

Forage Task Group Executive Summary

March 2025

Lake Erie Committee

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



Introduction

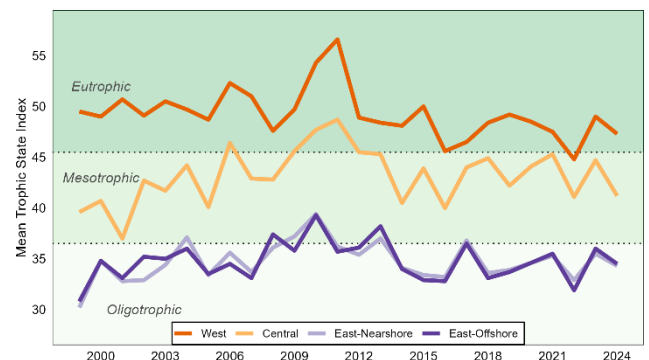
The Lake Erie Committee Forage Task Group (FTG) report addresses progress made on four charges:

1. Report on the results of the interagency lower trophic level monitoring program and status of trophic conditions as they relate to the Lake Erie Environmental Priorities.
2. Describe the status and trends of forage fish in each basin of Lake Erie and evaluate alternate data sources and methods to enhance description of forage fish abundance.
 - 2.1. Describe forage fish abundance and status using trawl data.
 - 2.2. Report on the diets of important Lake Erie predator fish where available.
 - 2.3. Describe growth and condition of Walleye, Lake Trout, and Black Bass.
3. Continue hydro acoustic assessment of the pelagic forage fish community in Lake Erie, while incorporating new methods in survey design and analysis following the GLFC's Great Lakes Hydro Acoustic Standard Operating Procedures where possible/feasible.
4. Act as a point of contact for any new/novel invasive aquatic species and incorporate into the USGS Nonindigenous Aquatic Species database.

The complete report is available from the Great Lakes Fishery Commission's Lake Erie Committee Forage Task Group website (<http://www.glfc.org/lake-erie-committee.php>) or upon request from a Lake Erie Committee, STC, or FTG representative.

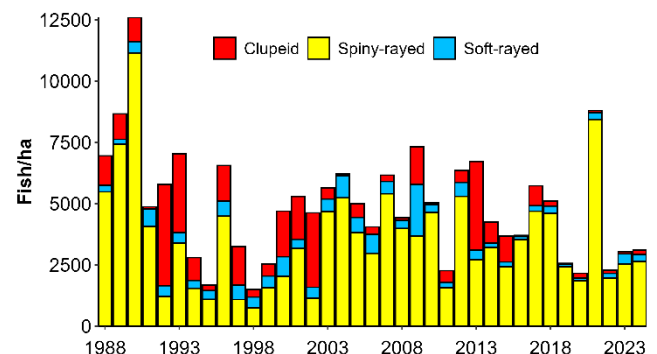
Interagency Lower Trophic Level Monitoring

The Lower Trophic Level Assessment monitoring program has measured nine environmental variables at 18 stations around Lake Erie since 1999 to characterize trends in lake productivity. In 2024, lake productivity was down compared to 2023. The Trophic State Index, which is a combination of phosphorus levels, water transparency, and chlorophyll *a*, indicated that the Central Basin was within the targeted mesotrophic status. The West Basin remained in the above-target eutrophic classification. The East Basin offshore and nearshore areas were oligotrophic in 2024. Low hypolimnetic dissolved oxygen continues to be an issue in the Central Basin during the summer months.



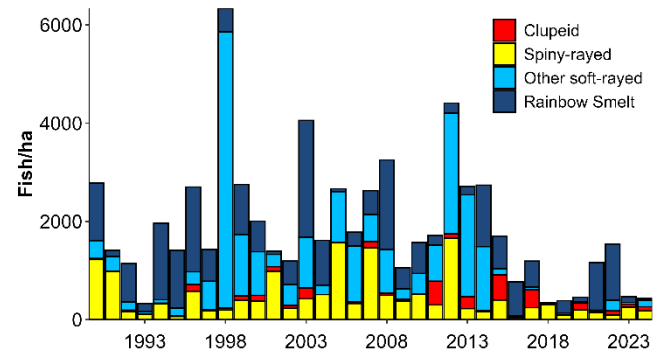
West Basin Status of Forage

In 2024, data from 73 trawl tows were used (up from 71 in 2023). Total forage density averaged 3,108 fish per hectare across the West Basin, similar to moderate levels in 2019–2020 and 2022–23. Forage biomass (13.9 kg/ha) decreased 26% from 2023. Age-0 White Perch abundance (1,889/ha) decreased. Age-0 Yellow Perch density (673/ha) was nearly double that of 2023 (381/ha). Age-0 Gizzard Shad abundance (141/ha) remained below the ten-year mean (647/ha). Age-0 Alewife density (47/ha) was the largest since 2002. Densities of Emerald Shiners have remained low for nine years. Round Goby abundance (20/ha) remained below the ten-year mean (27/ha).



