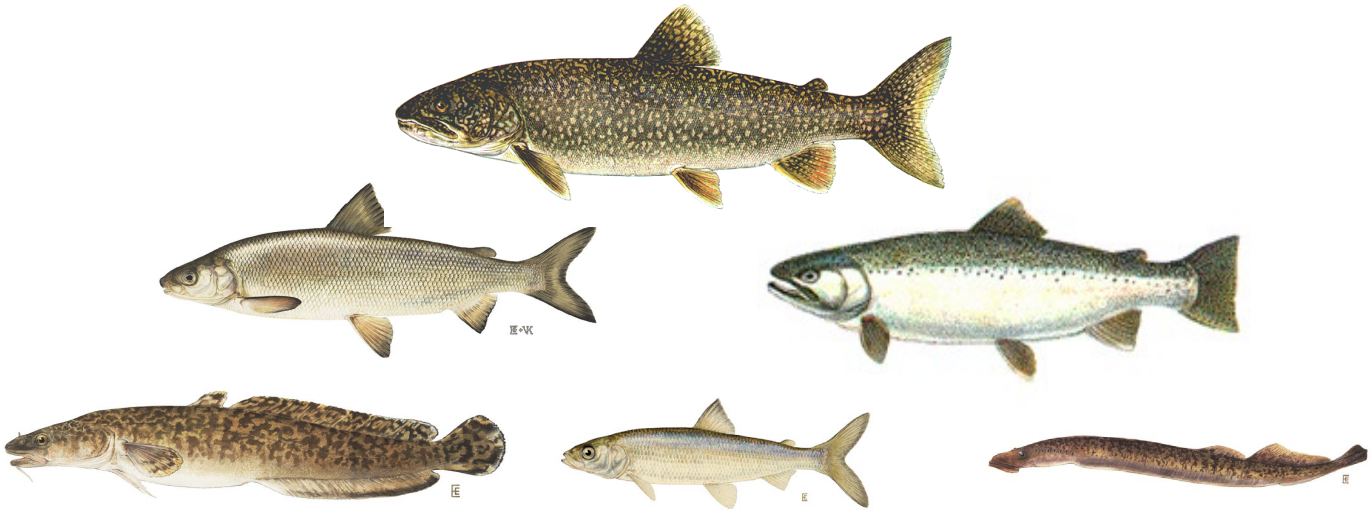
2025 Report of the Lake Erie Coldwater Task Group

March 2026

Presented to:
Standing Technical Committee
Lake Erie Committee
Great Lakes Fishery Commission



CWTG Members:

Tom MacDougall	Ontario Ministry of Natural Resources (Co-Chair)
Pascal Wilkins	New York Department of Environmental Conservation (Co-Chair)
John Buszkiewicz	Michigan Department of Natural Resources
Justin Chiotti	United States Fish and Wildlife Service
Andy Cook	Ontario Ministry of Natural Resources
Colin Farrel	United States Fish and Wildlife Service
Chris Eilers	United States Fish and Wildlife Service
Mark Haffley	Pennsylvania Fish and Boat Commission
Jorden McKenna	United States Fish and Wildlife Service
Amanda Popovich	Ohio Division of Natural Resources
James Roberts	United States Geological Survey
Joseph Schmitt	United States Geological Survey
Lexi Sumner	Department of Fisheries and Oceans, Canada
Eric Weimer	Ohio Division of Natural Resources

Note: Data contained in this report is considered provisional. Use of data for external publication must be approved by the CWTG; please contact the CWTG Co-chairs for permission.

Citation:

Coldwater Task Group. 2026. 2025 Report of the Lake Erie Coldwater Task Group, March 2026. Presented to the Standing Technical Committee, Lake Erie Committee of the Great Lakes Fishery Commission, Ann Arbor, Michigan, USA.

Cover Art and Line Drawings from:

Raver, Duane. 1999. Duane Raver Art. U.S. Fish and Wildlife Service. Shepherdstown, West Virginia, USA.

Kraft, C.E., D.M. Carlson, and M. Carlson. 2006. Inland *Fishes of New York (Online)*, Version 4.0. Department of Natural Resources, Cornell University, and the New York State Department of Environmental Conservation.

Table of Contents

COLDWATER TASK GROUP
EXECUTIVE SUMMARY REPORT
MARCH 2026

Lake Erie Committee

REPRESENTING THE FISHERY MANAGEMENT AGENCIES OF LAKE ERIE AND LAKE ST. CLAIR

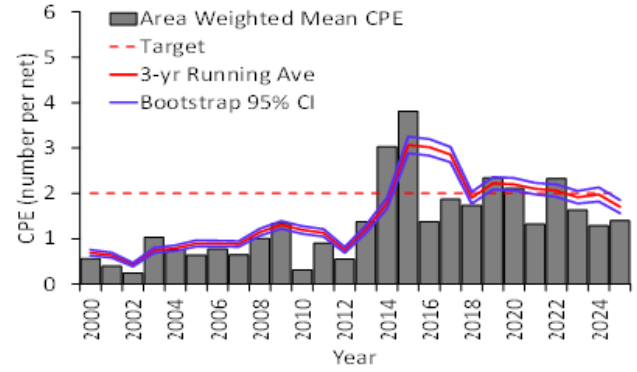
Introduction

This year's Lake Erie Committee (LEC) Coldwater Task Group (CWTG) has produced an Executive Summary Report encapsulating information from the CWTG annual report. Three charges were addressed by the CWTG during 2025: (1) Report on the status of the cold-water fish community, (2) Participate in the Integrated Management of Sea Lamprey Process on Lake Erie, outline and prescribe the needs of the Lake Erie Sea Lamprey management program, and (3) Maintain of an electronic database of Lake Erie salmonid stocking information. The complete report is available from the Great Lakes Fishery Commission's Lake Erie Committee Coldwater Task Group website at http://www.glfc.org/lake-erie-committee.php or upon request from an LEC or CWTG representative.

Lake Trout

A total of 230 lake trout were collected in the Coldwater Assessment Survey in 2025. Adult (age 5+) relative abundance in all nets increased to 1.40 fish per lift, below the target of 2.0 described in the 2021 Lake Trout Management Plan. There were 22 age classes and four strains captured in 2025. Lake trout ages 4, and 5 were the dominate cohorts. Ages 3,10,13,15,16, and 17 also contributed. Lake trout older than age-10 continue to increase in contribution and comprised 50% of the total catch. Finger Lakes and Lake Champlain strains comprised the majority of the population. Slate Island strain, last stocked in 2021, contributed strongly as 5-year old fish. The Partnership Survey changed design in 2024 targeting waters less than 30m in depth and no longer fished the Pennsylvania Ridge.

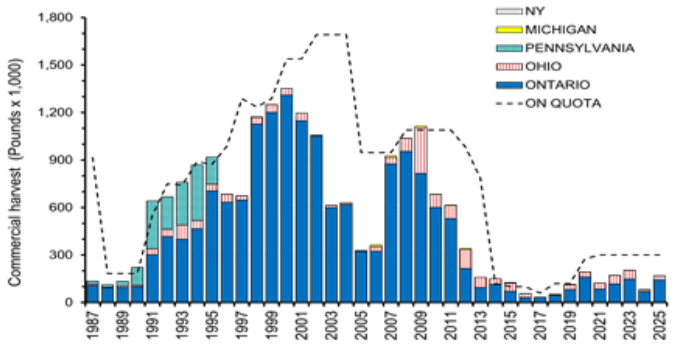
LT relative adult abundance



Lake Whitefish

Lake whitefish harvest in 2025 was 167,855 pounds, distributed between Ontario (85%), Ohio (15%), and Pennsylvania (<1%). Harvest increased by 107% from 2024 but remains low compared to previous decades. Gillnet fishery age composition ranged from ages 2 to 24 with ages 6, 10, 5, and 4 representing the majority of the harvest. Relative to recent decades, lake whitefish survey and fishery status indicators in 2025 were moderate or better. Assessment surveys caught lake whitefish from ages 1 to 24, with age compositions that partially overlapped the 2025 gill net fishery. Bottom trawl and gillnet survey indices forecast modest to good recruitment of age 3 lake whitefish in 2026 and 2027.

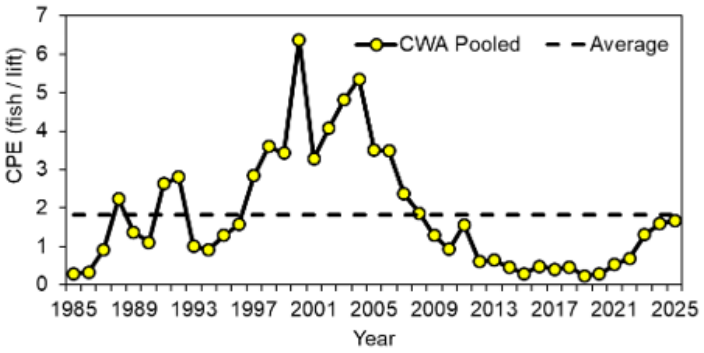
LWF commercial harvest



Burbot

Total commercial catch of burbot in Lake Erie in 2025 was 2,950 pounds. All was incidental. Burbot abundance and biomass indices from annual assessment surveys reached a time series low in 2019. Since then, catch rates in the Coldwater Assessment Survey have increased annually. The 2025 burbot catch rate 1.67 fish/lift, approached the time series average and was the highest catch rate since 2008. Burbot from this survey ranged in age from 2 to 19 with 5-yr old fish being most abundant. Round goby was the dominant prey item in burbot diets in 2025, while smelt were observed less frequently.

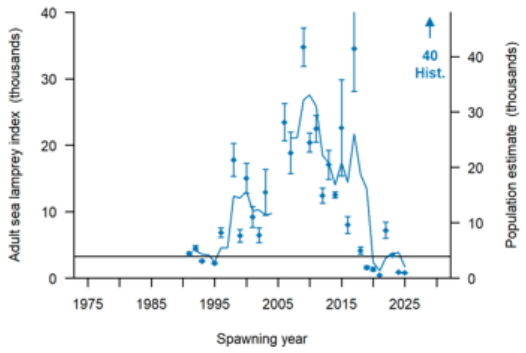
BUR relative abundance



Sea Lamprey

The A1-A3 (fresh) wounding rate on lake trout over 532 mm was 5.6 wounds per 100 fish in 2025. This is above the target rate of 5.0 wounds per 100 fish. Large lake trout continue to be the preferred targets for sea lamprey in Lake Erie. The Index of Adult Sea Lamprey Abundance (800) represents a decrease from last year and the three-year running average of the index (1700) was below the target of 3,300. Six tributary streams received lampricide treatments in 2025, three in Canada and three in the US.

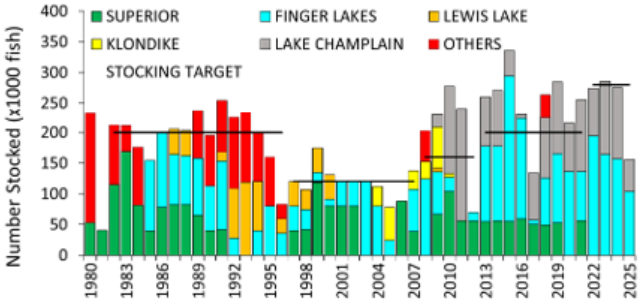
SL indices of status



Lake Erie Salmonid Stocking

A total of 1,449,300 yearling salmonids were stocked in Lake Erie in 2025, which was below the long-term average (1990-2024). Lake trout stocking was below the goal of 280,000 goal, and two different strains were stocked in 2025. By species, there were 155,944 yearling lake trout stocked in the east basin of Lake Erie, 41,944 brown trout stocked in Pennsylvania waters, and 1,251,412 rainbow/steelhead trout stocked across all five State and Provincial jurisdictional waters.

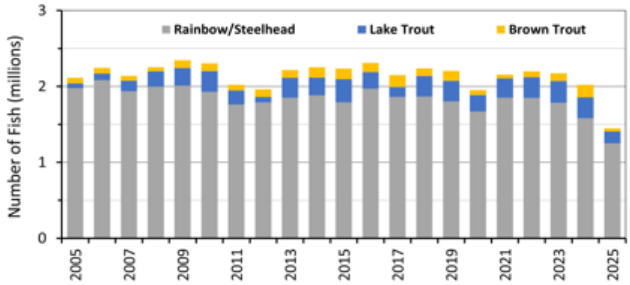
LT stocking



Steelhead

The summary of steelhead stocking in Lake Erie by jurisdictional waters for 2025 is: Pennsylvania (497,648; 39.8%), Ohio (464,538; 37.1%), New York (191,150; 15.3%), Michigan (49,785; 3.8%), and Ontario (48,291; 4%). Total steelhead stocking in 2025 (1.45 million) was below the long-term average. Annual stocking numbers have been consistently in the 1.5-2.0 million fish range since 1993. The summer open lake steelhead harvest was estimated at 9,563 steelhead across New York, Pennsylvania, Ohio, and Michigan which was below the long-term average harvest of 22,019. Tributary angler surveys, represented the majority (>90%) of the targeted fishery effort for steelhead. Catch rates remain high and there are planned creel surveys in the future in most jurisdictions.

Salmonid stocking



CHARGE 1: Coordinate annual standardized cold-water assessment among all eastern basin agencies and report upon the status of the cold-water fish community

Pascal Wilkins (NYSDEC) and Tom MacDougall (OMNR) Mark Haffley (PAFBC), Joseph Schmitt (USGS), Arthur Bonsal (OMNR)

East Basin Coldwater Assessment Program

Two fishery independent gillnet surveys are conducted each year in the eastern basin of the lake during thermal stratification: the inter-agency August Coldwater Assessment (hereafter referred to as the "Coldwater Assessment Survey") in New York, Ontario, and Pennsylvania waters of the eastern basin, and the Ontario Partnership Index Fishing Program (hereafter referred to as the "Partnership Survey") in Ontario waters.

The Coldwater Assessment Survey was redesigned in 2020 to provide better coverage of east basin cold-water habitat, decrease the number of required samples, and maintain comparable metrics between survey methodologies. The previous approach (1986–2019) utilized a stratified, random transect design for locating bottom set gillnets during the month of August. Briefly, 5 gangs of gillnet were set, parallel to the depth contour, at successively deeper locations, starting at a location prescribed relative to the 10ºC isotherm. Details of the design and net configurations can be found in earlier versions of this report. This survey design resulted in over-sampling of the area directly adjacent to the 10ºC isotherm and a complete lack of sampling in offshore waters.

The new survey used an analysis of catch-per-effort (CPE) trends for Lake Trout, Burbot, and Lake Whitefish to justify reducing the number of standard set gillnet gangs from five to two (details; CWTG 2020); CPE estimates generated using only catches from net #1 and net #3 were shown to be comparable to those generated from the complete set of 5, over the complete survey time series.

The new survey continues to occur during August each year following stratification, covers a similar sampling area, and employs the same gillnet configuration previously used. In addition to the transect approach (now using only two nets; #1 and #3 locations), a 2.5-minute grid system is used for choosing additional randomly selected netting locations, primarily in deeper waters. Netting sites are divided into two groups – standard assessment nets and offshore assessment nets.

Standard assessment nets are set in grids located in similar areas to the previous assessment survey. Two net gangs in each randomly chosen standard assessment grid are set as follows: net #1 is located 8–10 ft. deeper than the 10ºC isotherm, and net #3 is located 10 ft deeper than this. If the depth and temperature criteria were to fall outside of the standard assessment grid (i.e., shallower, or deeper), then nets would be moved to the adjacent grid to the north or south following the previous protocols. The nets are set parallel to the shoreline but otherwise can be placed anywhere within the grid following the traditional protocol for temperature and depth.

Offshore (Deep) assessment nets are set in randomly selected offshore grids. Nets in these areas are set within the selected grid in a direction consistent with the bottom contour. Targeted effort varies for each jurisdiction (NY: 16 standard, 16 offshore; PA: 12 standard, 12 offshore; ON East and ON West: 12 standard, 13 offshore each). Altogether, a total of 52 standard assessment nets and 54 offshore assessment nets are targeted for a complete survey each year. Sampling was conducted in all jurisdictions in 2025 (Figure 1). Sampling effort included 52 standard assessment nets and 44 offshore assessment nets (96 sets total). Abundance data from six standard nets in NY waters was excluded in 2025 due to temperatures exceeding 10ºC during the fishing period.

In 2020 through 2023, for the purposes of comparing relative abundance of Lake Trout, Burbot, and Lake Whitefish, to earlier survey catch rates, only data from standard assessment nets (nets #1 and #3) was used. Subsequent examination of catch rates in offshore nets suggested that, for some species, incorporation of this additional data into abundance estimates would be prudent. Following consultation with LEC in March 2024, it was decided that going forward, data from all nets would be utilized for Lake Trout and Burbot catch rate analysis. Catch rates for Lake Whitefish, which are caught in offshore nets less frequently, continue to be calculated using only standard net catches. Unless otherwise stated, for all metrics other than relative abundance, data from all collected fish are used, regardless of sampling location. Biased sets due to temperature shifts, or other issues are deleted from abundance index calculations but are otherwise used for age, growth, diet, and wounding statistics.

The Partnership Survey is a lake wide gillnet survey of Canadian waters that has provided a spatially robust assessment of fish species abundance and distribution since 1989. The Partnership Survey uses suspended and bottom set gillnets. While most catches of cold-water species occur in eastern waters during thermal stratification in September (Figure 1), some information also comes from the Central Basin of the lake following turnover. A change in study design, adopted in 2024, limited the ability of the survey to inform the complete set of metrics used previously for Coldwater Assessment. No partnership nets were set in waters deeper than 30 meters, limiting catches of Lake Trout and Burbot, and to a lesser extent, Lake Whitefish. Lake Whitefish metrics from the partnership survey will be reported with the caveat that additional uncertainty exists following the new survey design.

All sampled Lake Trout are examined for total length, weight, sex, maturity, fin clips, and wounds by Sea Lamprey. Snouts from each Lake Trout are retained, and coded-wire tags (CWT) are extracted in the laboratory to accurately determine age and genetic strain. Otoliths and genetic samples are also retained when the fish is not tagged (i.e., not fin clipped or CWT). Stomach contents, if examined, are usually collected as on-site enumeration or from preserved samples.

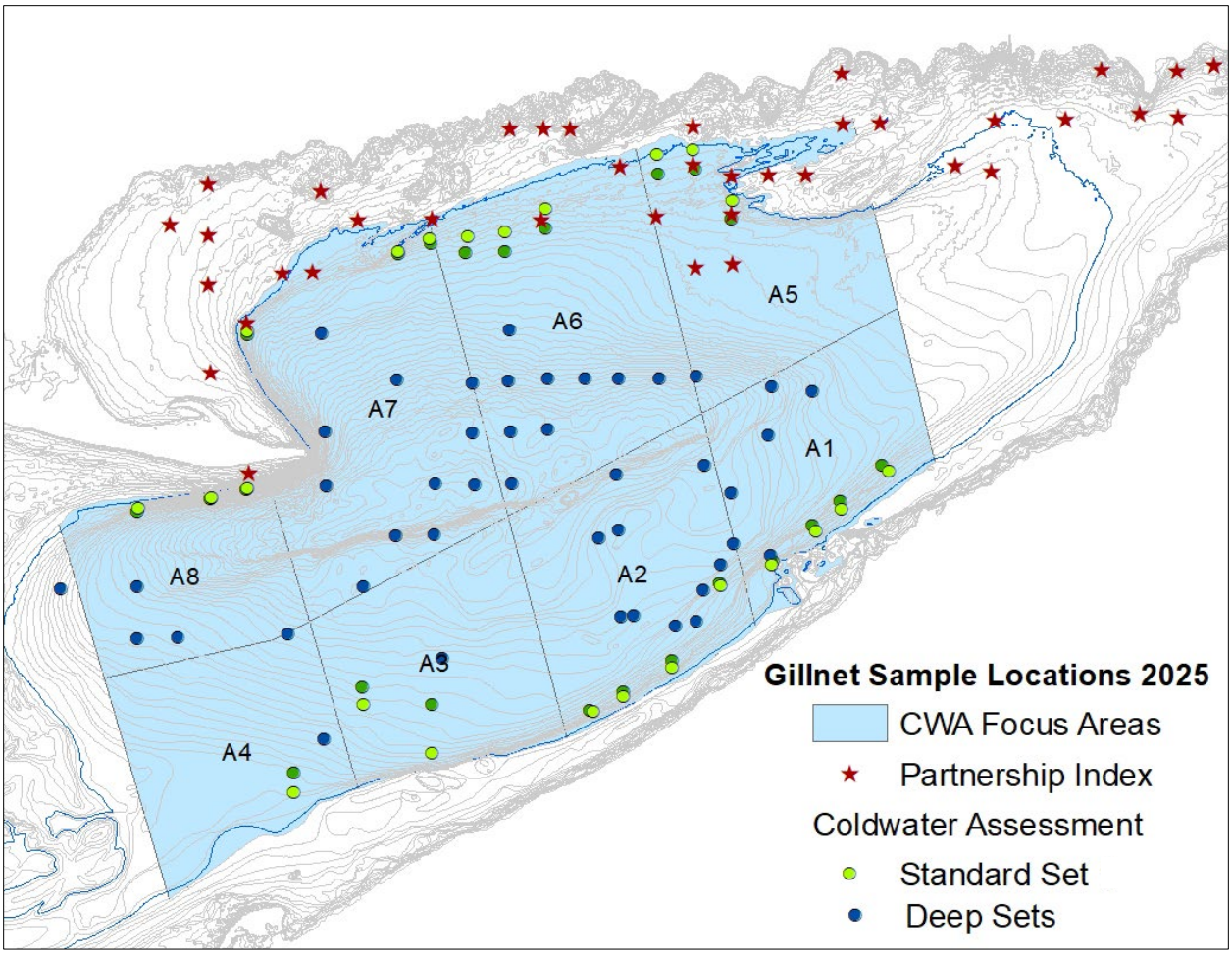


FIGURE 1. Locations of gillnets set for assessment of cold-water species during thermal stratification in the eastern basin of Lake Erie, 2025. Coldwater Assessment Survey sites are indicated with circles (green – standard sets; blue – offshore sets) within survey areas A1-A8 (blue polygons bounded by the blue 20m depth contour. Partnership Assessment Survey sites are indicated with red stars.

