

STATUS OF SEA LAMPREY CONTROL IN LAKE MICHIGAN

Adult Sea Lamprey:

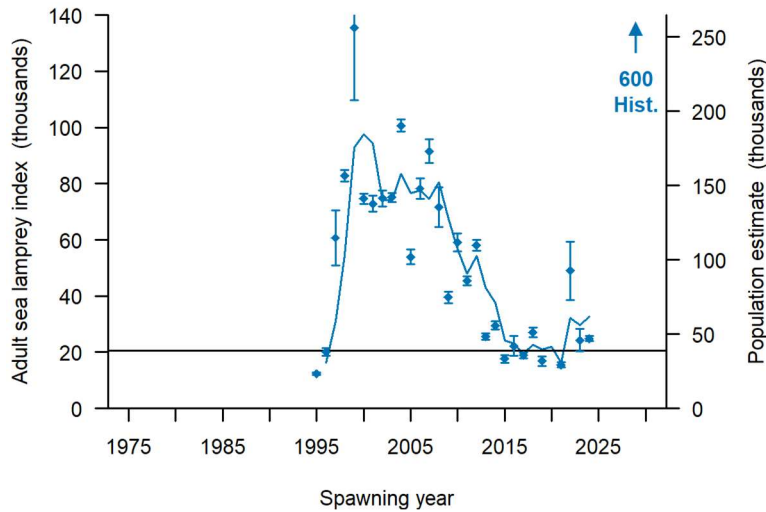


Figure 1. Index estimates with 95% confidence intervals (vertical bars) of adult sea lampreys, including historic pre-control abundance (as a population estimate) and the three-year moving average (line). The population estimate scale (right vertical axis) is based on the index-to-PE conversion factor of 1.89. The adult index in 2024 was 25,000 with 95% confidence interval (24,000-26,000). The three-year (2022-2024) average of 33,000 was above the target of 21,000. The new index target (2024) was estimated as the mean of indices during a period with acceptable marking rates (2015-2019)

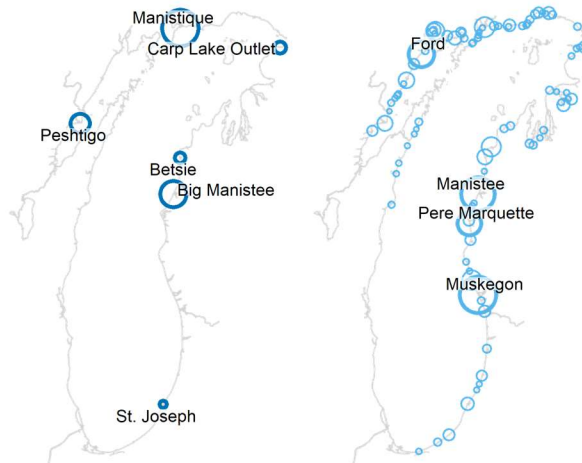


Figure 2. LEFT: Estimated index of adult sea lampreys during the spring spawning migration, 2024. Circle size corresponds to estimated number of adults from mark-recapture studies (blue) and model predictions (orange). All index streams are labelled. RIGHT: Maximum estimated number of larval sea lampreys in each stream surveyed during 1995-2012. Tributaries composing over half of the estimated maximum lake-wide larval population are identified (Muskegon 4,500,000; Manistee 3,600,000; Ford 1,800,000; Pere Marquette 1,400,000).

- The Sea Lamprey Control Program has adjusted the Lake Michigan adult index target from 34,982 to 20,526. This change was made based on the average sea lamprey abundance estimate from 2015-2019, when wounding was near the target of 5 wounds/100 lake trout.
- The stream specific estimates for the Manistique and Big Manistee Rivers contributed most to the lake-wide index estimate in 2024 (45% and 22% respectively).
- Sea lampreys were documented upstream of the sea lamprey barrier on the Keweenaw River.

Lake Trout Marking and Relative Abundance:

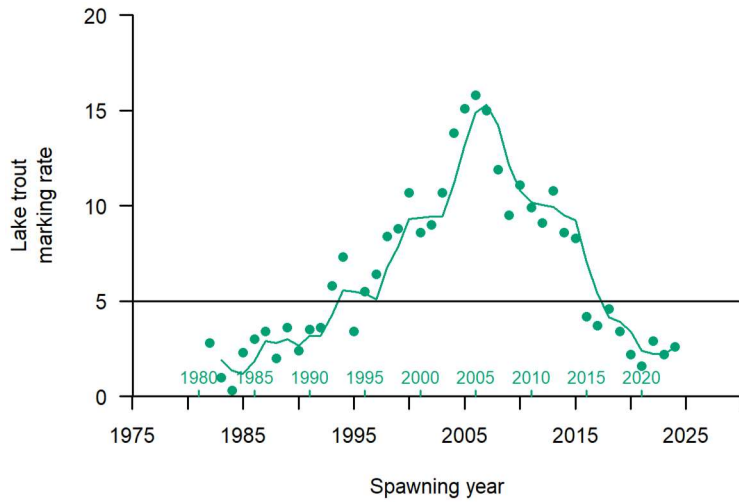


Figure 3. Number of A1-A3 marks per 100 lake trout > 532 mm from standardized assessments during August-November plotted against the sea lamprey spawning year, including the three-year moving average (line). The three-year (spawning years 2022-2024) average marking rate of 2.6 met the target of 5 A1-A3 marks per 100 lake trout > 532 mm (horizontal line). A second x-axis shows the year the lake trout were surveyed.

