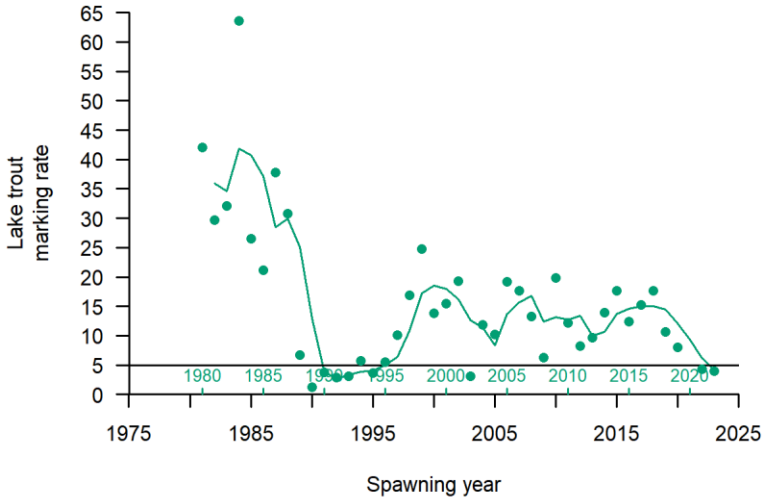

Figure 3. Number of A1-A3 marks per 100 lake trout > 532 mm from standardized assessments plotted against the sea lamprey spawning year, including the three-year moving average (line). The three-year (spawning years 2021-2023) average marking rate of 4.2 met the target of 5 A1-A3 marks per 100 lake trout > 532 mm (horizontal line). A second x-axis shows the year the lake trout were surveyed.

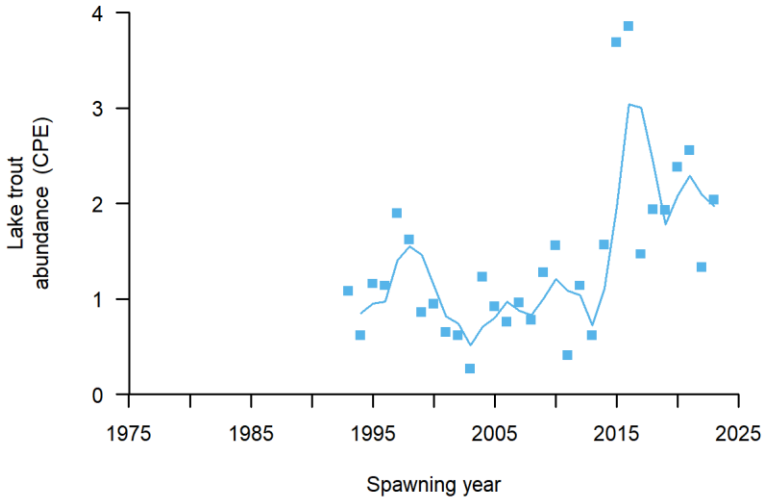

Figure 4. Lake trout relative abundance from standardized spring surveys plotted against sea lamprey spawning year, including the three-year moving average (line). CPE = number per lift of lean lake trout age 5 and older.

Lampricide Control - Adults vs. Field Days, TFM, and Bayluscide:

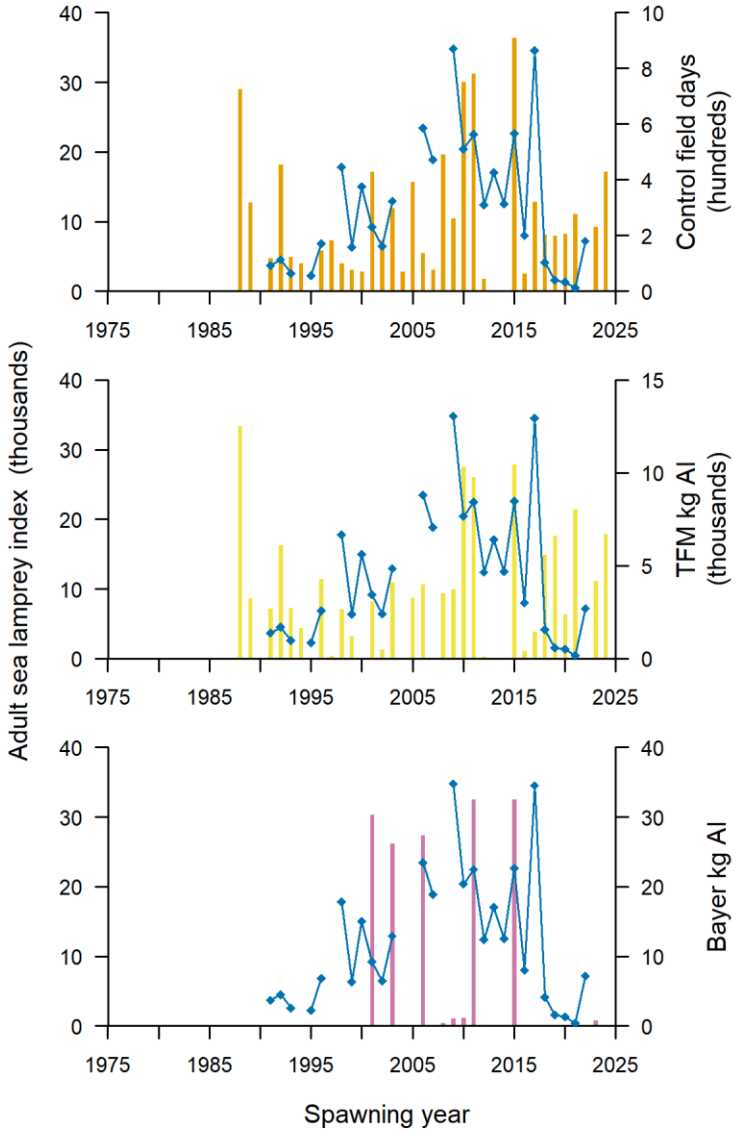

Figure 5. Index of adult sea lampreys (blue lines) and number of control field days (orange bars), TFM used (kg active ingredient; yellow bars), and Bayluscide used (kg active ingredient; purple bars). Field days, TFM, and Bayluscide are offset by 2 years (e.g., field days, TFM, and Bayluscide applied during 1985 is plotted on the 1987 spawning year, when the treatment effect would first be observed in adult sea lamprey populations).

- Lampricide treatments were completed in 3 tributaries (0 Canada, 3 U.S.)