1.1 Report on the status of Lake Whitefish

Megan Belore, Tom MacDougall, Andy Cook (OMNR), Brian Schmidt, Amanda Popovich (ODNR), Joseph Schmitt (USGS), Mark Haffley (PFBC), (OMNR), Pascal Wilkins (NYDEC)

Commercial Harvest

The total harvest of Lake Whitefish in Lake Erie during 2025 was 167,855 pounds (Figure 1.1.1). Ontario accounted for 85% of the lake-wide total, harvesting 142,606 pounds, followed by Ohio (15%; 24,759 pounds) and Pennsylvania (0.3%, 490 lbs). New York and Michigan did not harvest Lake Whitefish in 2025 (Figure 1.1.2). Total Lake Whitefish harvest in 2025 more than doubled from 2024. Lake Whitefish harvest in Ontario increased 89% from 2024 while Ohio's harvest increased by 94%. Lake Whitefish harvest in Pennsylvania decreased by 75% from 2024.

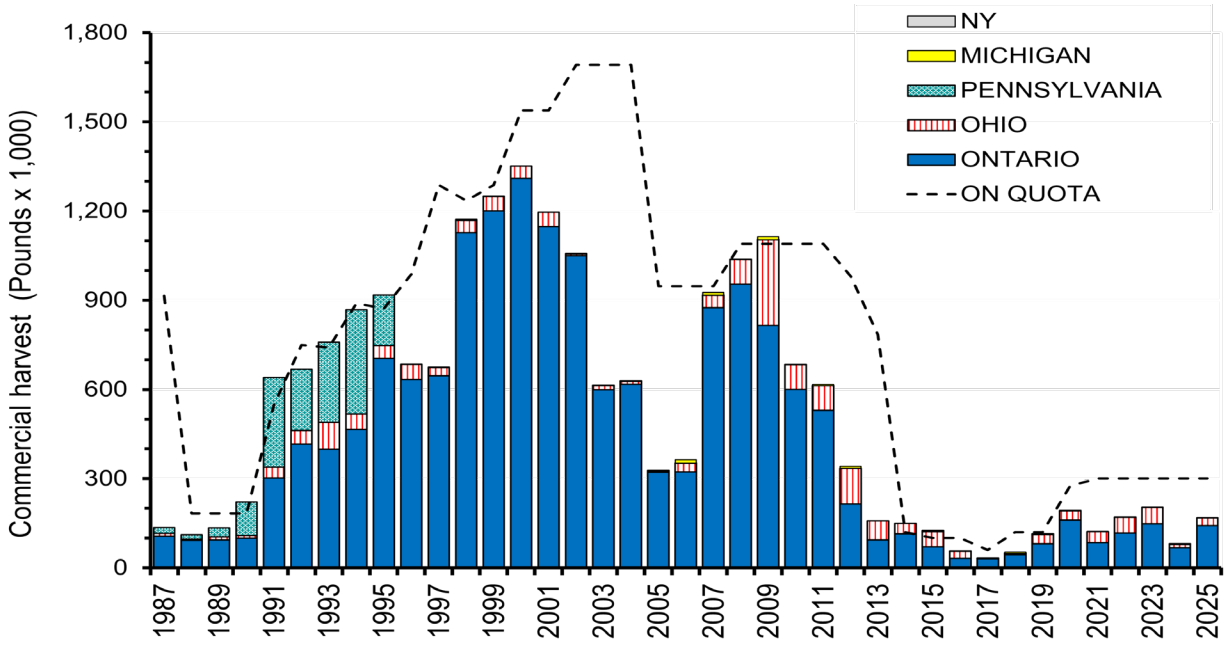


FIGURE 1.1.1. Lake Whitefish total harvest from 1987–2025 by jurisdiction in Lake Erie. Pennsylvania ceased gillnetting in 1996. Ontario quota is presented as a dashed line.

Ontario's commercial fishers harvested 48% of quota (300,000 pounds) in 2025. Most (95%) of Ontario's 2025 Lake Whitefish harvest was from gillnets with 5% from commercial trawls. The largest fraction of Ontario's Lake Whitefish harvest (79%) was caught in the eastern basin (Ontario-Erie statistical districts OE-4 and OE-5) followed by the western basin (OE-1; 13%), with the remaining harvest occurring in the west-central (OE-2; 6%) and east-central (OE-3; 2%) basins (Figure 1.1.2). Maximum harvest in Ontario waters during 2025 was distributed between Long Point and Port Maitland (Figure 1.1.2). Harvest in this area from September and October represented 74% of Ontario's total Lake Whitefish harvest. Peak harvests occurred in OE-5 during October (45,133 pounds) and in OE-4 during September (39,454 pounds).

In 2025 some commercial gillnet effort was targeted at Lake Whitefish, most in the eastern basin in September and October, with some occurring in the west basin in December. Lake-wide, Ontario's Lake Whitefish harvest came from fisheries targeting Lake Whitefish (50%), walleye (43%), rainbow smelt

(5%), White Bass (0.5%), White Perch (0.7%) and Yellow Perch (0.61%). In addition, five tagged Lake Whitefish were surrendered to MNR from commercial fisheries in 2025.

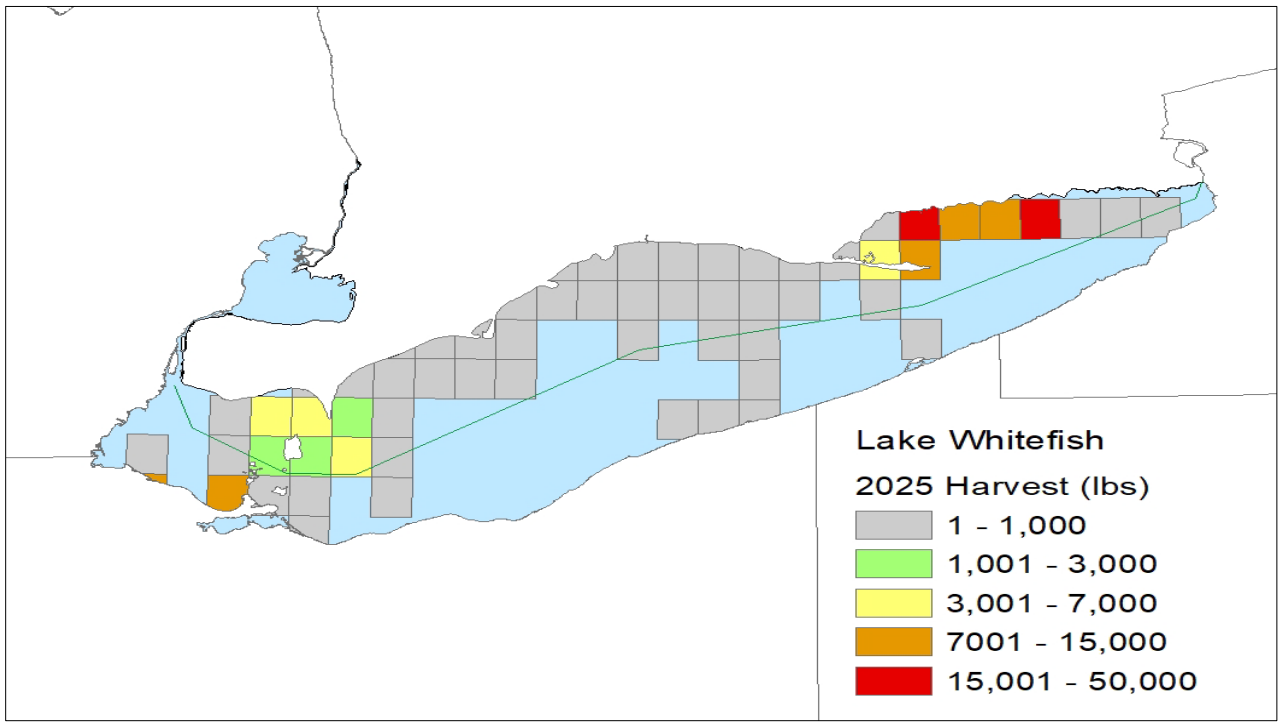


FIGURE 1.1.2. Commercial harvest of Lake Whitefish (pounds) in Lake Erie during 2025 by 10-minute grids.

Catch rates for the commercial harvest were calculated based on all large mesh effort (>=76 mm or 3") which resulted in Lake Whitefish in the catch (kg/km; excluding effort with zero catches). The catch rate in 2025 was 5.22 kg/km representing a (17%) increase from 2024 (4.45 kg/km), but which was low relative to the time series average (23.3 kg/km; 1998–2025).

Lake Whitefish harvest from commercial trap nets in Ohio waters during 2025 was 24,759 pounds, distributed among the west (O-1, 98%) and central basin (O-2 & O-3, 2%). The majority (93%) of Lake Whitefish harvest in Ohio during 2025 was taken from grids 902, and 904 (Figure 1.1.2). Lake Whitefish were harvested from 1,088 trap net lifts (zero catches excluded) in 2025, with lifts distributed among District 1 (O-1) (66%), District 2 (O-2) (18%) and District 3 (O-3) (15%), respectively. Ohio trap net harvest was greatest in November (95% or 23,602 lbs.) followed by spring (March – May; 952 lbs or 34%) during 2025. The trap net catch rate (22.8 lbs. / lift) in 2025 was 58% higher than the 2024 rate but below the time series mean. Lake Whitefish harvest in Pennsylvania waters totaled 490 pounds in 2025, with harvest confined to the deep channel north of Pennsylvania (Figure 1.1.2). Lake Whitefish catch rates in Pennsylvania waters (61 lbs./ lift) declined by 41% relative to 2024.

Ontario's west basin fall Lake Whitefish harvest in 2025 was comprised of ages 2 to 24 with age 6 (2019 cohort), 10 (2015 cohort), 5 (2020 cohort) and 4 (2021 cohort) accounting for most of Lake Whitefish harvested (Figure 1.1.3). The age composition of Lake Whitefish harvested in U.S. waters was not assessed in 2025. The landed value of Whitefish in Ontario during 2025 was $294,510 or $1.90 / lb. CDN. The landed weight of roe from Ontario's 2025 Lake Whitefish fishery was 526 pounds, collected

from the east basin in November (20%) and October (80%). The approximate landed value of the roe was $1,967 or $ 2.38 / lb. CDN.

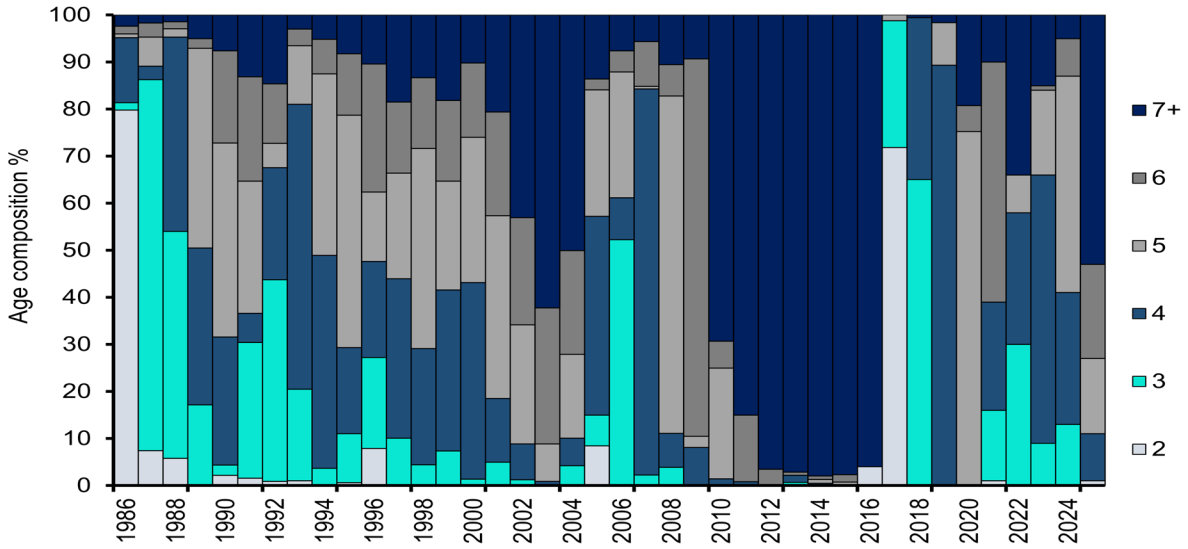


FIGURE 1.1.3. Ontario fall commercial Lake Whitefish harvest age composition in statistical district 1, 1986-2025, from effort with gillnets ≥3 inches, October to December. N=100 in 2025. Ages 7+ includes Whitefish ages 7 and older.

Assessment Surveys

Gillnet assessment surveys of Lake Whitefish in Lake Erie include Coldwater Assessment (CWA) netting in New York, Ontario and Pennsylvania waters of the east basin and Ontario's Partnership Survey covering the east, and central basins. Partnership Survey catch rates were pooled despite differences in thermal stratification, and migratory behavior when east and central basin surveys occur. Partnership survey catch rates in 2025 were based on 111 sites with 222 gangs fished on bottom and at standard canned depths. A survey design change was implemented in 2024 with the objective of improving the precision of yellow perch assessment in the east basin. A re-distribution of survey effort resulted in the elimination of the Pennsylvania Ridge survey and east basin survey effort at depths > 30 m while increasing effort in the east basin survey at depth strata ≤ 30 m.

Lake Whitefish catch rates in CWA nets fished on bottom at standard (thermocline interface) stations (44 lifts) during 2025 (1.61 fish/lift) decreased from 2024 (2.36 fish/lift) and was 63rd percentile in the 40-year time series 1985–2025 (Figure 1.1.4). Lake Whitefish aged in CWA surveys ranged in age from 0 to 24 with ages 2, 6, 4, and 10 most abundant (Figure 1.1.5). Lake Whitefish mean age in CWA was 6.5 in 2025.

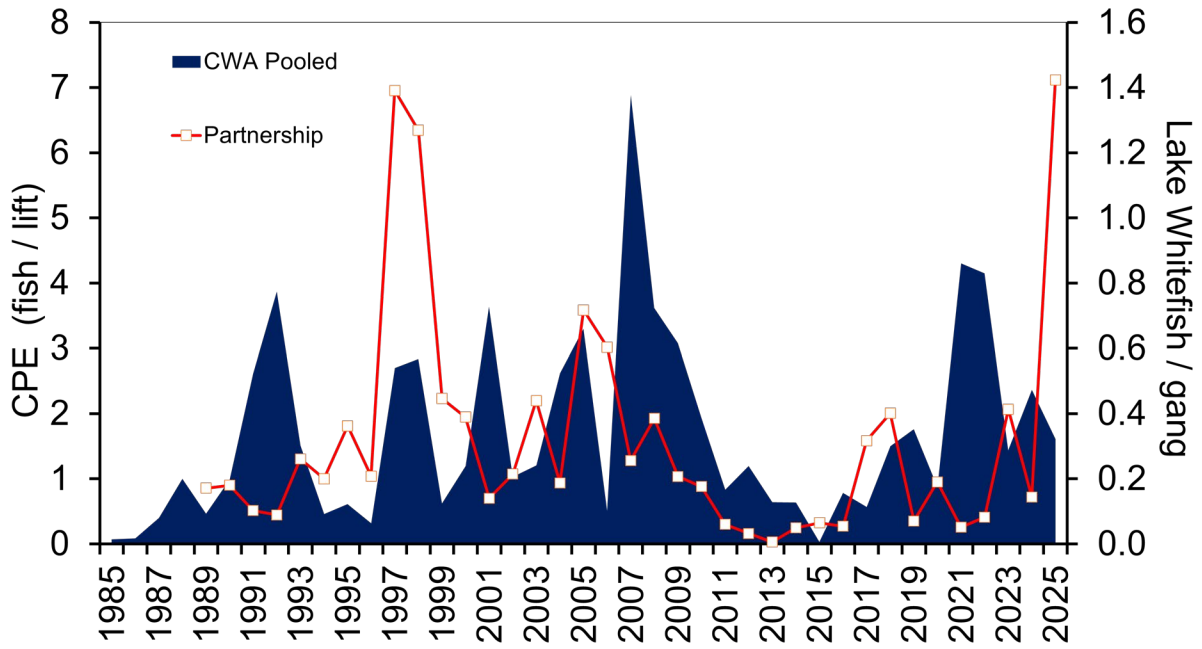


FIGURE 1.1.4. Catch per effort (number fish/lift) of Lake Whitefish caught in standard Coldwater Assessment Survey gillnets (CWA) in New York, Pennsylvania, and Ontario waters. Partnership index catch rates (LWF/gang) for all ages (line with squares) (second axis).

Partnership survey catch rates of Lake Whitefish increased from 0.14 in 2024 to 1.42 fish / gang in 2025, a time series high (Figure 1.1.4). The age composition in Partnership surveys ranged from ages 1 to 24, with age-2 (22%; 2023-year class) most abundant (Figure 1.1.5). The mean age of Lake Whitefish caught in Partnership surveys in 2025 was 6.2. A total of 158 Lake Whitefish were caught Lake-wide with catches distributed among the east (154), east-central (1), and west-central (3) basin surveys.

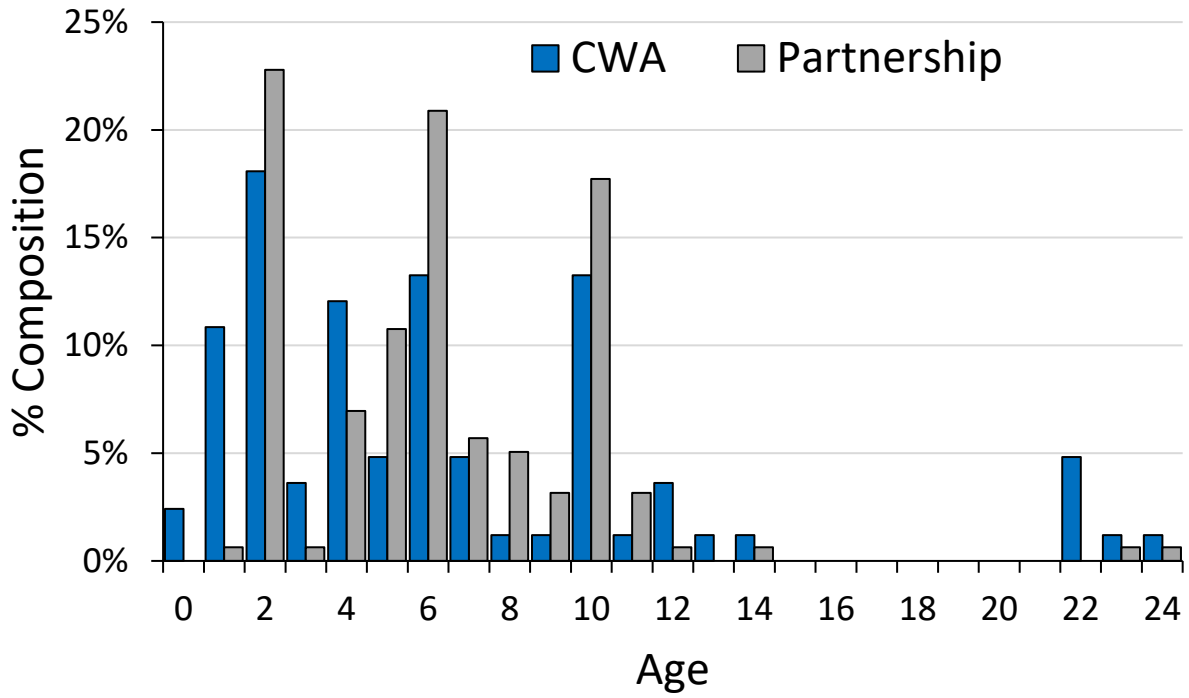


FIGURE 1.1.5. Lake Whitefish age composition in the coldwater assessment (CWA) and partnership gillnet surveys during 2024. Sample sizes were 83 and 158 respectively. Partnership surveys include west-central, east-central and east basins.