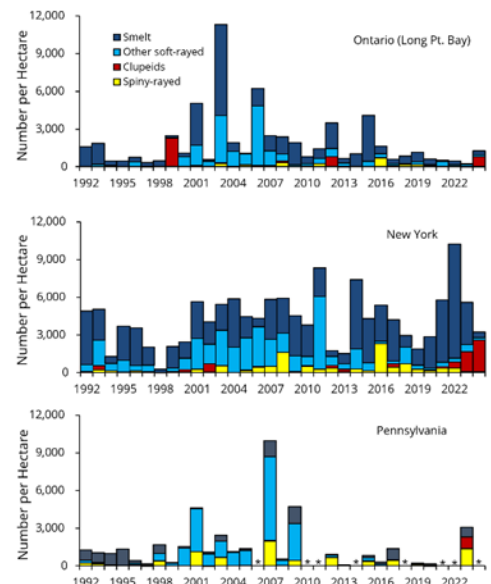
Central Basin Status of Forage

In 2024, 47 trawl tows were completed in the Ohio waters of the Central Basin. Total forage density averaged 515 fish per hectare across the Central Basin, which was similar to 2023. Total forage biomass was 5.524 kg/ha, well below the long-term mean. Age-0 Rainbow Smelt density decreased from 2023 and was well below the long-term average. Age-1+ Rainbow Smelt density decreased from 2023 and was well below the long-term mean. Round Goby indices increased compared to 2023 but were still below the long-term mean. Spiny-rayed forage density (177/ha) decreased slightly from 2023. Age-0 Yellow Perch density increased from 2023; however, these continue to be some of the lowest densities in the time series. Walleye densities were above the long-term mean.



East Basin Status of Forage

In 2024, overall forage fish densities were below time series averages in New York and offshore Ontario waters, although densities in Ontario increased from 2023. Total forage biomass was 26.1 kg/ha in New York waters and was the fourth highest level in the time series. Catches of age-0 and age-1+ Rainbow Smelt were low in both Ontario and New York. Emerald Shiner catches of age-0 and age-1+ decreased far below the time series average in New York waters. Catches of Emerald Shiner in Ontario remain low in 2024. Round Goby densities were below average in New York but above average in Ontario. Abundance of Alewife (mainly age-0) was the highest in the time series in New York and the second highest in the Ontario time series. Average numbers of age-0 Walleye were caught in New York and below-average catches of age-1 Yellow Perch. Catch of Age-0 Lake Whitefish was at the fourth highest level in the time series in New York waters. Catches of most other species were low, although Trout-perch abundance increased in Ontario waters. Pennsylvania intended to trawl in 2024, but boat mechanical issues and scheduling conflicts prevented sampling.



Hydroacoustic Assessments

The primary purpose of Lake Erie hydroacoustic surveys is to estimate densities of important forage fishes in each basin of Lake Erie in July during the new moon. After completing several years of comparison studies, the hydroacoustic surveys in Lake Erie adopted a common stratified, random transect design. The standardization of the survey design allows for results to be generated lake wide and by basin. In 2024, a total of 480 km of transects were sampled, 65 water column profiles were measured, and 43 companion mid-water trawls were towed (the latter in the Central Basin only). Densities of fish (number per hectare) were highest in the West Basin, followed by the East Basin, and lowest in the Central Basin. In the East Basin, age-1+ Rainbow Smelt density declined in 2024 relative to 2023 but was still well above the time series low observed in 2019. In the Central Basin, total density of fish remained low in 2024, with Rainbow Smelt being the most abundant species in both the epilimnion and hypolimnion. In the West Basin, prey fish density decreased in 2024 to just below the time series average.

Aquatic Invasive Species

In 2024, the U.S. Fish and Wildlife Service (USFWS) Early Detection and Monitoring program did not capture any novel aquatic invasive species (AIS). No other Lake Erie agency encountered a novel AIS, either. However, the USFWS captured a total of 8 Western Mosquitofish (*Gambusia affinis*) in 2024: 2 in Maumee River, OH and 6 in Sandusky Bay, OH. According to the USGS Nonindigenous Aquatic Species Database, this species was previously detected in Maumee Bay in 1981 and Sandusky River in 2023. Additionally, commercial fishermen captured a total of 2 hybrid striped bass (*Morone chrysops* x *M. saxatilis*) in 2024: 1 near Port Burwell, ON and 1 near Magee Marsh, OH. The FTG is continuing work towards incorporating the FTG Aquatic Invasive Species database as well as other agency data into the USGS Nonindigenous Aquatic Species database so that the data can be archived and help track AIS on a greater geographic scale.