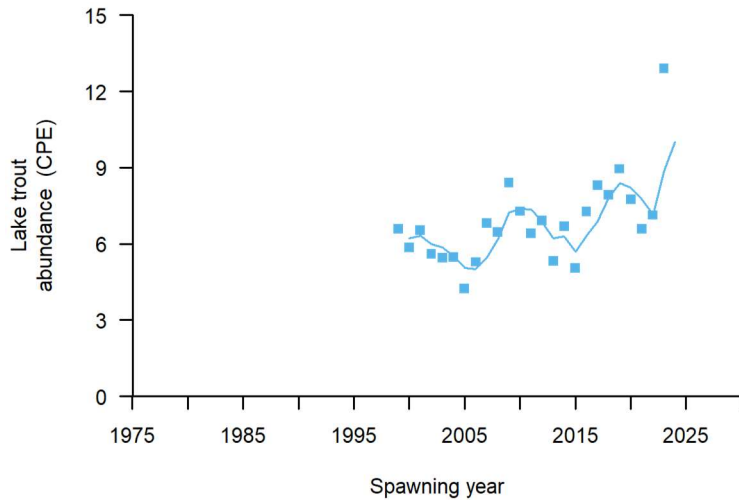


Figure 4. Lake trout relative abundance plotted against sea lamprey spawning year, including the three-year moving average (line). CPE = fish/1000'/net night of lean lake trout > 532 mm (21") total length caught in the Lake Wide Assessment Plan nets (the plan began in the late 1990s).

- Marking rates in Michigan continue to be low.
- Lake trout CPE data was not available at the time of report generation.

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

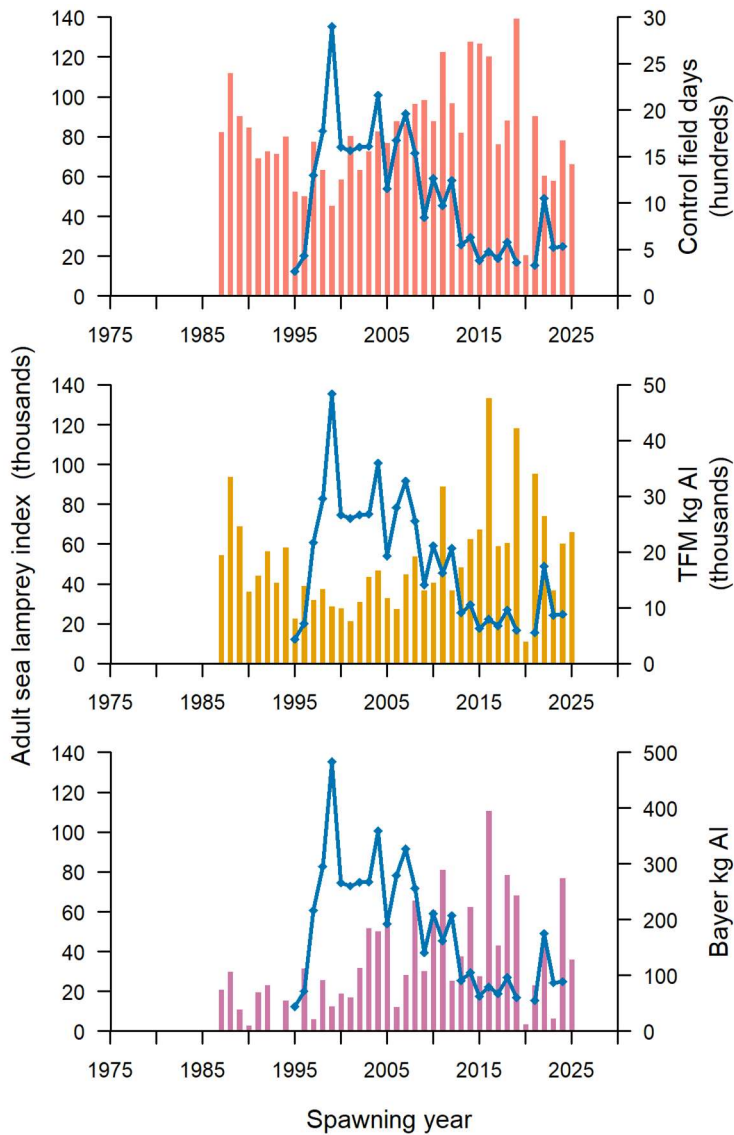


Figure 5. Index of adult sea lampreys (blue lines) and number of control field days (salmon colored bars), TFM used (kg active ingredient; orange bars), and Bayluscide used (kg active ingredient; purple bars). Field days, TFM, and Bayluscide are offset by 2 years (e.g., field days, TFM, and Bayluscide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