Trawl surveys in Ohio waters of the central basin of Lake Erie (Ohio Districts 2 and 3) encounter juvenile Lake Whitefish. Ages 0 and 1 June and October catch rates (O-2 and O-3 combined) are presented in Figures 1.1.8 and 1.1.9 as indicators of year class strength. In 2025, the age-0 catch rate in the central basin was above average in June (0.84/ ha) whereas no age-0 Whitefish were caught in October trawls (Figure 1.1.6). New York's east basin age-0 Lake Whitefish trawl index (0.68/ha) in 2025 was above the 33-year time series mean (0.40/ha) (Figure 1.1.6).

Age-1 Lake Whitefish were caught at low densities (0.02 / ha,) during June whereas none were caught during October in Ohio bottom trawls (Figure 1.1.7). During some years, Lake Whitefish are encountered in Ontario's deep, offshore fall bottom trawl assessment in Outer Long Point Bay.

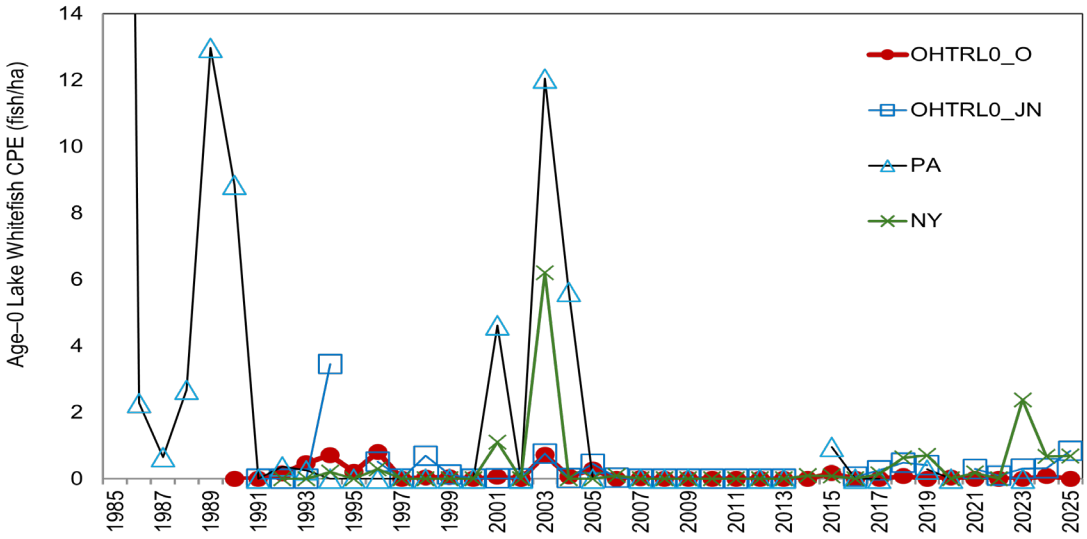


FIGURE 1.1.6. Age 0 Lake Whitefish catch per hectare in Ohio (central basin during June – OHTRL0_JN, October – OHTRL0_O), Pennsylvania (PA) and New York (NY) fall assessment trawls. Ohio data are means for October trawls in District 2 and 3. Pennsylvania did not conduct trawls during 2018, 2021, 2022, 2024 or 2025. Ohio did not trawl in June 2020.

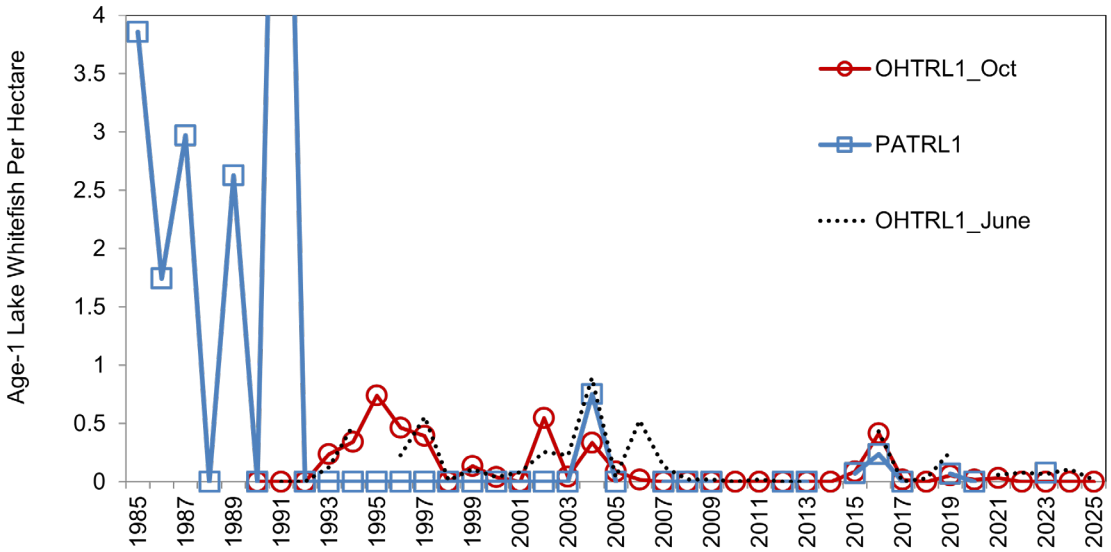


FIGURE 1.1.7. Age 1 Lake Whitefish trawl catch rates (number per ha) in Ohio waters during June (dotted line) and October (circles) and in Pennsylvania (PATRL1) waters (squares). Pennsylvania 1991 value (9.2) exceeds maximum axis value. Pennsylvania did not trawl in 2018, 2021, 2022, 2024, and 2025. Ohio did not trawl in June 2020.

Diet

From 1995-2025, age-0 Lake Whitefish diet information was collected by ODNR during 20 years with annual samples ranging from 1 to 75. Age-0 Lake Whitefish diet samples from 1995-2025 were

dominated by Chironomids (larvae, pupae, adults) and zooplankton including Daphnia sp., Bosmina sp., Copepods, Ostracods, Leptodora sp., Chydoridae and other prey taxa. Fingernail clams and Dreissenid mussels, present earlier in the time series, have been absent since 2017 and 2006, respectively.

Diet analyses were completed for Lake Whitefish ages 2 and older collected from Ohio waters of the central basin (D 2,3) from March to October 1995-2025. Over decades, Lake Whitefish diet composition (% dry weight) remained diverse with prey such as Benthic Invertebrates, Chironomids and Mollusks prominent (Figure 1.1.8). Benthic Invertebrates and Mollusks are often a large portion of Lake Whitefish diet composition, with proportions varying throughout the time series. Zooplankton prey were variably present over time, with proportions occasionally amplified at low sample sizes, as is seen in 2025. Fish prey has occurred in Lake Whitefish diets sporadically over the entire time series. There is greater uncertainty describing Lake Whitefish diet composition for years with low sample sizes (Figure 1.1.8).

Diet composition of juvenile (age-1) Lake Whitefish, not collected in 2025, can be found in previous coldwater task group reporting.

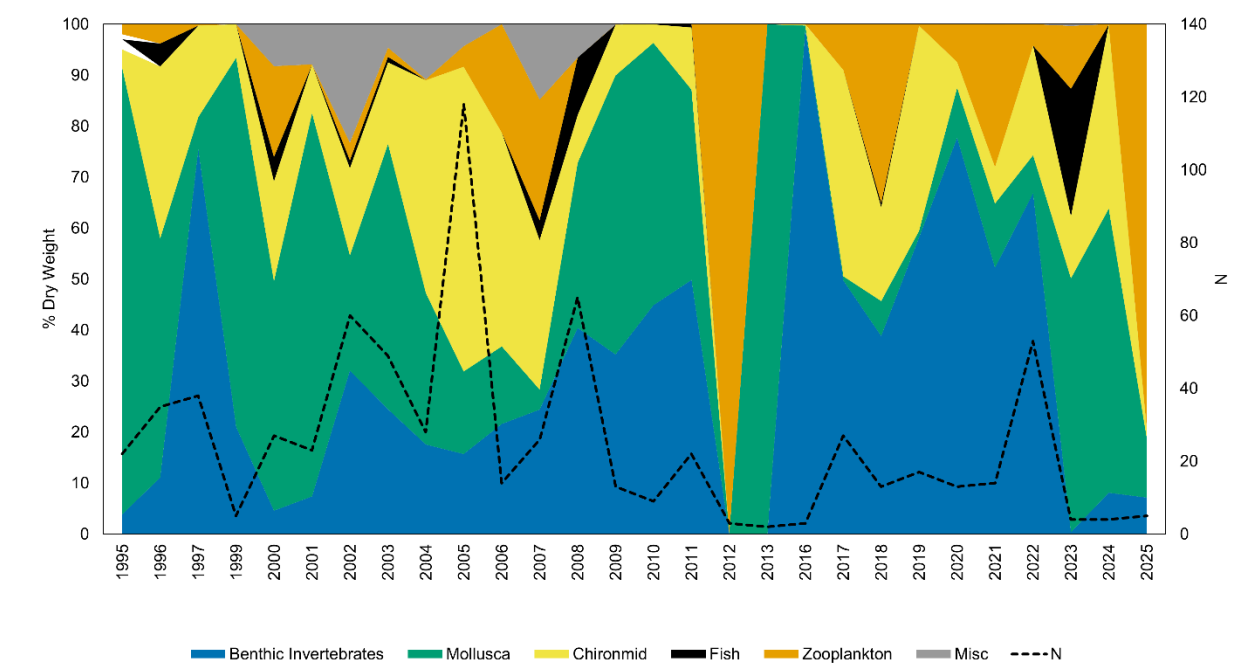


FIGURE 1.1.8. Lake Whitefish (ages 2 and older) diet composition (% dry weight) by prey taxa collected from Ohio waters of central Lake Erie, 1995–2025. Number of Lake Whitefish stomachs with contents expressed as dotted line (second Y axis).

Genetics

Biologists from numerous state and federal agencies across Lake Erie collaborated to collect Lake Whitefish (N=371) from the Detroit River and all three basins of Lake Erie during the spawn to determine whether spawning aggregations represent unique genetic stocks (leads Euclide and Schmitt; GLFWRA) ,. By combining GT-seq genotyping with whole-genome sequencing, this study offers the most complete look yet at Lake Erie Whitefish genetics. The results suggest that the long-held assumption of a single genetic stock is accurate; there is very little genetic difference among the various spawning groups. For example, spawning Lake Whitefish from the Detroit River were not significantly different from those collected near Long Point, Ontario despite being nearly 250 km apart. Interestingly, a historical reconstruction of effective population size (GONE) revealed a five-fold decline roughly 20–25 generations ago, which corresponds with the Lake Whitefish fishery collapse of the late 1950s. These findings

reinforce the assumption that, in present times, Lake Whitefish represent a single genetic stock, though that may not have always been the case. A manuscript describing these results has been drafted and is currently in internal review.

Acoustic Telemetry

Lake Whitefish in Lake Erie have undergone a decline in abundance due to several factors, particularly poor recruitment. While most Lake Whitefish spawning occurs in the West Basin, historically there have been spawning populations in the East Basin. Most of the data on Lake Whitefish East Basin spawning locations are decades old; identifying current spawning locations and assessing the seasonal movement patterns of East Basin spawners will help inform successful efforts to restore Lake Whitefish populations in Lake Erie. To investigate this, a program to acoustically tag East Basin spawning Lake Whitefish in Canadian waters was initiated by the Ontario Ministry of Natural Resources (H. Dixon; COA) in 2025. This program involves setting gillnets in areas identified as historical spawning areas, sites that have been identified as potential spawning areas by modelling studies, and recent commercial capture locations of Lake Whitefish during the spawning period, in an attempt to identify Lake Whitefish spawning locations and tag any spawning fish captured. During the 2025 spawning period, eight Lake Whitefish were captured off Nanticoke Shoal, and implanted with 69 kHz acoustic transmitters and tagged with external Floy tags. This program will continue until 2028, in a bid to identify further potential spawning areas and tag more fish.

Statistical Catch at Age Analysis (SCAA)

A two-gear statistical catch-at-age (SCAA) model for Lake Whitefish (CWTG 2025) was updated with 2025 harvest and survey data. The model configuration consists of equal weighting (lambdas=1) among data sources, a catchability block to address a switch by Ontario's gillnet fishery to incidental harvest in 2014 and a selectivity block to account for a shift in fishery mesh size since 2017. The SCAA model consists of 2 gears (gillnet fishery catch and effort and Partnership Survey catch rates) but includes harvest from all jurisdictions with an adjustment to gillnet effort that accounts for the additional harvest. SCAA model results are presented in Figure 1.1.12. Principal components analysis (PCA) was used to consolidate 10 Lake Whitefish recruitment indices into 2 principal components (Y. Zhao, personal communication, 2015) for use in linear regression with SCAA age-3 abundance estimates to forecast future recruitment of age-3 Whitefish and for comparisons to SCAA age-3 estimates (Figure 1.1.9). Abundance and spawner biomass levels were forecast to 2028 assuming 2025 SCAA terminal survival estimates. Forecasted spawner biomass from 2026–2028 was compared to a State of the Lake (SOLE) limit reference point (LRP) that describes Lake Whitefish population status. The LRP was based on the range (1.7-3.0 million kg) of depressed spawning stock biomass (SSB) estimated from 2014–2017. Lake Whitefish spawner biomass levels may remain above the 2014–2017 Limit Reference Point (3.0M) until 2028, provided fisheries' harvest remains conservative (Figure 1.1.10). Initiatives to further understand Lake Whitefish recruitment in Lake Erie are described below.

Summary

In 2025, Lake Whitefish fishery harvest (167,855 pounds) increased by 107% from 2024. Fishery performance varied across jurisdictions. Commercial fishery catch rates for 2025 increased in Ontario (+17%) and Ohio (+58%) waters while decreasing in Pennsylvania waters (-41%). Trends in status conflicted between surveys whereby catch rates decreased in the CWA (62%) and increased dramatically in the Partnership survey to a time series high. A broad range of ages were represented in surveys and the gillnet fishery during 2025. Statistical catch at age population and biomass estimates informed by agency recruitment indices forecast relatively constant abundance and biomass to 2028. The task group recommends efforts to integrate the CWA survey into the SCAA model in the future. The Coldwater Task Group recommends continued conservative management of Lake Whitefish. Ongoing studies of habitat use by all life stages and stock discrimination efforts continue to benefit our understanding of population

dynamics, supporting sustainability of Lake Whitefish in Lake Erie.

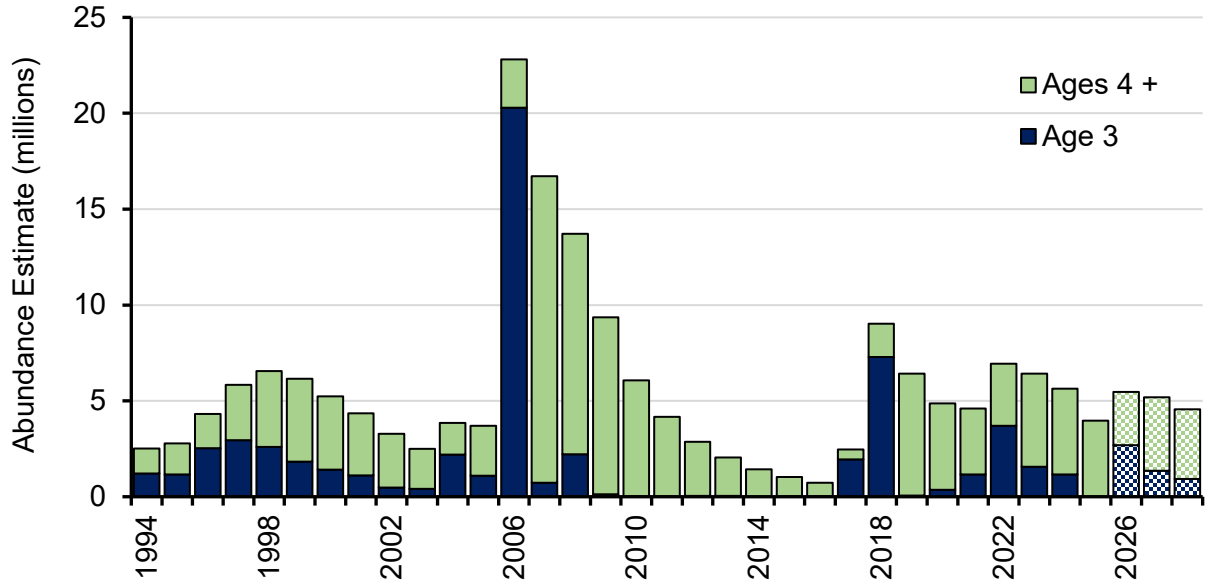


Figure 1.1.9. Lake Whitefish abundance estimates at age 3 (blue) and age 4 and older (green) from SCAA (1994–2025) with projections to 2028 from recruit indices in PCA and assumed terminal survival.

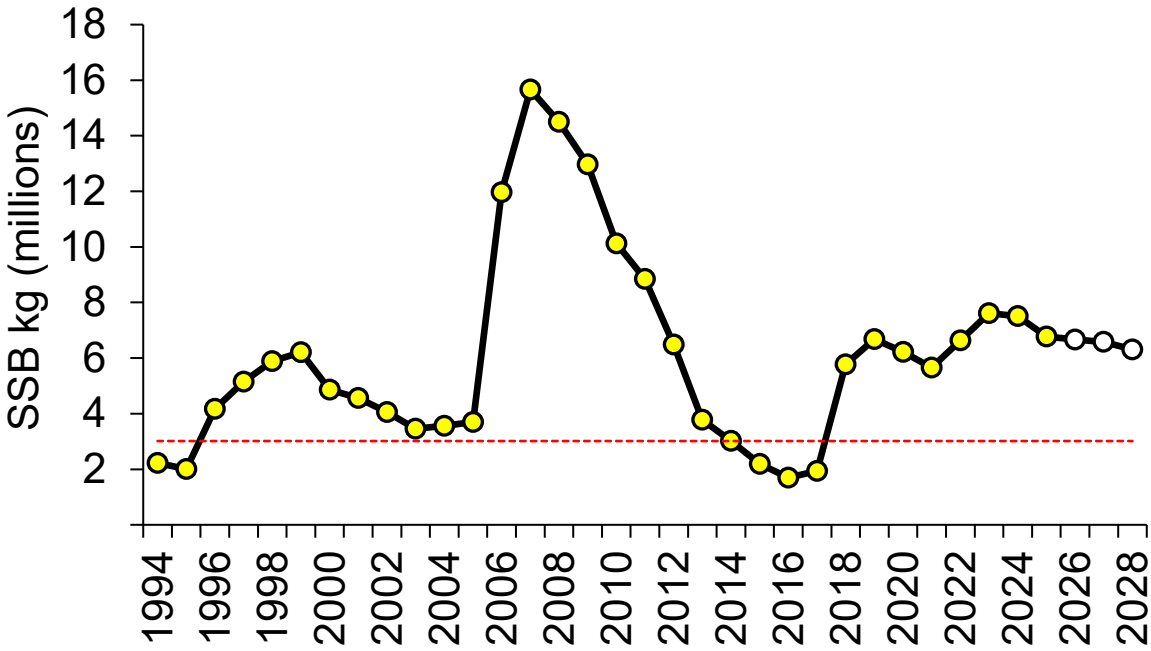


Figure 1.1.10. Lake Whitefish spawning stock biomass estimates (millions of kg. black line) projected to 2028 (white dots), assuming constant SCAA survival estimates from 2025. Limit reference point (red dashed line; 3.0M kg) was based on low SSB 2014–2017.

Cisco

In Lake Erie, cisco once supported the largest freshwater fishery on earth, but overfishing, habitat degradation, and invasive species led to their extirpation by 1960 (Eshenroder et al. 2016). Cisco are recognized within Lake Erie's Fish Community Objectives (Francis et al. 2020) as an important cold-water ecosystem component with historically important linkages between lower trophic levels (e.g., invertebrates and plankton) and apex predators (e.g., Lake Trout, walleye, etc.).

Recent cisco-like captures in Lake Erie

Despite being listed as extirpated, contemporary observations of cisco-like fishes in Lake Erie continue. The ten most recent observations (USGS surveys and commercial fishery surrenders; 2018–2023) were genetically determined to be most similar to *Coregonus artedi* (n=8) or *Coregonus hoyi* (n=2) from Lake Huron (Amanda Ackiss; USGS, Great Lakes Science Center). No adult cisco were observed in 2025.

Experimental Stocking 2025–2034

In May 2025, 86,724 yearling cisco (*C. artedi*) were stocked in New York waters of Lake Erie representing the first year of a 10–year experimental reintroduction plan. The goal for this stocking is to determine if Cisco can survive to adulthood in the lake as it exists today. All fish were marked with Oxytetracycline (OTC). The stocking target is 300,000 cisco annually, however, hatchery capacity limitations and mortality caused below target stocking in 2025. Of those stocked, 70 were implanted with acoustic tags to track movement, survival, and dispersal patterns after stocking. The results of this work will help inform future cisco rehabilitation decisions in New York. One cisco was potentially recaptured by the OMNR partnership gillnet survey off of Port Maitland, ON and is awaiting OTC mark confirmation by USFWS.

1.2 Report of the status of Lake Trout relative to rehabilitation plan targets

Pascal Wilkins (NYSDEC), Tom MacDougall (OMNRF), Mark Haffley (PFBC), Joseph Schmitt (USGS)

Assessment Surveys

In 2025, 230 Lake Trout (all ages) were caught in the Coldwater Assessment Survey assessment (standard and offshore) nets, yielding an area-weighted catch rate (CPE; catch per effort) of 2.33 fish/lift. All assessment nets (standard and offshore) were used to provide the most complete representation of the age structure of the Lake Erie Lake Trout population. The highest catches occurred in New York waters (Areas 1 & 2; 4.1 fish/lift). Catch rates varied somewhat in the remaining areas (1.1 – 2.4 fish/lift) but were, generally, less than those observed in New York (Figure 1.2.1). With some exceptions, the highest CPEs have typically been recorded in New York, coinciding with higher cumulative Lake Trout stocking over time, followed by stocking in Pennsylvania and finally in Ontario waters, where annual stocking has been less and did not commence until 2006. This pattern may change in coming years as, under an updated management plan (LEC, 2021), numbers of yearling Lake Trout and locations stocked rotate between Ontario, New York, Pennsylvania and Ohio (with 3 of 5 locations stocked each year).

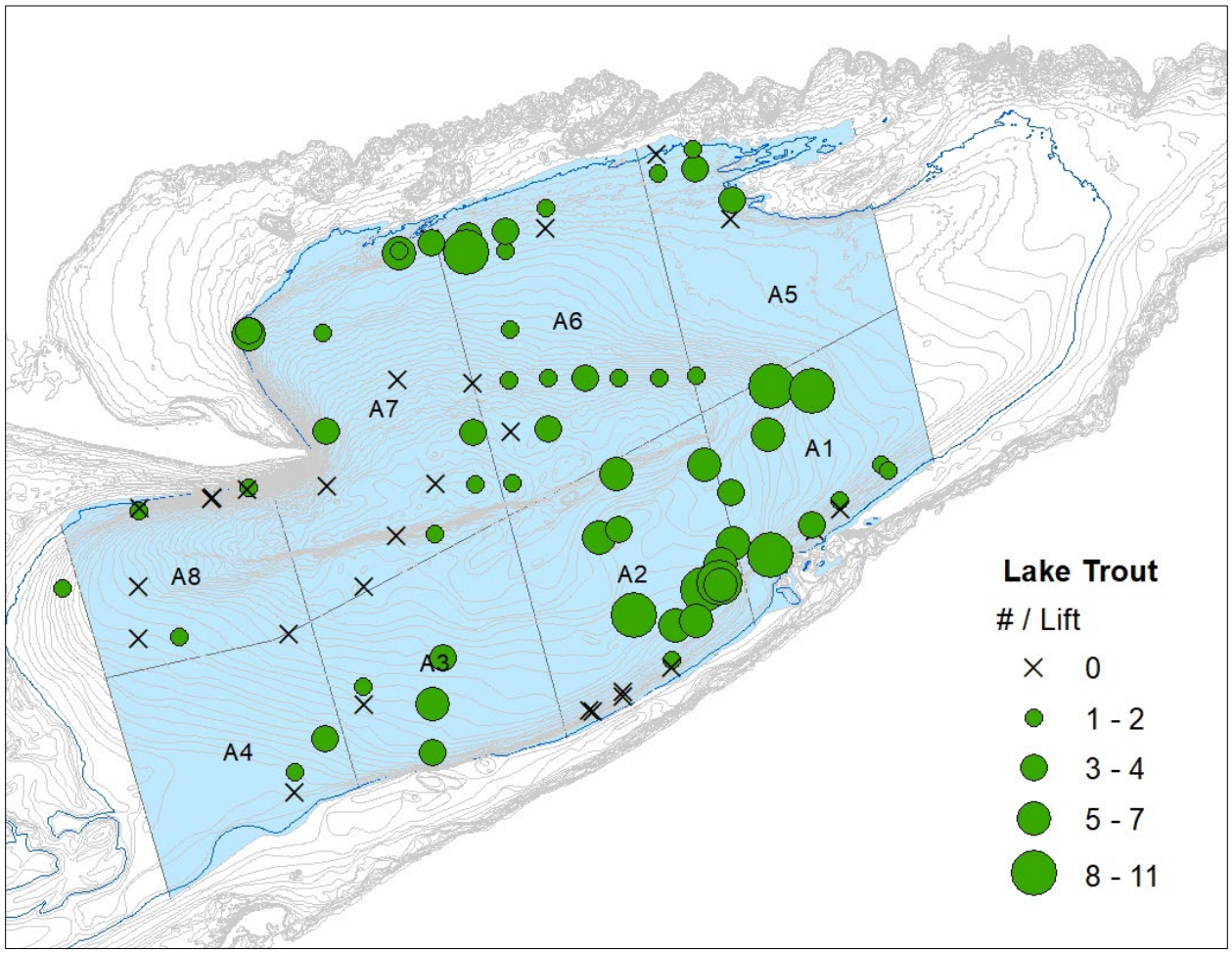


FIGURE 1.2.1. Catch rates (CPE; fish/lift) of Lake Trout (all ages) caught in the Coldwater Assessment Survey in the eastern basin of Lake Erie, August 2025. Relative CPE is indicated by scaled circle size. An "X" is used to represent net sets where no Lake Trout were caught.

A total of twenty-two age-classes among four different strains were represented in 2025 with the oldest fish being age-36 (1989 year-class; FL strain) (Figure 1.2.2). Age-4 was the most abundant year class, representing 17% of the 196 fish whose ages could be determined. There was also strong representation from age-5 (15%) and age-3 (9%). Ages 10, 13, 15, 16, and 17 contributed similarly, representing between 5–8% of the ageable catch. The abundance of Lake Trout older than age-10 has increased in recent years and comprised 48% of the overall catch in 2025. Thirty-four of the 230 Lake Trout caught were not aged although total lengths of these fish suggest most were older adult fish. The strains of Lake Trout that contributed most to the total catch in 2025 were Finger Lakes (FL; 53%) and Lake Champlain (LC; 33%), followed by Slate Island (SI; 13%). These three strains have been the most commonly stocked Lake Trout strains in Lake Erie over the past fifteen years. The stocking of Slate Island strain was discontinued following the latest review and revision of Lake Erie's Lake Trout Rehabilitation Plan (LEC, 2021) due in large part to low survival to older ages; Slate Island strain Lake Trout were last stocked in 2021 and were still well represented as age-5 fish in 2025.

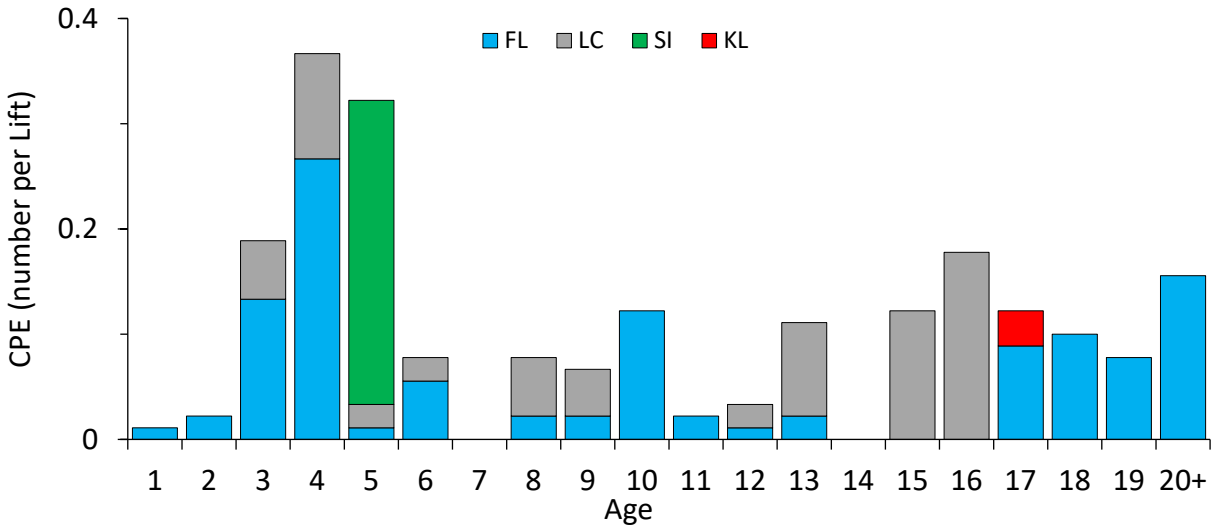


FIGURE 1.2.2. Relative abundance (number per lift) by strain at age, of Lake Trout sampled in all assessment gill nets in the eastern basin of Lake Erie, August 2025. Abbreviations for strains include: FL (Finger Lakes); LC (Lake Champlain), SI (Slate Island); and KL (Klondike).

The relative abundance of adult (age-5+) Lake Trout caught in all assessment gill nets (weighted by area) in the Coldwater Assessment Survey serves as an indicator of the size of the Lake Trout spawning stock in Lake Erie. The targeted catch rate described in the 2021 Rehabilitation Plan (LEC, 2021) is 2.0 fish/lift. Adult abundance in all nets increased in 2025 to 1.40 fish/lift from 1.29 fish/lift in 2024 (Figure 1.2.3). Adult abundance has been below target for four of the past five years. The 3-year running average of adult abundance was 1.64 fish/lift (2023–2025). This is the second year that the relative abundance indicator utilized all assessment gill nets. No management actions related to adult abundance are being recommended for 2026.

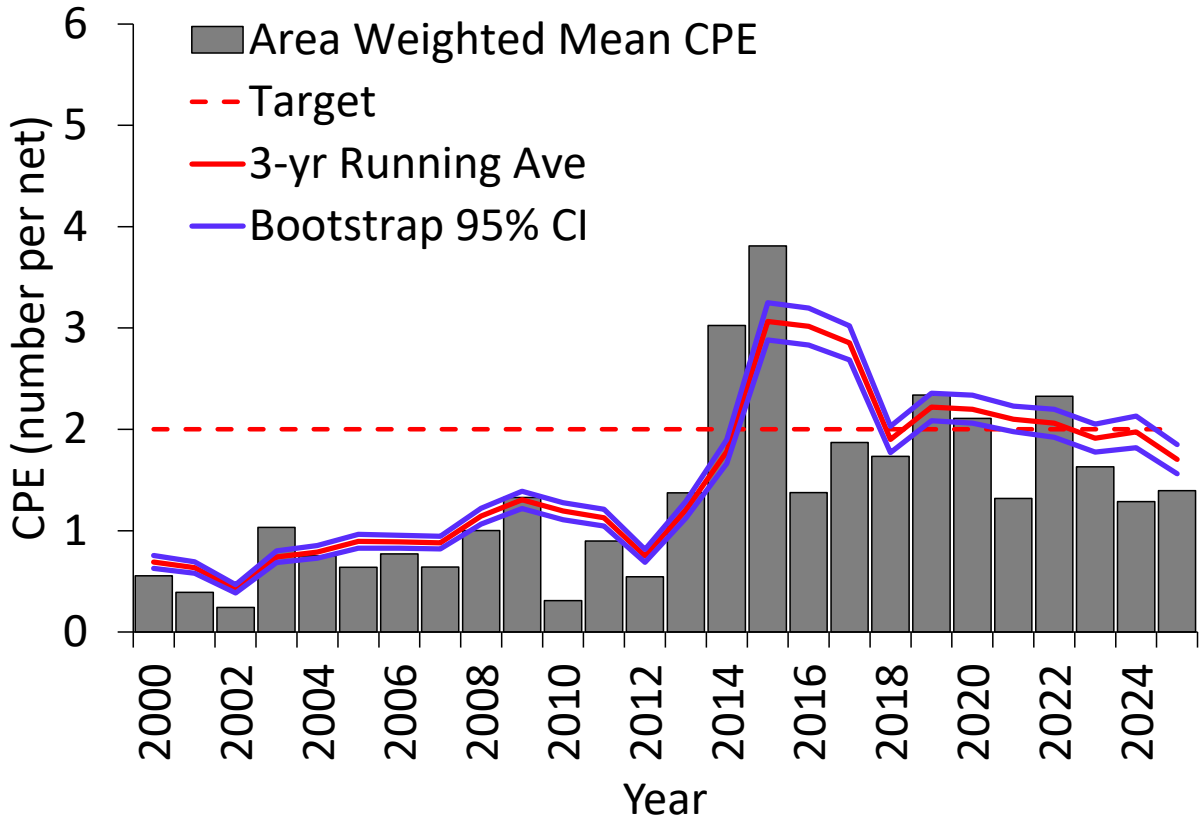


FIGURE 1.2.3. Mean combined CPE (number per lift, weighted by area) for Lake Trout sampled in all assessment gill nets in the eastern basin of Lake Erie, 2000–2025. Grey bars: annual mean adult (age 5+) Lake Trout CPE. Red dotted line: targeted adult Lake Trout CPE (2.0 fish/lift). Red solid line: 3-year running average of adult Lake Trout CPE. Blue solid lines: bootstrap estimates of the 95% confidence intervals.

Recreational Catch and Harvest

Annual angler surveys in NY and PA provide a good record of change in the fishery over time. Recreational angler catch of Lake Trout in these waters has increased over the past decade, coinciding with increases in adult abundance. However, angler harvest of Lake Trout in Lake Erie remains very low with total (NY + PA) harvest in 2025 estimated at 920 fish (Figure 1.2.5). An estimated 755 Lake Trout were harvested in New York waters out of an estimated catch of 3,246 fish in 2025. Pennsylvania anglers harvested an estimated 165 fish from a total catch of 415 Lake Trout. It should be noted that these estimates do not include the fall nearshore fishery near spawning time (November, December), which has become more popular in recent years, especially in Pennsylvania waters.

Anglers are surveyed much less frequently in Ontario waters. In 2024, seven anglers reported targeting Lake Trout. Total targeted effort in 2024 was estimated at 1,601 rod-hours with a total targeted catch of 104 Lake Trout (0.065 fish/rod-hour). In total 593 Lake Trout were caught in Ontario waters, and 275 of these were harvested. The Ontario sport fishery was not surveyed in 2025; the next expected survey will take place in 2029.

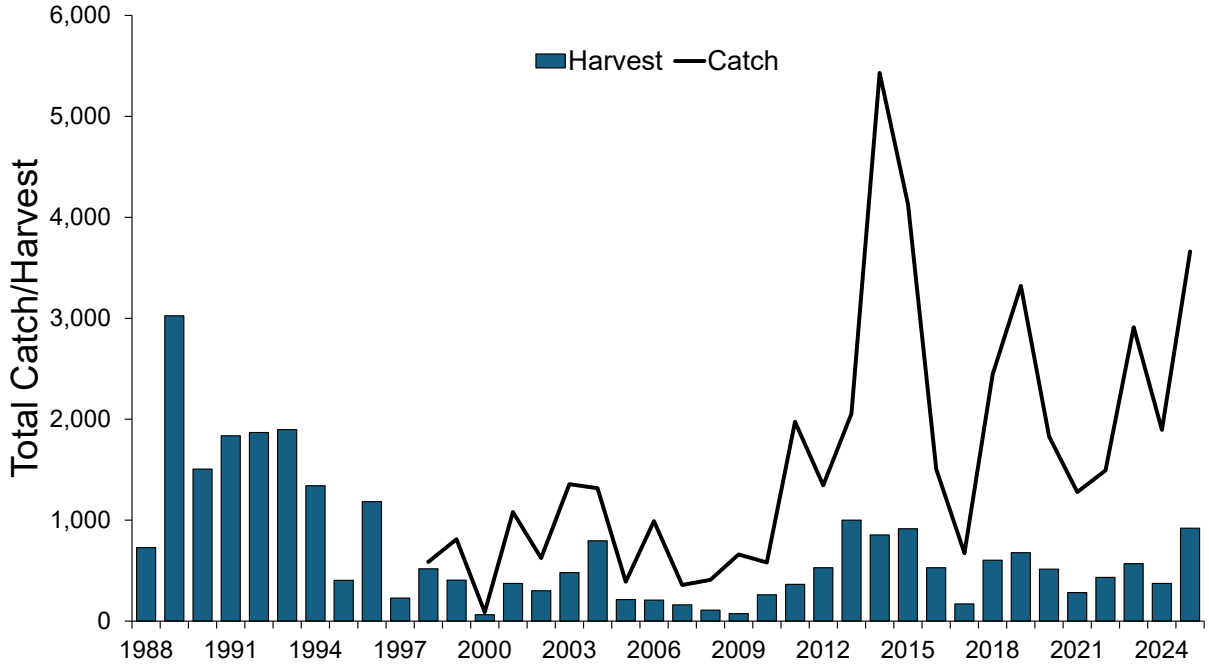


FIGURE 1.2.5. Estimated Lake Trout catch and harvest by recreational anglers in the New York and Pennsylvania waters of Lake Erie, May-October, 1988–2025.

Natural Reproduction

In Fall 2020, the results of an acoustic telemetry VPS array coupled with visual confirmation documented two potential Lake Trout spawning locations in the vicinity of Shorehaven Reef, NY. Fry trapping in April and May 2021–2024 at these two locations confirmed the presence of naturally reproduced post-embryo Lake Trout, the first documentation of successful reproduction since rehabilitation efforts began (Markham et al. 2022). In April and May 2025, fry traps captured 8 pre-embryo, and 2 post-embryo Lake Trout across four additional spawning locations in the vicinity of Shorehaven Reef, NY. This brings the total number of documented spawning locations to 10, within the vicinity of Shorehaven Reef, NY.

Recent documentation of Lake Trout congregations during the late fall (November-December) spawning window has been very limited outside of the PA/NY waters. However, in the central basin, USGS Lake Whitefish sampling in November 2023 in the vicinity of Fairport Harbor, OH collected 99 mature, ripe Lake Trout (Spitz et al. 2025). Follow up sampling (4 short-set gillnets) by ODNR in fall 2025 documented over 100 mature, ripe Lake Trout, indicating a spawning aggregation consistently returning to the area. In the western basin, commercial trap nets collected 13 Lake Trout in November 2025 near known walleye and Lake Whitefish spawning habitat. Similarly, in the eastern basin, gillnets set by OMNR in Long Point Bay, targeting Lake Whitefish, caught 24 mature, spawning-condition Lake Trout between November 19 and December 2, 2025. Catches occurred at both Nanticoke Shoal (an Ontario Lake Trout stocking site) and more nearshore-adjacent Peacock Point shoal.

All Lake Trout stocked into Lake Erie are marked by fin clip and/or coded wire tag, and observations of unmarked Lake Trout remain low. Fish missing one and/or the other mark were used to calculate the rate of marking error. However, after marking errors are accounted for, a small contribution from probable wild-produced fish is evident and has been increasing in recent years (Figure 1.2.6). In 2025, one of the 230 total Lake Trout caught during the survey was potentially wild (no fin clips; no CWT's). Altogether, a total of 90 potentially wild Lake Trout have been recorded since 2000 in the Coldwater Assessment Survey.

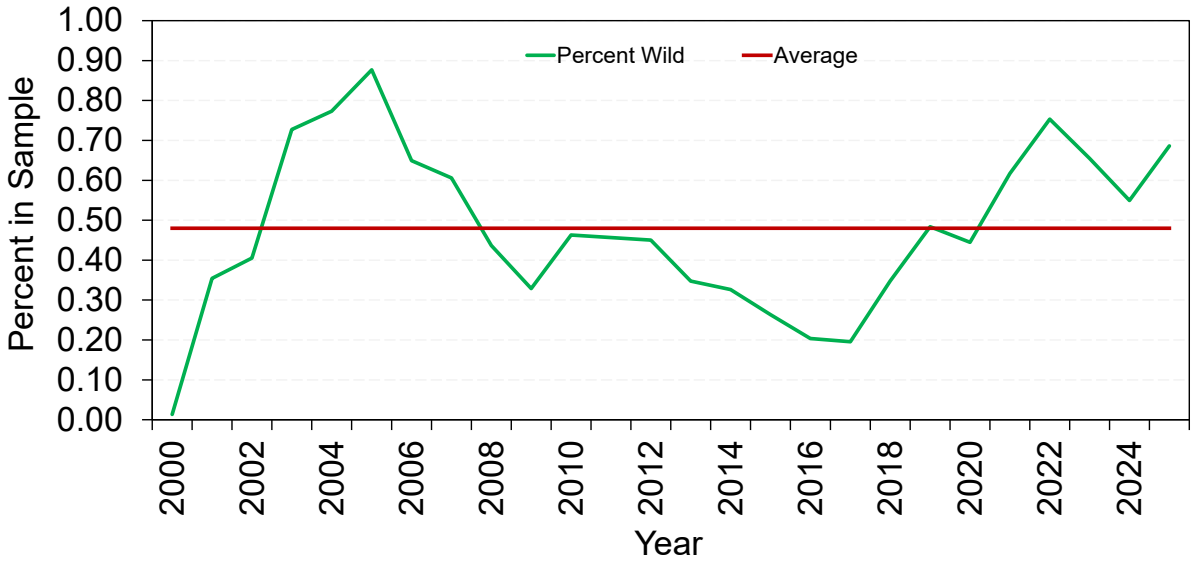


FIGURE 1.2.6. Percentage of potentially wild Lake Trout caught in the Coldwater Assessment Survey in the eastern basin of Lake Erie for 5-year running average time blocks, 2000–2025 (green line), compared to the time series average (red line). A potentially wild fish has no fin clips and no coded-wire tag (CWT). Percentages are calculated after accounting for observed marking error.

1.3 Report on the status of Burbot

Tom MacDougall (OMNR), Pascal Wilkins (NYSDEC), Mark Haffley (PFBC), Joseph Schmitt (USGS)

Assessment Survey

Burbot are seasonally found in all the major basins of Lake Erie; however, the summer distribution of adult fish is restricted primarily to the 20 m and deeper, thermally stratified regions of the eastern basin. Since the redesign of the Partnership Index survey in 2023, which excluded sites deeper than 30 m, Burbot have been assessed using the Coldwater Gillnet Assessment exclusively. During the early 1990s, Burbot relative abundance was low throughout the Lake. Catch rates increased between 1993 and 1998, peaked in the early 2000s, and then declined (Figure 1.3.1). For much of the past decade, catch rates have been consistently low with some regional differences. A time series low (0.24 fish/lift) occurred in 2019. Since then, catch rates in the CWA have increased each year, culminating in a 2025 overall CPE of 1.67 fish/lift. This was the highest catch rate since 2008 and represents the 63rd percentile of the time series. In 2025, Burbot were caught across a range of depths, across all survey areas (Figure 1.3.2).

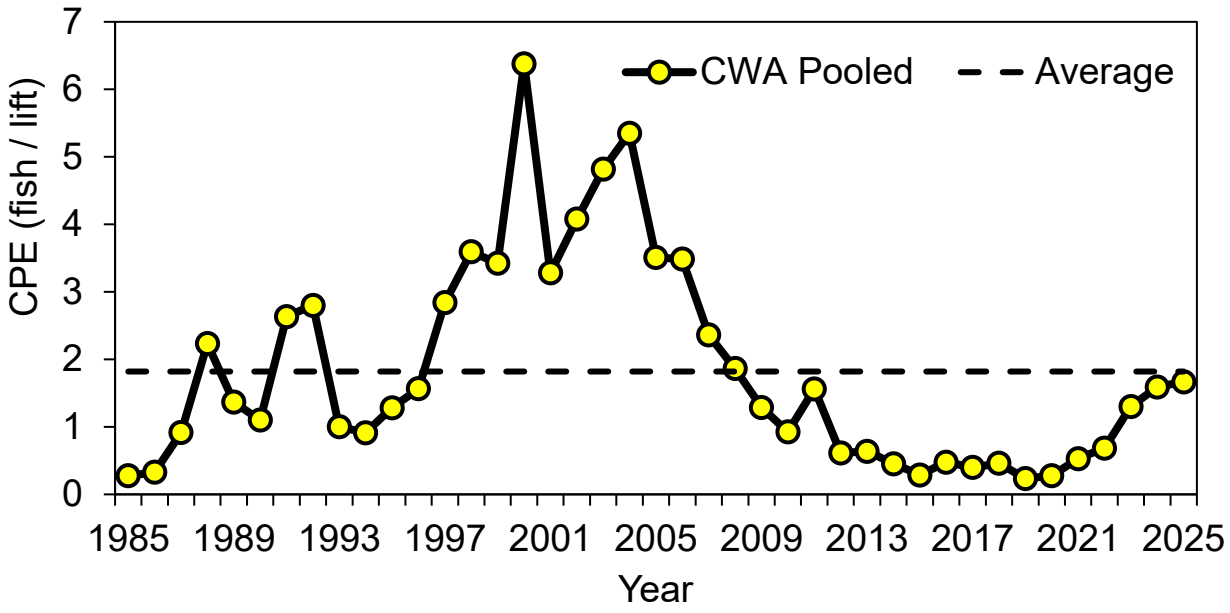


FIGURE 1.3.1. Burbot CPE (mean number per lift) from the Interagency Coldwater Assessment Survey (all nets), 1985–2025.

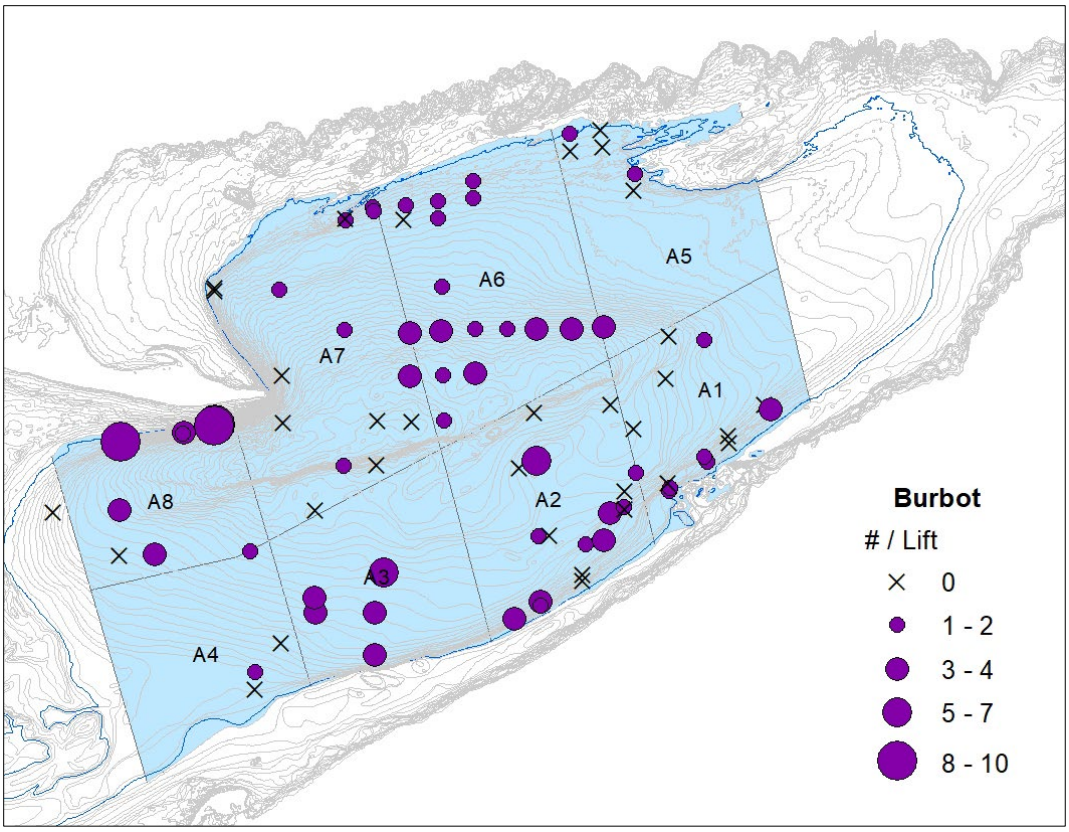


FIGURE 1.3.2. Catch rates (CPE; fish/lift) of Burbot (all ages) caught in the Coldwater Assessment Survey (all nets), in the eastern basin of Lake Erie, August 2025. Relative CPE is indicated by scaled circle size. An “X” represents a net set where no Burbot were caught.

Commercial Fishery

Historically, fishery harvest of Burbot occurred mainly in eastern Lake Erie with peak harvests in Pennsylvania waters. However, harvest decreased in Pennsylvania waters after 1995 following a shift from a gillnet to a trap net commercial fishery, resulting in a substantial decrease of commercial effort (CWTG 1997). In 1999, a market was developed for Burbot in Ontario, leading the industry to actively target this species in 1999 and a concomitant increase was observed. However, this opportunistic market did not persist. Burbot catch is now incidental in nets targeting other species. The total commercial catch for Lake Erie in 2025 was 2,950 lbs., an increase of 168% from the 2024 harvest (1,100 lbs.). The 2025 total catch included contributions from Ontario (83%, 2434 lbs.), New York (10%, 290 lbs.), Pennsylvania (7%, 194 lbs.), and Ohio (1%, 32 lbs.). Ontario commercial catch in 2025 included reported landed harvest, discard and released Burbot with nominal catch from Inner Long Point Bay. In 2025, the majority of Burbot caught incidentally by gillnet and trawl in Ontario waters was from eastern waters of the central Lake Erie, in close proximity to the Pennsylvania Ridge (84%).

Age and Recruitment

Ages of Burbot caught in the CWA Survey are determined using otoliths. Otoliths were examined using either thin-sectioning or “crack-and-burn” techniques. To date, 155 Burbot from the 2025 CWA survey have been aged using these methods. Burbot ranged in age from 2 to 19 years in 2025 (Figure 1.3.3). The catch had strong contributions from younger age classes; notably from 2020 (5-yr old; 25%) followed by 2019 (6-yr old; 21%) and 2021 (4-yr old; 16%). Strong contributions from younger year classes is a positive signal given concerns in the mid-2010s that the population was aging with no notable recruitment.

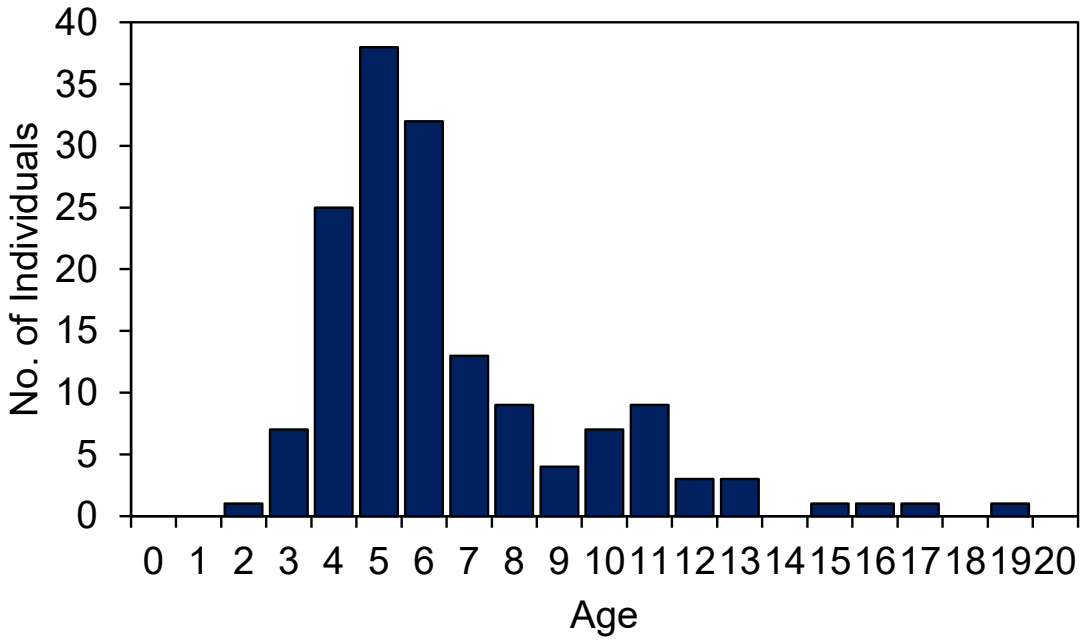


FIGURE 1.3.3. Age distribution of Burbot caught in the Coldwater Assessment Survey in eastern Lake Erie, 2025 (N=155).

The annual mean age of Burbot in the Coldwater Assessment has been erratic but has generally been decreasing from a high of 14.3 in 2013. In 2025 mean age was 6.5, similar to the mean age seen in 2024 and down notably from 2020 (9.2 years) and 2019 (12.1 years) (Figure 1.3.4). The 2025 mean age

was similar to that observed during the early 2000s, when overall CWA Burbot catch rates were at a high point in the survey time series (Figure 1.3.4).

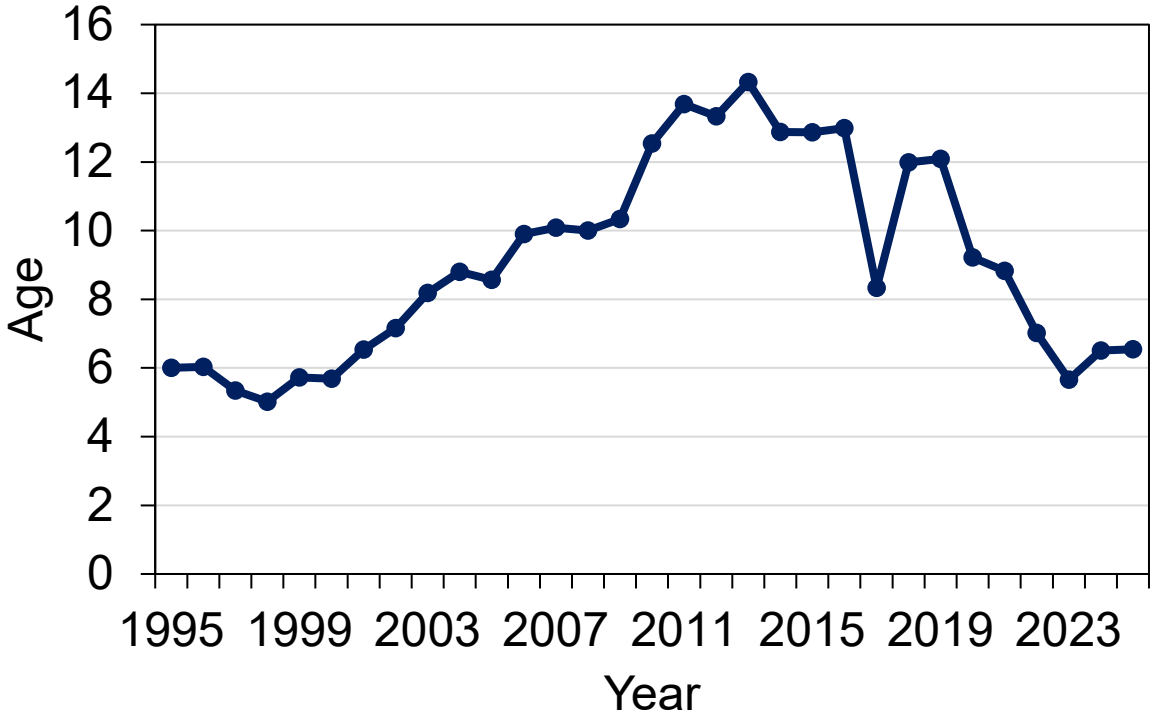


FIGURE 1.3.4. Mean age of Burbot caught in the interagency Coldwater Assessment Survey in eastern Lake Erie from 1997–2025.

Diet

Diet information was collected for Burbot caught in the 2025 CWA Survey. Analysis of the contents of non-empty stomachs (N=77, Figure 1.3.5) revealed a diet made up mainly of fish, but with some contribution from invertebrates. Burbot diets were dominated by round goby, (observed in 64% of non-empty stomachs), followed by yellow perch and rainbow smelt (in 17% and 13% of non-empty stomachs, respectively). Relative contributions from round goby and rainbow smelt tend to fluctuate, relative to each other, from year to year. Forty-two percent of stomachs had fish that were not identifiable. The diet category of “Other” has variously included such species as gizzard shad and alewife. No gizzard shad or alewife, observed frequently in past years, were identified in 2025. Invertebrate prey included: Dreissenid mussels (3% of non-empty stomachs), Mayflies (1% of non-empty stomachs) and Mysis shrimp (9% of non-empty stomachs).

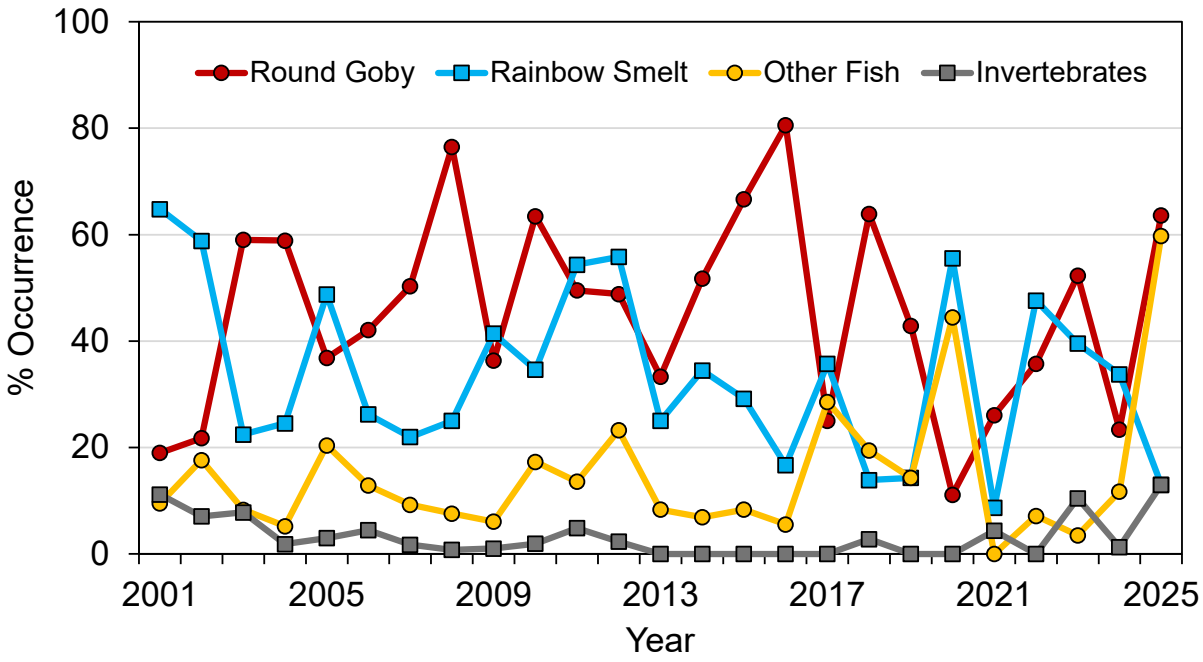


FIGURE 1.3.5: Frequency of occurrence of rainbow smelt, round goby, other fish, and invertebrates in the diet of Burbot caught in the Coldwater Assessment Survey in the eastern basin of Lake Erie, 2001–2025.

1.4 Report on the status of Rainbow Trout / Steelhead

Pascal Wilkins (NYSDEC), Amanda Popovich (ODNR), Mark Haffley (PFBC)

Tributary Angler Surveys

The best available measures of the status of the Lake Erie steelhead population are provided through comprehensive tributary angler surveys that obtain measures of fishery performance (i.e., catch rates) and angler use. As such, the Lake Erie Fish Community Objectives (Francis et al. 2020) established a catch rate goal of 0.25 fish/angler hour in suitable tributaries to assess status and fishery performance of steelhead.

Initial measures of the tributary fishery were conducted in the 1980's and showed average steelhead catch rates of 0.10 fish per angler hour (Figure 1.4.1). In 2003-04, the NYSDEC began conducting tributary angler surveys to monitor catch, effort, and harvest of the New York steelhead fishery. These surveys were initially conducted in consecutive years, and at regular intervals (3-4 years) since then. Coincidentally, the PFBC conducted a similar survey on their steelhead fishery in 2003-04, and ODNR on theirs in 2008-09 and 2009-10. Results of these surveys showed high tributary catch rates that averaged 0.60 fish/angler hour in the mid-2000's but then declined from 2009–2018 to 0.39 fish/hour. The most recent angler surveys conducted by NYSDEC and ODNR in 2021-22, 2023-24 and 2024-25 found tributary steelhead catch rates which were similar to the catch rates recorded in the mid-2010's (0.44, 0.31, 0.26, and 0.39 fish/angler hour, respectively). Steelhead continue to meet the fishery goals established by the Lake Erie Committee and the Lake Erie tributaries remain one of the top destinations for steelhead anglers in the country.

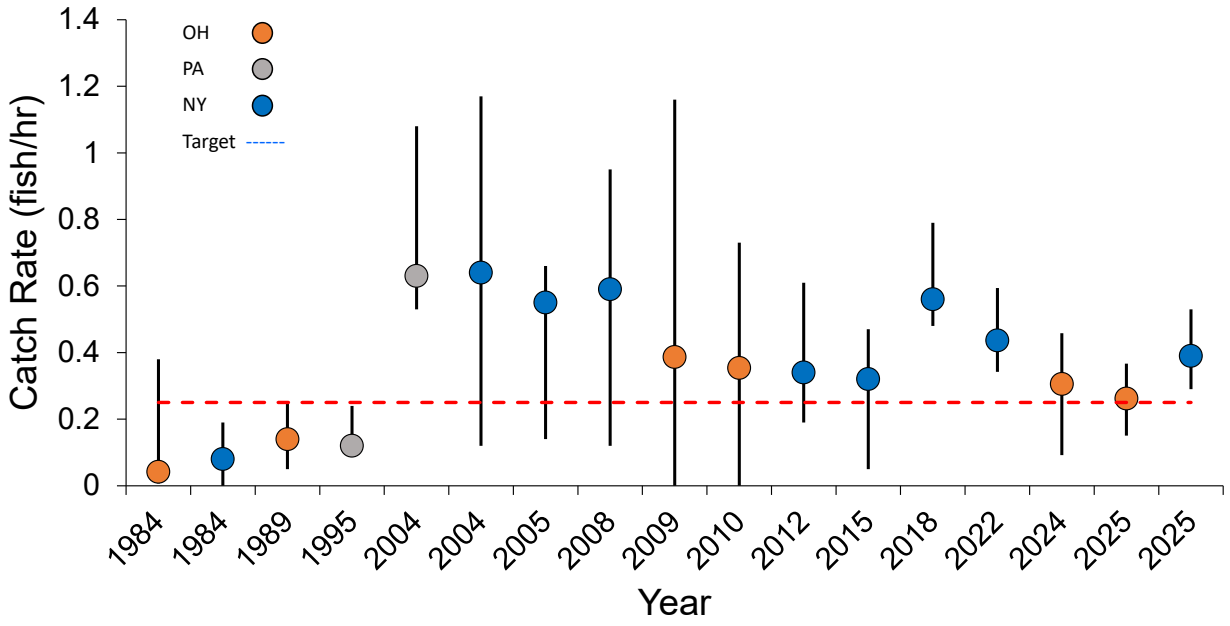


FIGURE 1.4.1. Targeted average steelhead catch rates (fish/angler hour) in Lake Erie tributary angler surveys by year and jurisdiction, 1984–2025. Vertical whiskers represent the range of individual tributary catch rates in the survey year. Dotted blue line is the fishery goal (0.25 fish/hr).

Exploitation

While steelhead harvest by boat anglers represents only a fraction of the total estimated harvest, it remains the only annual estimate of steelhead harvest tabulated by most Lake Erie agencies. These can

provide some indication of the relative abundance of adult steelhead in Lake Erie. The 2025 estimated steelhead harvest from the summer open-water boat angler fishery totaled 9,563 fish across all US agencies, Ontario did not do a creel survey in 2025, a slight large decrease compared to 2024. The majority of the harvest occurred in Ohio waters (7,461 fish (78%) with the remainder in Pennsylvania (1,771 fish (18.5%) and New York (329 fish (3.4%)). Open lake boat angler creel surveys have intermittently occurred in Ontario waters however, 2025 was not a survey year.

TABLE 1.4.1. Estimated harvest by open lake boat anglers in Lake Erie, 1999–2025.

Year	Ohio	Pennsylvania	New York	Ontario	Michigan	Total
1999	20,396	7,401	1,000	13,000	76	41,873
2000	33,524	11,011	1,000	28,200	532	74,267
2001	29,243	7,053	940	15,900	0	53,136
2002	41,357	5,229	1,600	75,000	39	123,225
2003	21,571	1,717	400	N/A*	18	23,706
2004	10,092	2,869	896	18,148	0	32,005
2005	10,364	2,333	594	N/A*	19	13,310
2006	5,343	1,876	354	N/A*	0	7,573
2007	19,216	5,075	1,465	N/A*	63	25,819
2008	3,656	1,156	647	N/A*	39	5,498
2009	7,662	758	96	N/A*	149	8,665
2010	3,911	4,865	109	N/A*	0	8,885
2011	2,996	1,718	92	N/A*	16	4,822
2012	6,865	2,809	374	N/A*	8	10,056
2013	3,337	1,510	482	N/A*	52	5,381
2014	3,516	2,627	419	4,165	6	10,733
2015	4,622	1,596	673	N/A*	6	6,897
2016	3,577	1,380	452	N/A*	0	5,409
2017	6,804	1,682	516	N/A*	60	9,062
2018	5,330	830	783	N/A*	49	6,992
2019	2,887	1,719	224	N/A*	59	4,889
2020	N/A**	3,584	316	N/A*	19	3,919
2021	20,991	1,893	104	N/A*	37	23,025
2022	22,042	905	251	N/A*	3	23,201
2023	11,763	1,204	545	N/A*	0	13,512
2024	14,839	2,039	378	9,378	3	26,637
2025	7,461	1,771	329	N/A*	2	9,563
mean	12,437	2,911	557	23,399	46	21,558

*no creel data collected by OMNRF in 2003, 2005-2013, 2015-2023. **No creel data available due to COVID 19

Abundance Indices

A change in the eastern Lake Erie Partnership Survey design was implemented in 2024. Index gillnet effort was reallocated to depths ≤30 m with the third gangs of index nets no longer fished in the thermocline. With only standard canned and bottom nets fished in the east basin survey, steelhead catch rates no longer provide a reliable measure of abundance. In 2024, three steelhead were caught in the east basin survey. In the future, steelhead results from this survey will no longer be presented in the report.

CHARGE 2: Continue to participate in the IMSL process on Lake Erie to outline and prescribe the needs of the Lake Erie Sea Lamprey management program

Chris Eilers (USFWS), Lexi Sumner (DFO), Pascal Wilkins (NYSDEC), Arthur Bonsal (OMNR)

The Great Lakes Fishery Commission and its control agents (U.S. Fish and Wildlife Service and Fisheries and Oceans, Canada) continue to apply the Integrated Management of Sea Lamprey (IMSL) program in Lake Erie including selection of streams for lampricide treatment and implementation of alternative control methods. The Lake Erie Coldwater Task Group has provided the forum for the assemblage of Sea Lamprey wounding data used to evaluate and guide actions related to managing Sea Lamprey and for the discussion of ongoing Sea Lamprey and fishery management actions that impact the Lake Erie fish community.

Lake Trout Wounding Rates

A total of 12 A1-A3 wounds were found on 214 Lake Trout greater than 532 mm (21 inches) total length in 2025 during coldwater assessment gill netting, equaling a wounding rate of 5.6 wounds per 100 fish (Table 2.1; Figure 2.1). This was above the target rate of 5.0 wounds per 100 fish. Large Lake Trout continue to be the preferred targets for Sea Lamprey; Lake Trout greater than 736 mm (29 inches) accounted for 75% of the fresh A1-A3 wounds (7.76 wounds/100 fish) in 2025 (Table 2.1). Small Lake Trout less than 532 mm (21 inches) are rarely attacked when larger Lake Trout are available.

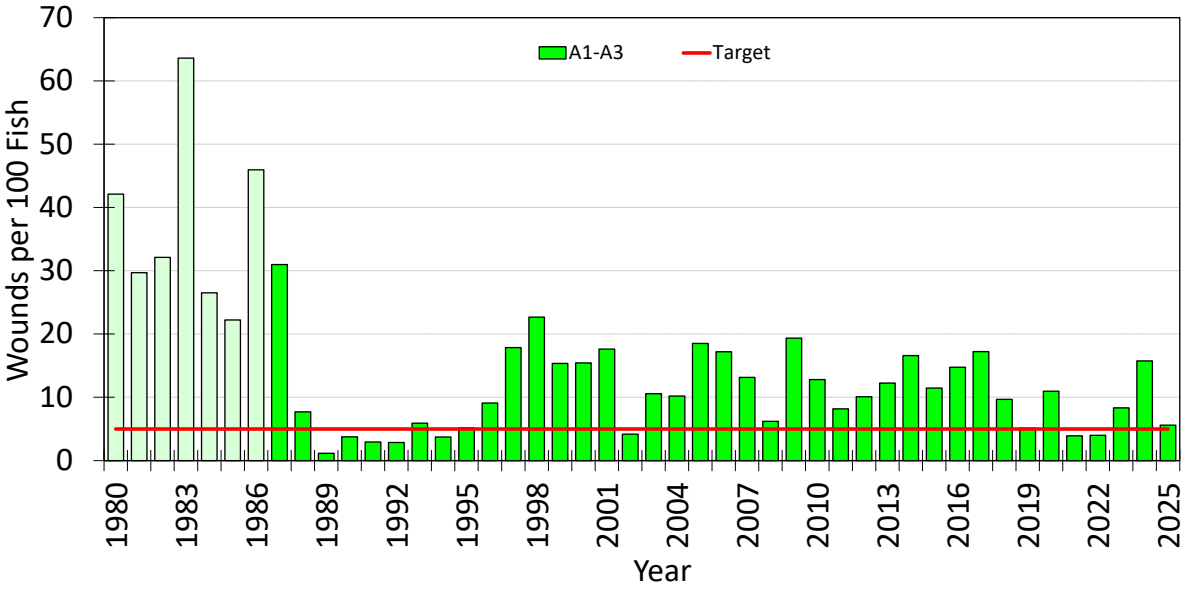


FIGURE 2.1. Number of fresh (A1-A3) Sea Lamprey wounds per 100 Lake Trout greater than 532 mm (21 inches) sampled in assessment gill nets in the eastern basin of Lake Erie, August, 1980-2025. The target rate (red solid line) is 5.0 wounds per 100 fish. Lighter shading indicates pre-treatment years.

TABLE 2.1. Frequency of Sea Lamprey wounds observed on standard length groups of Lake Trout collected from assessment gill nets in the eastern basin of Lake Erie, August, 2025.

Size Class Total Length (mm)	Sample Size	Wound Classification				No. A1-A3 Wounds Per 100 Fish	No. A4 Wounds Per 100 Fish
		A1	A2	A3	A4		
432–532	10	0	0	0	0	0.00	0.00
533–634	46	1	1	0	0	4.35	0.00
635–736	52	0	0	1	2	1.92	3.85
>736	116	3	0	6	3	7.76	2.59
>532	214	4	1	7	5	5.61	2.34

Finger Lakes (FL) and Lake Champlain (LC) were the most sampled Lake Trout strains in 2025, and they accounted for seven of the 12 (58%) fresh (A1-A3) and the majority of the healed (A4) Sea Lamprey wounds (Table 2.2). Wounding rates have typically been similar between these two strains in recent years. The Slate Island strain accounted for one fresh and two healed wounds on a low sample size of only twenty-six fish. This strain typically has higher wounding rates compared to the FL and LC strains. Sample sizes on Klondike (KL)) were too low (N=3) to provide meaningful measures of wounding. Lake Trout that could not be assigned a strain (i.e., no tag or clip present) accounted for a substantial portion (25% fresh; 0% healed) of the wounding for the fifth consecutive year.

TABLE 2.2. Frequency of Sea Lamprey wounds observed on Lake Trout greater than 532 mm (21 inches), by strain, collected from assessment gill nets in the eastern basin of Lake Erie, August, 2025. SI=Slate Island, FL=Finger Lakes, LC=Lake Champlain, KL=Klondike.

Lake Trout Strain	Sample Size	Wound Classification				No. A1-A3 Wounds Per 100 Fish	No. A4 Wounds Per 100 Fish
		A1	A2	A3	A4		
FL	95	1	1	2	3	4.2	3.2
KL	3	0	0	0	0	0.0	0.0
SI	26	0	0	1	2	3.8	7.7
LC	62	0	0	3	0	4.8	0.0
Unknown	28	3	0	1	0	14.3	0.0

Burbot Wounding Rates

The Burbot population, once the most prevalent coldwater predator in the eastern basin of Lake Erie, has declined over 95% (in relative abundance) since 2004 (see Charge 1). Coincidentally, both A1-A3 and A4 wounding rates on Burbot had increased since 2004 in eastern basin waters of Lake Erie but have declined in recent years coinciding with low adult Burbot abundance (Figure 2.2). In 2025, there were no fresh (A1-A3) and 3 healed (A4) wounds on the 132 Burbot sampled greater than 532 mm (21 inches) during coldwater assessment gill netting. There were 2 fresh (A1-A3) wounds on the 22 Burbot sampled smaller than 532 mm (21 inches). The low sample sizes on Burbot in recent years most likely provide a poor metric for actual wounding.

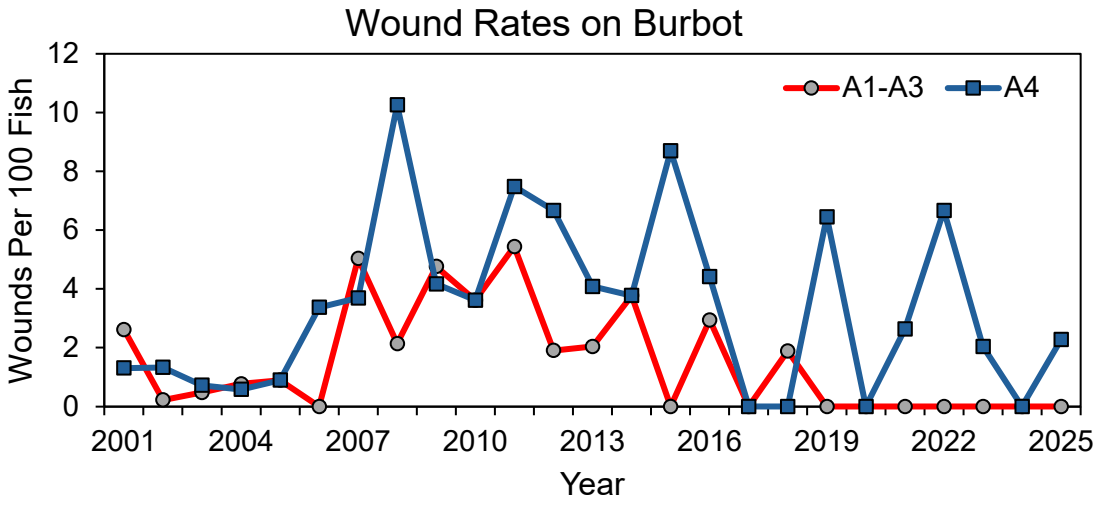


FIGURE 2.2. Number of A1-A3 and A4 Sea Lamprey wounds per 100 Burbot greater than 532 mm (21 inches) sampled in assessment gill nets in the eastern basin of Lake Erie, August, 2001–2025.

Lake Whitefish Wounding Rates

Reliable counts of Sea Lamprey wounds on Lake Whitefish have only been recorded since 2001. Wounds on Lake Whitefish were first observed in 2003, coincident with depressed adult Lake Trout abundance (see Charge 1) and have exhibited a general increasing trend until recently. A total of 43 Lake Whitefish greater than 532 mm (21 inches) were checked for evidence of Sea Lamprey attacks in 2025 assessment netting with no fresh A1-A3 or A4 wounds recorded (Figure 2.3). This is the fourth consecutive year of low wounding rates on Lake Whitefish.

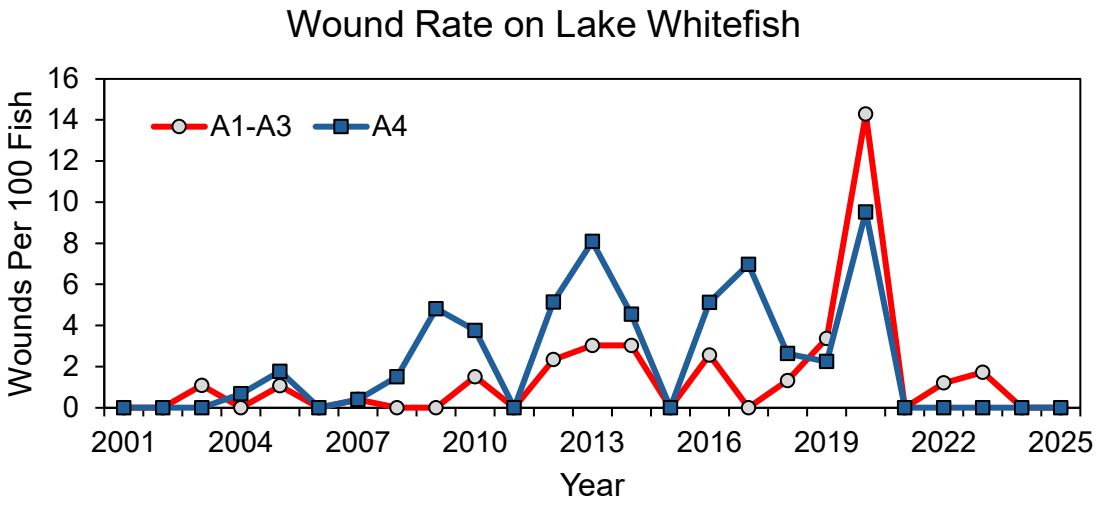


FIGURE 2.3. Number of A1-A3 and A4 Sea Lamprey wounds per 100 Lake Whitefish greater than 532 mm (21 inches) sampled in Coldwater Assessment gill nets in the eastern basin of Lake Erie, August, 2001–2025.

Ontario Partnership Index

The Ontario Partnership Index Fishing Program is an annual lake-wide gillnet survey of the Canadian waters of Lake Erie. Index gill nets were fished on bottom and suspended in the water column at 133 sites in 2025. Although Sea Lamprey wounds have been recorded on fish species since the survey began in 1989, detailed information on type and category of wound were not recorded until 2011.

In 2025, Sea Lamprey wounds and scars were not observed on any coldwater species such as Lake Trout, Lake Whitefish and Burbot. All coldwater species caught were examined for Lamprey wounds and scars in 2025. Lake-wide catches of Lake Trout, Lake Whitefish and Burbot were 11, 158 and 8 respectively. Two Smallmouth Bass exhibited Lamprey marks, one with an A-2 wound and one with a B-3 scar. Although 178 Smallmouth Bass were reportedly checked for wounds, 181 fish were sampled in the lab. The only other fish observed with a Lamprey mark in 2025 was a single White Sucker with a B-1 scar. A total of 166 White Sucker were reportedly checked for wounds, although 305 fish were sampled in the lab. The spatial distribution of fish with Sea Lamprey wounds and scars in 2025 is shown in Figure 2.4. In 2025, 9,295 fish were examined for Sea Lamprey wounds and scars during Partnership surveys.

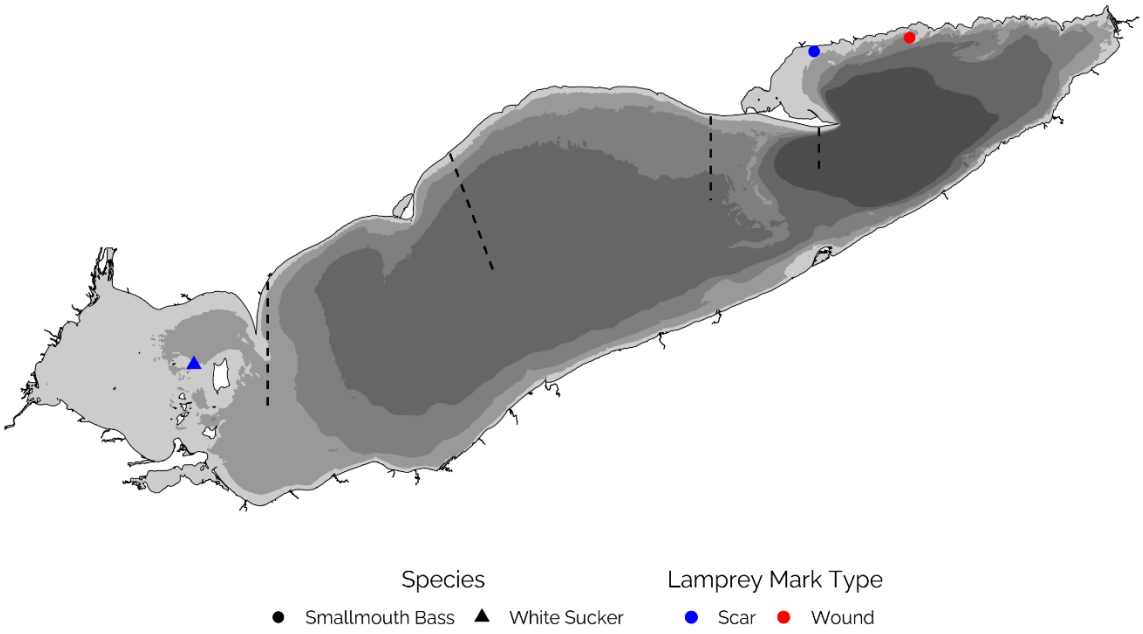


FIGURE 2.4. Individual fish with A-type wounds and B-type scars observed during Lake Erie Partnership surveys in 2025. Two Smallmouth Bass exhibited Lamprey marks, one with an A-2 wound and one with a B-3 scar. A single White Sucker with a B-1 scar was also observed.

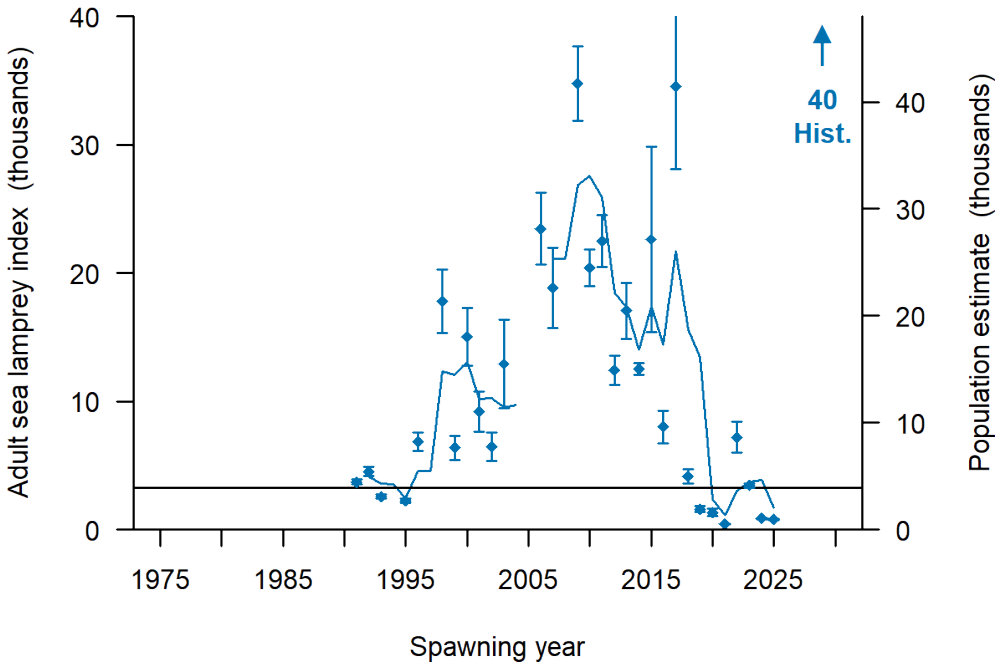


FIGURE 2.5. Index estimates with 95% confidence intervals (vertical bars) of adult Sea Lampreys, including historic pre-control abundance (as a population estimate) and the three-year moving average (line). The population estimate scale (right vertical axis) is based on the index-to-PE conversion factor of 1.2. The adult index in 2025 was 800 with 95% confidence interval (740-870). The three-year (2023–2025) average of 1,700 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).

Summary of 2025 actions for the integrated management of Sea Lampreys in Lake Erie

ADULT ASSESSMENT

- Mark-recapture estimates were generated for 3 of 5 index streams; the population estimate was modeled for Cattaraugus and Youngs creeks due to an insufficient number of recaptured animals. A total of 246 adult Sea Lampreys were captured from these sites compared to 251 in 2024.

LAMPRICIDE CONTROL

- Lampricide treatments were conducted in six tributaries (3 Canada, 3 U.S.).
- Youngs Creek was added to the 2025 Treatment Schedule and treated as a geographically efficient tributary.
- Close coordination with the Seneca Nation of Indians ensured the successful treatment of Cattaraugus Creek.
- Four treatments (0 Canada, 4 U.S.) are planned for the 2026 field season.

LARVAL ASSESSMENT

- Larval assessments were conducted in 40 tributaries (8 Canada, 32 U.S.).
- Surveys to detect the presence of new larval Sea Lamprey populations were conducted in 19 tributaries (3 Canada, 16 U.S.). No new infestations were detected.
- The Service completed 24 granular Bayluscide plots in U.S. waters of the lower St. Clair R., Sea Lamprey were captured in 7 of the plots. The Service also completed 8 granular Bayluscide plots

in the U.S. waters of the Detroit R., no Sea Lamprey were captured.

BARRIERS

- The Commission is working with Oakland County Parks to purchase property upstream of Yates Mill Dam on the Clinton River for river channel modifications to alleviate future bypass channel formation around the dam. Project partners plan to have a permittable project for construction by winter 2026.

- The Service is working to identify solutions focused on repairing nappe vibration spoilers that have fallen from the face of the Harpersfield Dam on the Grand River. Repairs are tentatively planned for summer of 2026.

- The engineering firm GEI has completed a feasibility study for the Flat Rock & Huroc dams fish passage project on the Huron River. The study has developed alternatives from repair to full removal of the dams. The Service and Commission are involved in design discussions to ensure effective Sea Lamprey blockage for each alternative. The Huron-Clinton Metropolitan Authority will select their preferred alternative.

- The USACE feasibility study identifying a new seasonal barrier location and design for Conneaut Creek was completed. The barrier would have limited lampricide exposure to sensitive native species. However, impacted landowners near the preferred location have rejected the project and the project will not move forward to construction.

- The Service is working with engineering firm Davey Resource Group to modify the Kirtland Country Club Dam on the East Branch Chagrin River. Modifications include lowering the barrier height and adding a low flow channel for improved sediment transport while maintaining the necessary drop to block Sea Lamprey migrations.

- The inflatable barrier at Big Creek and the stop log barrier at Normandale Creek went into operation in mid-March. All other barriers were maintained.

- The Big Otter Creek barrier in Tillsonburg is under review for possible replacement. Feasibility and design studies were completed in 2018.

RISK ASSESSMENT

- The Upper Midwest Environmental Sciences Center (USGS) conducted tests to determine the toxicity of TFM to larval (glochidia) and juvenile (<14 days old) life stages of the salamander mussels (*Simpsonaias ambigua*).

- Non-target mortality surveys were conducted in Ohio waters before, during, and after the TFM treatment (April 23–25) of Conneaut Creek with the Ohio Department of Natural Resources leading the effort.

CHARGE 3: Maintain an annual interagency electronic database of Lake Erie salmonid stocking for the STC, GLFC, and Lake Erie agency data depositories.

Mark Haffley (PFBC), Pascal Wilkins (NYSDEC), Amanda Popovich (ODNR), and John Buszkiewicz (MDNR), Tom MacDougall (OMNR)

Lake Trout Stocking

A total of 155,944 yearling Lake Trout were stocked in Lake Erie in 2025 (Figure 3.1). The USFWS Allegheny National Fish Hatchery stocked 73,627 yearlings in the eastern basin waters of New York. Ontario stocked 82,317 in 2025 off the Nanticoke Shoal. No Lake Trout were stocked in Pennsylvania or Ohio waters in 2025 due to power outages and disease issues at the Alleghany hatchery that resulted in a shortfall in production. The Lake Trout stocked in New York waters were a mix of Finger Lakes (Seneca) and Lake Champlain strains whereas Ontario stocked Seneca strain exclusively. The 2025 stocking was well below the annual Lake Trout stocking goal of 280,000 yearlings.

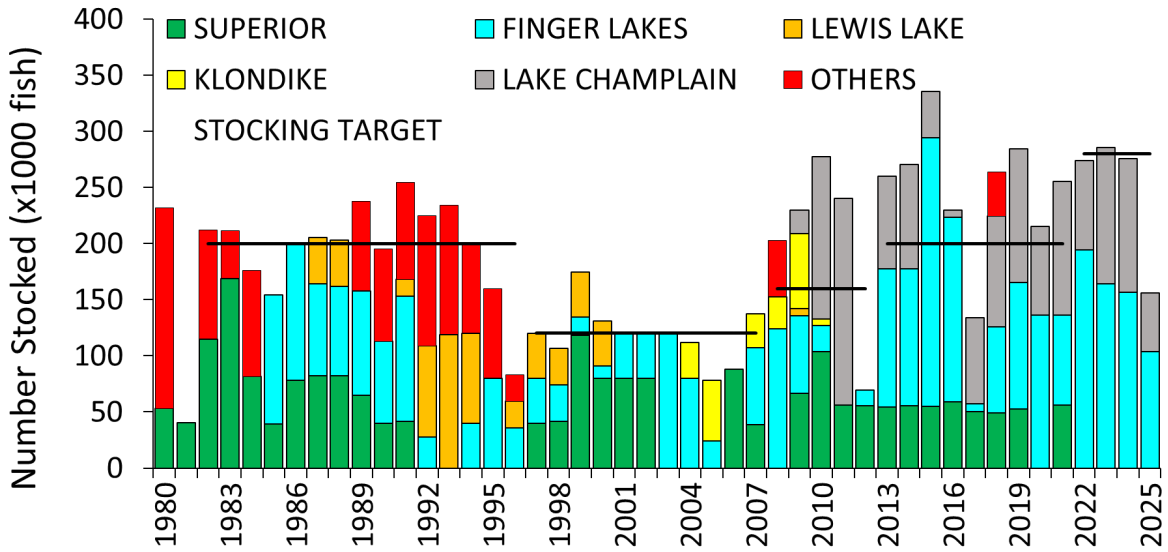


FIGURE 3.1. Lake Trout (in yearling equivalents) stocked by all jurisdictions in Lake Erie, 1980–2025, by strain. Stocking goals through time are shown by black lines dark lines; the current stocking goal is 280,000 yearlings per year. Superior includes Superior, Apostle Island, Traverse Island, Slate Island, and Michipicoten strains; Others include Clearwater Lake, Lake Ontario, Lake Erie, and Lake Manitou strains.

Stocking of All Salmonids

In 2025, over 1.4 million yearling trout were stocked in Lake Erie, including RainbowTrout (Steelhead), Brown Trout and Lake Trout (Figure 3.2). Total 2025 overall salmonid stocking decreased 28% from 2024 and was 34.4% below the long-term average (1990–2024). Annual summaries for each species stocked within individual state and provincial jurisdictions, standardized to yearling equivalents, are provided in Table 3.1.

All the US fisheries resource agencies and a few non-governmental organizations (NGO's) in Pennsylvania currently stock steelhead in the Lake Erie watershed. A total of 497,648 yearling Steelhead were stocked in Pennsylvania in 2025, accounting for 39.8% of all Steelhead stocked lakewide. This was a 39% decrease from 2024 and was well below the long-term average. The next highest contributor to lakewide steelhead stocking was Ohio (37.1%), followed by New York (15.3%), Ontario (4%) and Michigan (3.8%). The NYSDEC stocked 140,900 yearling steelhead and 50,250 domestic Rainbow Trout in New York waters in 2025, which collectively was slightly below their stocking target of 192,500

yearlings. Steelhead stocking in Ohio by the ODNR (464,538) was 3.2% above a target objective of 450,000 yearling steelhead. Pennsylvania steelhead stocking remains below their objective of 1 million yearlings. Ontario does not have specific targets for steelhead and all Ontario stocking is conducted by a local fishery club which the OMNR supports by providing their rearing and stocking program with steelhead as eyed-eggs. The Michigan DNR stocked 49,785 steelhead in the lower Huron River in 2025, essentially meeting their target number of 50,000 yearlings annually. The MI stocking target number was changed from 60, to 50 thousand yearlings in 2023. Specific details of stocking locations and numbers of fish per stream can be found in individual agency reports.

Brown Trout stocking in Lake Erie totaled 41,944 yearling and adults in 2025, all in Pennsylvania waters to provide catchable trout for the opening of the 2025 Pennsylvania trout season. This was roughly a 75% decrease from 2024 due to a shortfall at the hatchery. Pennsylvania looks to move forward with a sizable stocking increase to 300,000 Brown Trout to counter the decrease in steelhead smolt stocking. These fish are in support of a put-grow-take Bown Trout program that was initiated in 2009.

Coho Salmon have not been stocked since 2003, and Chinook Salmon have not been stocked since 1997 (Table 3.1.).

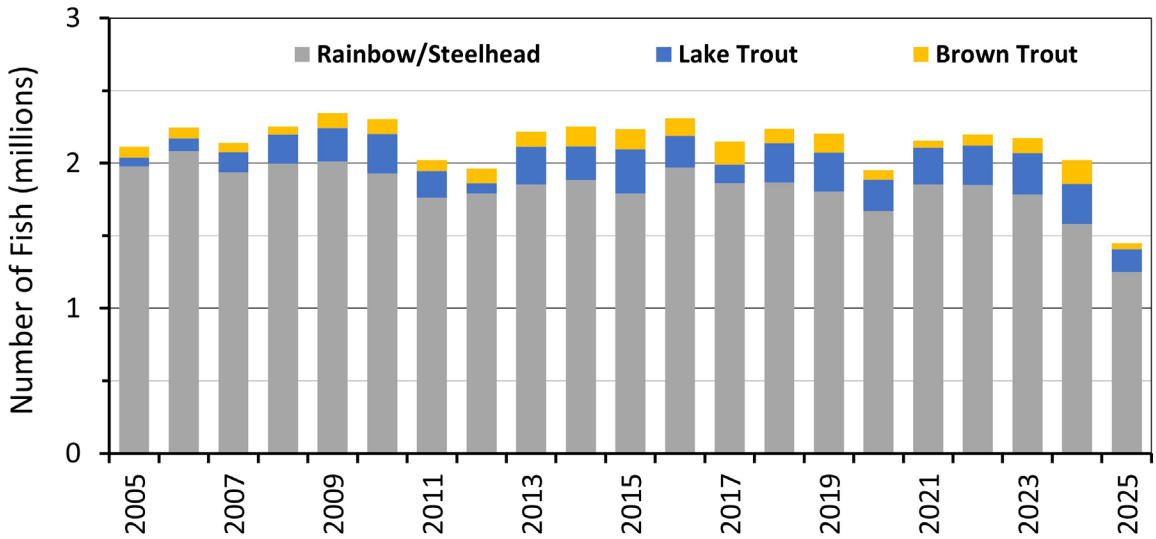


FIGURE 3.2. Annual stocking of all salmonid species (in yearling equivalents) in Lake Erie by all agencies, 2005–2025.

TABLE 3.1. Summary of salmonid stocking in numbers of yearling equivalents, Lake Erie, 1990–2025.

YEAR	Jurisdiction	Lake Trout	Coho	Chinook	Brown Trout	Rainbow/Steelhead	Total
1990	ONT					31,530	31,530
	NYS DEC	113,730	5,730	65,170	48,320	160,500	393,450
	PFBC	82,000	249,810	5,670	55,670	889,470	1,282,620
	ODNR					485,310	485,310
	MDNR				51,090	85,290	136,380
	1990 Total	**195,730**	**255,540**	**70,840**	**155,080**	**1,652,100**	**2,329,290**
1991	ONT					98,200	98,200
	NYS DEC	125,930	5,690	59,590	43,500	181,800	416,510
	PFBC	84,000	984,000	40,970	124,500	641,390	1,874,860
	ODNR					367,910	367,910
	MDNR				52,500	58,980	111,480
	1991 Total	**209,930**	**989,690**	**100,560**	**220,500**	**1,348,280**	**2,868,960**
1992	ONT					89,160	89,160
	NYS DEC	108,900	4,670	56,750	46,600	149,050	365,970
	PFBC	115,700	98,950	15,890	61,560	1,485,760	1,777,860
	ODNR					561,600	561,600
	MDNR					14,500	14,500
	1992 Total	**224,600**	**103,620**	**72,640**	**108,160**	**2,300,070**	**2,809,090**
1993	ONT				650	16,680	17,330
	NYS DEC	142,700		56,390	47,000	256,440	502,530
	PFBC	74,200	271,700		36,010	973,300	1,355,210
	ODNR					421,570	421,570
	MDNR					22,200	22,200
	1993 Total	**216,900**	**271,700**	**56,390**	**83,660**	**1,690,190**	**2,318,840**
1994	ONT					69,200	69,200
	NYS DEC	120,000		56,750		251,660	428,410
	PFBC	80,000	112,900	128,000	112,460	1,240,200	1,673,560
	ODNR					165,520	165,520
	MDNR					25,300	25,300
	1994 Total	**200,000**	**112,900**	**184,750**	**112,460**	**1,751,880**	**2,361,990**
1995	ONT					56,000	56,000
	NYS DEC	96,290		56,750		220,940	373,980
	PFBC	80,000	119,000	40,000	30,350	1,223,450	1,492,800
	ODNR					112,950	112,950
	MDNR					50,460	50,460
	1995 Total	**176,290**	**119,000**	**96,750**	**30,350**	**1,663,800**	**2,086,190**
1996	ONT					38,900	38,900
	NYS DEC	46,900		56,750		318,900	422,550
	PFBC	37,000	72,000		38,850	1,091,750	1,239,600
	ODNR					205,350	205,350
	MDNR					59,200	59,200
	1996 Total	**83,900**	**72,000**	**56,750**	**38,850**	**1,714,100**	**1,965,600**
1997	ONT				1,763	51,000	52,763
	NYS DEC	80,000		56,750		277,042	413,792
	PFBC	40,000	68,061		31,845	1,153,606	1,293,512
	ODNR					197,897	197,897
	MDNR					71,317	71,317
	1997 Total	**120,000**	**68,061**	**56,750**	**33,608**	**1,750,862**	**2,029,281**
1998	ONT					61,000	61,000
	NYS DEC	106,900				299,610	406,510
	PFBC		100,000		28,030	1,271,651	1,399,681
	ODNR					266,383	266,383
	MDNR					60,030	60,030
	1998 Total	**106,900**	**100,000**	**0**	**28,030**	**1,958,674**	**2,193,604**
1999	ONT					85,235	85,235
	NYS DEC	143,320				310,300	453,620
	PFBC	40,000	100,000		20,780	835,931	996,711
	ODNR					238,467	238,467
	MDNR					69,234	69,234
	1999 Total	**183,320**	**100,000**	**0**	**20,780**	**1,539,167**	**1,843,267**

TABLE 3.1. (Continued) Summary of salmonid stockings in number of yearling equivalents, 1990–2025.

YEAR	Jurisdiction	Lake Trout	Coho	Chinook	Brown Trout	Rainbow/Steelhead	Total
2000	ONT					10,787	10,787
	NYS DEC	92,200				298,330	390,530
	PFBC	40,000	137,204		17,163	1,237,870	1,432,237
	ODNR					375,022	375,022
	MDNR					60,000	60,000
	2000 Total	**132,200**	**137,204**	**0**	**17,163**	**1,982,009**	**2,268,576**
2001	ONT				100	40,860	40,960
	NYS DEC	80,000				276,300	356,300
	PFBC	40,000	127,641		17,000	1,185,239	1,369,880
	ODNR					424,530	424,530
	MDNR					67,789	67,789
	2001 Total	**120,000**	**127,641**	**0**	**17,100**	**1,994,718**	**2,259,459**
2002	ONT				4,000	66,275	70,275
	NYS DEC	80,000			72,300	257,200	409,500
	PFBC	40,000	100,289		40,675	1,145,131	1,326,095
	ODNR					411,601	411,601
	MDNR					60,000	60,000
	2002 Total	**120,000**	**100,289**	**0**	**116,975**	**1,940,207**	**2,277,471**
2003	ONT				7,000	48,672	55,672
	NYS DEC	120,000			44,813	253,750	418,563
	PFBC		69,912		22,921	866,789	959,622
	ODNR					544,280	544,280
	MDNR					79,592	79,592
	2003 Total	**120,000**	**69,912**	**0**	**74,734**	**1,793,083**	**2,057,729**
2004	ONT					34,600	34,600
	NYS DEC	111,600			36,000	257,400	405,000
	PFBC				50,350	1,211,551	1,261,901
	ODNR					422,291	422,291
	MDNR					64,200	64,200
	2004 Total	**111,600**	**0**	**0**	**86,350**	**1,990,042**	**2,187,992**
2005	ONT					55,000	55,000
	NYS DEC	62,545			37,440	275,000	374,985
	PFBC				35,483	1,183,246	1,218,729
	ODNR					402,827	402,827
	MDNR					60,900	60,900
	2005 Total	**62,545**	**0**	**0**	**72,923**	**1,976,973**	**2,112,441**
2006	ONT	88,000			175	44,350	132,525
	NYS DEC				37,540	275,000	312,540
	PFBC				35,170	1,205,203	1,240,373
	ODNR					491,943	491,943
	MDNR					66,514	66,514
	2006 Total	**88,000**	**0**	**0**	**72,885**	**2,083,010**	**2,243,895**
2007	ONT					27,700	27,700
	NYS DEC	137,637			37,900	272,630	448,167
	PFBC				27,715	1,122,996	1,150,711
	ODNR					453,413	453,413
	MDNR					60,500	60,500
	2007 Total	**137,637**	**0**	**0**	**65,615**	**1,937,239**	**2,140,491**
2008	ONT	50,000				36,500	86,500
	NYS DEC	152,751			36,000	269,800	458,551
	PFBC				17,930	1,157,968	1,175,898
	ODNR					465,347	465,347
	MDNR					65,959	65,959
	2008 Total	**202,751**	**0**	**0**	**53,930**	**1,995,574**	**2,252,255**
2009	ONT	50,000				18,610	68,610
	NYS DEC	173,342			38,452	276,720	488,514
	PFBC	6,500			64,249	1,186,825	1,257,574
	ODNR					458,823	458,823
	MDNR					70,376	70,376
	2009 Total	**229,842**	**0**	**0**	**102,701**	**2,011,354**	**2,343,897**

TABLE 3.1. (Continued) Summary of salmonid stockings in number of yearling equivalents, 1990–2025.

YEAR	Jurisdiction	Lake Trout	Coho	Chinook	Brown Trout	Rainbow/Steelhead	Total
2010	ONT	126,864				33,447	160,311
	NYS DEC	144,772			38,898	310,194	493,864
	PFBC	1,303			63,229	1,085,406	1,149,938
	ODNR					433,446	433,446
	MDNR					66,536	66,536
	2010 Total	**272,939**	**0**	**0**	**102,127**	**1,929,029**	**2,304,095**
2011	ONT					36,730	36,730
	NYS DEC	184,259			38,363	305,780	528,402
	PFBC				36,045	1,091,793	1,127,838
	ODNR					265,469	265,469
	MDNR					61,445	61,445
	2011 Total	**184,259**	**0**	**0**	**74,408**	**1,761,217**	**2,019,884**
2012	ONT	55,330				21,050	76,380
	NYS DEC				35,480	260,000	295,480
	PFBC				65,724	1,018,101	1,083,825
	ODNR	17,143				425,188	442,331
	MDNR					64,500	64,500
	2012 Total	**72,473**	**0**	**0**	**101,204**	**1,788,839**	**1,962,516**
2013	ONT	54,240				2,000	56,240
	NYS DEC	41,200			32,630	260,000	333,830
	PFBC	82,400			71,486	1,072,410	1,226,296
	ODNR	82,200				455,678	537,878
	MDNR					62,400	62,400
	2013 Total	**260,040**	**0**	**0**	**104,116**	**1,852,488**	**2,216,644**
2014	ONT	55,632				56,700	112,332
	NYS DEC	40,691			38,707	258,950	338,348
	PFBC	53,370			97,772	1,070,554	1,221,696
	ODNR	83,885				428,610	512,495
	MDNR					67,800	67,800
	2014 Total	**233,578**	**0**	**0**	**136,479**	**1,882,614**	**2,252,671**
2015	ONT	55,370				70,250	125,620
	NYS DEC	81,867			37,840	153,923	273,630
	PFBC	82,149			103,173	1,079,019	1,264,341
	ODNR	85,433				421,740	507,173
	MDNR					64,735	64,735
	2015 Total	**304,819**	**0**	**0**	**141,013**	**1,789,667**	**2,235,499**
2016	ONT	60,005				4,324	64,329
	NYS DEC	51,461			38,110	407,111	496,682
	PFBC	32,500			83,249	1,074,849	1,190,598
	ODNR	75,650				416,593	492,243
	MDNR					66,000	66,000
	2016 Total	**219,616**	**0**	**0**	**121,359**	**1,968,877**	**2,309,852**
2017	ONT	50,982				59,750	110,732
	NYS DEC	76,456			36,480	267,166	380,102
	PFBC				123,186	1,032,421	1,155,607
	ODNR					442,228	442,228
	MDNR					60,706	60,706
	2017 Total	**127,438**	**0**	**0**	**159,666**	**1,862,271**	**2,149,375**
2018	ONT	55,940				35,500	91,440
	NYS DEC	95,445				311,843	407,288
	PFBC	39,660			98,966	979,851	1,118,477
	ODNR	79,230				478,408	557,638
	MDNR					62,000	62,000
	2018 Total	**270,275**	**0**	**0**	**98,966**	**1,867,602**	**2,236,843**
2019	ONT	53,285					53,285
	NYS DEC	95,672				153,944	249,616
	PFBC	39,677			132,496	1,072,012	1,244,185
	ODNR	80,026				512,548	592,574
	MDNR					64,374	64,374
	2019 Total	**268,660**	**0**	**0**	**132,496**	**1,802,878**	**2,204,034**

TABLE 3.1. (Continued) Summary of salmonid stockings in number of yearling equivalents, 1990–2025.

YEAR	Jurisdiction	Lake Trout	Coho	Chinook	Brown Trout	Rainbow/Steelhead	Total
2020	ONT						0
	NYS DEC	135,997				187,280	323,277
	PFBC	79,450			66,883	949,000	1,095,333
	ODNR					469,265	469,265
	MDNR					64,374	64,374
	2020 Total	**215,447**	**0**	**0**	**66,883**	**1,669,919**	**1,952,249**
2021	ONT	56,197				67,062	123,259
	NYS DEC					194,569	194,569
	PFBC	80,618			46,607	1,091,197	1,218,422
	ODNR	118,523				498,972	617,495
	MDNR						0
	2021 Total	**255,338**	**0**	**0**	**46,607**	**1,851,800**	**2,153,745**
2022	ONT	74,866				43,225	118,091
	NYS DEC	119,100				189,835	308,935
	PFBC				75,082	1,079,958	1,155,040
	ODNR	79,800				470,912	550,712
	MDNR					64,670	64,670
	2022 Total	**273,766**	**0**	**0**	**75,082**	**1,848,600**	**2,197,448**
2023	ONT	83,670				60,533	144,203
	NYS DEC	80,515				173,827	254,342
	PFBC	120,800			103,394	1,028,892	1,253,086
	ODNR					464,898	464,898
	MDNR					55,795	55,795
	2023 Total	**284,985**	**0**	**0**	**103,394**	**1,783,945**	**2,172,324**
2024	ONT	79,505				32,992	112,497
	NYS DEC					215,104	215,104
	PFBC	78,664			163,394	817,488	1,059,546
	ODNR	117,022				466,520	583,542
	MDNR					50,048	50,048
	2024 Total	275,191	0	0	163,394	1,582,152	2,020,737
2025	ONT	82,317				48,291	130,608
	NYS DEC	73,627				191,150	264,777
	PFBC				41,944	497,648	539,592
	ODNR					464,538	464,538
	MDNR					49,785	49,785
	2025 Total	**155,944**	**0**	**0**	**41,944**	**1,251,412**	**1,449,300**

ACKNOWLEDGMENTS

The Coldwater Task Group members wish to thank the following people for their support during the past year:

- Matt Faust and Jim McFee, Ohio Department of Natural Resources, Division of Wildlife
- Megan Belore, Karen Soper and Arthur Bonsall, Ontario Ministry of Natural Resources
- Richard Kraus, Amanda Ackiss, Ed Roseman, and Robin DeBruyne, United States Geological Survey
- Peter Euclide – Indiana University Bloomington
- Tom Binder – GLATOS and Great Lakes Fishery Commission
- Nicholas Boucher, Great Lakes Fishery Commission
- Philippa Kohn, Sustainable Fisheries Ecologist, The Nature Conservancy – Western & Central NY
- Dimitry Gorsky and Collin Farrell, U.S. Fish and Wildlife Service
- Taylor Brown, Cornell University

The Coldwater Task Group report could not be completed without the contributions of all Lake Erie staff from the Michigan Department of Natural Resources, Ohio Division of Wildlife, Pennsylvania Fish and Boat Commission, New York Department of Environmental Conservation, United States Geological Survey, and the Ontario Ministry of Natural Resources. In addition, the Coldwater Task Group expresses our thanks to the Great Lakes Fishery Commission and the Great Lakes Acoustic Telemetry Observation System for their continued support.

DISCLAIMER STATEMENT

REFERENCES

Amidon, Z.J., S.S. Qian, R.L. DeBruyne, M.R. Dufour, C.M. Mayer, E.F. Roseman and A. Sakas. 2025. A Bayesian hierarchical model framework to create a relative cohort strength index for sparse catch data from bottom trawls [unpublished manuscript]. University of Toledo Lake Erie Center, Department of Environmental Sciences, 6200, Bayshore Rd., Oregon, OH 43616, USA.

Barber, J., M. Steeves 2020. Sea Lamprey Control in The Great Lakes 2020. Annual Report to The Great Lakes Fishery Commission, Ann Arbor, Michigan, USA.

Barbiero, R. P., L. G. Rudstam, J. M. Watkins, and B. M. Lesht. 2019. A cross-lake comparison of crustacean zooplankton communities in the Laurentian Great Lakes, 1997–2016. Journal of Great Lakes Research 45(3):672–690.

Brown, T.A., Rudstam, L.G., Sethi, S.A., Ripple, P., Smith, J.B., Treska, T.J., Hessell, C., Olsen, E., He, J.X., Jonas, J.L., Rook, B.J., Blankenheim, J.E., Beech, S.J.H., Brown, E., Berglund, E.K., Cook, H.A., Dunlop, E.S., James, S., Pothoven, S.A., Amidon, Z.J., Sweka, J.A., Carl, D.D., Hansen, S.P., Bunnell, D.B., Weidel, B.C., and Honsey, A.E. 2024a. Reconstructing half a century of coregonine recruitment reveals species-specific dynamics and synchrony across the Laurentian Great Lakes. ICES Journal of Marine Science 82(2): fsae160. doi:10.1093/icesjms/fsae160.

Brown, T.A., Rudstam, L.G., Sethi, S.A., Hessell, C., Olsen, E., Jonas, J.L., Rook, B.J., Pothoven, S.A., Beech, S.J.H., Dunlop, E.S., James, S., Smith, J.B., Amidon, Z.J., Carl, D.D., Bunnell, D.B., Tingley, III, R.W., Weidel, B.C., and Honsey, A.E. 2024b. Synthesizing professional opinion of Lake Whitefish and cisco recruitment drivers across the Great Lakes. Laurentian 2024(01). doi:10.70227/glfc-laur20240101.

Bunnell, D.B., Ackiss, A.S., Alofs, K.M., Brant, C.O., Bronte, C.R., Claramunt, R.M., Dettmers, J.M., Honsey, A.E., Mandrak, N.E., Muir, A.M., Jr, V.J.S., Smith, D.R., Strach, R.M., Sweka, J.A., Weidel, B.C., Mattes, W.P., and Newman, K.R. 2023. A science and management partnership to restore coregonine diversity to the Laurentian Great Lakes. Environmental Reviews 31(4): 716–738. doi:10.1139/er-2022-0109.

Coldwater Task Group. 2023. 2022 Report of the Lake Erie Coldwater Task Group, March 2023. Presented to the Standing Technical Committee, Lake Erie Committee of the Great Lakes Fishery Commission, Ann Arbor, Michigan, USA.

Coldwater Task Group. 2022. 2020 Report of the Lake Erie Coldwater Task Group, March 2022. Presented to the Standing Technical Committee, Lake Erie Committee of the Great Lakes Fishery Commission, Ann Arbor, Michigan, USA.

Coldwater Task Group. 2020. 2019 Report of the Lake Erie Coldwater Task Group, March 2020. Presented to the Standing Technical Committee, Lake Erie Committee of the Great Lakes Fishery Commission, Ann Arbor, Michigan, USA.

Coldwater Task Group. 2018. MacDougall, T., J. Markham, Z. Biesinger, J. Braunscheidel, A. Cook, C. Eilers, R. Kraus, S. Marklevitz, C. Murray, M. Rogers, G. Steinhart, K. Tallon, J. Trumpickas, C. Vandergoot, J. Boase, P. Penton, M. Belore, M. Faust, T. Hartman, K. Soper, A. Gorman and R. Drouin. Charge 8. The current state of knowledge of Lake Whitefish populations in Lake Erie, including knowledge gaps, impediments, uncertainties, and recommendations for strategies to advise management. Presented to the Standing Technical Committee, Lake Erie Committee of the Great Lakes Fishery Commission, Ann Arbor, Michigan, USA.

Coldwater Task Group. 1997. 1996 Report of the Coldwater Task Group, March 1997. Presented to the Standing Technical Committee' Lake Erie Committee of the Great Lakes Fishery Commission, Ann Arbor, Michigan, USA.

Cook, A., R. Kraus, M. Faust, J.D. Schmitt, A.L. Sakas, Y. Zhao and C.S. Vandergoot. 2023. Lake Erie Whitefish Mortality Estimation Using Acoustic Telemetry. Conference presentation abstract. In proceedings of the 66th Annual Conference on Great Lakes Research, convened by the International Association for Great Lakes Research (IAGLR), Toronto, Ontario, Canada, May 8-12, 2023.

DeBruyne, R.L, Z.A. Amidon, M. Angelosanto, E. Eberly, D. Gorsky. 2024. Broad scale community-level larval fish survey of southern Lake Erie. Aquatic Ecosystem Health & Management, 27(1): 98–115,

Dechtiar, A.O. and S. Nepszy 1988. Survey of selected parasite fauna of selected fish species from Lake Erie 1970-75. In Parasites of Fishes in the Canadian Waters of the Great Lakes. Great Lakes Fishery Commission Technical Report No. 51.

Edwards, W.H., M.A. Stapanian, A.T. Stoneman. 2011. Precision of Two Methods for Estimating Age from Burbot Otoliths. Journal of Applied Ichthyology 27 (Supplement 1): 43–48.

Eshenroder, R.L., Vecsei, P., Gorman, O.T., Yule, D., Pratt, T.C., Mandrak, N.E., Bunnell, D.B. and A.M. Muir. 2016. Ciscoes (*Coregonus*, subgenus *Leucichthys*) of the Laurentian Great Lakes and Lake Nipigon. Great Lakes Fisheries Commission Misc. Pub. 16-01.

Euclide,P.T., R. T. Kraus, A. Cook, J. L. Markham, J. D. Schmitt. 2022. Genome-wide genetic diversity may help identify fine-scale genetic structure among Lake Whitefish spawning groups in Lake Erie. Journal of Great Lakes Research, 48(5) p. 1298–1305, ISSN 0380-1330.

Francis, J., Hartman, T., Kuhn, K., Locke, B., and Robinson, J. 2020 [online]. Fish community objectives for the Lake Erie basin [online]. Available from www.glfc.org/pubs/FisheryMgmtDocs/Fmd20-01.pdf [accessed 26 March 2023.

Harrod, C. and D. Griffiths. 2005. *Ichthyocotylurus erraticus* (Digenea:Strigeidae): factors affecting infection intensity and the effects of infection on pollan (*Coregonus autumnalis*), a glacial relict fish. Parasitology. 131 511–519.

Kraus, R.T., H. Andrew Cook, M.D. Faust, J. D. Schmitt, M. D. Rowe, C.S. Vandergoot. 2023. Habitat selection of a migratory freshwater fish in response to seasonal hypoxia as revealed by acoustic telemetry, Journal of Great Lakes Research, https://doi.org/10.1016/j.jglr.2023.01.004.

Kraus, R.T., H.A. Cook, A. Sakas, T.M. MacDougall, M.D. Faust, J.D. Schmitt and C.S. Vandergoot. 2024. Risk of capture is modified by hypoxia and interjurisdictional migration of Lake Whitefish (Coregonus clupeaformis). Sci Rep 14, 18061. https://doi.org/10.1038/s41598-024-65147-5.

Kraus, R.T., Markham, J., Robinson, J., MacDougall, T., Faust, M.D., Schmitt, J.D., Vandergoot, C.S., McKenna Jr, J.E. and D. Gorsky. 2024. On the survival and habitat use of hatchery-reared cisco (*Coregonus artedi*) in Lake Erie. Journal of Great Lakes Research 50(3) p.102343.

Markham, J.L., J.M. Robinson, C.C. Wilson, C.S. Vandergoot, P.D. Wilkins, R.C. Zimar, and M.N. Cochrane. 2022. Evidence of Lake Trout (*Salvelinus namaycush*) natural reproduction in Lake Erie. Journal of Great Lakes Research, https://doi.org/10.1016/j.jglr.2022.09.013 OR 48:6, 1728–1734.

Muzzall, P.M. and Whelan, G. 2011. Parasites of Fish from the Great Lakes: A Synopsis and Review of the Literature, 1871-2010. Great Lakes Fish. Comm. Misc. Publ. 2011-01.

O'Donnell, D. R., R. Briland, R. R. Budnik, S. A. Ludsin, and J. M. Hood. 2023. Trends in Lake Erie zooplankton biomass and community structure during a 25-year period of rapid environmental change. Journal of Great Lakes Research 49(3):685–697.

Pauly, D. 1984. Fish population dynamics in tropical waters.: a manual for use with programmable calculators. ICLARM Studies and Reviews 8, 325 p. International Center for Living Aquatic Resources Management, Manila, Philippines.

Schmitt, J.D., Fischer, D.P., Kao, Y.C., Frey, A., Chalupniki, M., McKenna Jr, J.E., Phillips, K., DuFour, M.R., Kraus, R.T. and R.L. Eshenroder. 2024. Historical and morphological evidence for a remnant population of Lake Erie cisco *Coregonus artedi (albus)* in Crystal Lake, Pennsylvania. Journal of Great Lakes Research 51(2) p.102540.

Spitz, B.J., Montague, G.F., Schmitt, J.D., Gozzo, F., and P.I. Jenkins. 2025. First evidence of Lake Trout Salvelinus namaycush spawning aggregation in Ohio waters of Lake Erie following reintroduction. Journal of Great Lakes Research 50(2) p.102540.

Van Oosten, J. and R. Hile. 1947. Age and growth of the Lake Whitefish, *Coregonus clupeaformis* (Mitchill), in Lake Erie. Transactions of the American Fisheries Society 77: 178–249.