

COLDWATER TASK GROUP EXECUTIVE SUMMARY REPORT MARCH 2018

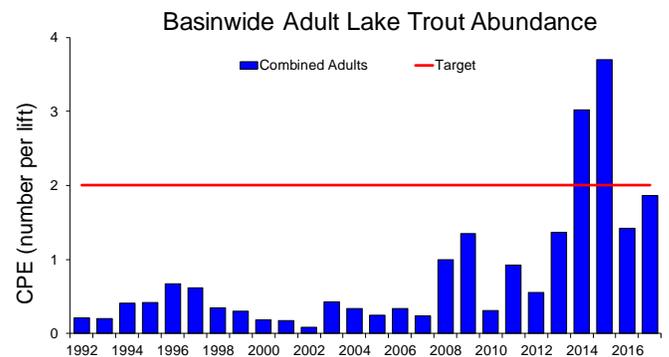


Introduction

This year's Lake Erie Committee (LEC) Coldwater Task Group (CWTG) has produced an Executive Summary Report encapsulating information from the CWTG annual report. Eight charges were addressed by the CWTG during 2017-2018: (1) Lake Trout assessment in the eastern basin; (2) Lake Whitefish fishery assessment and population biology; (3) Burbot fishery assessment and population biology; (4) Participation in Sea Lamprey assessment and control in the Lake Erie watershed; (5) Maintenance of an electronic database of Lake Erie salmonid stocking information; (6) Steelhead fishery assessment and population biology, (7) Development of a Cisco impediments document and (8) Prepare a report addressing the current state of knowledge of Lake Whitefish populations in Lake Erie. The complete report is available from the Great Lakes Fishery Commission's Lake Erie Committee Coldwater Task Group website at <http://www.glfsc.org/lakecom/lec/CWTG.htm>, or upon request from an LEC or CWTG representative.

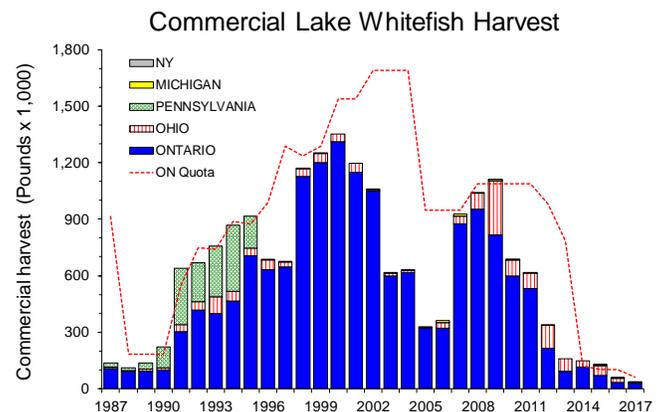
Lake Trout

A total of 368 Lake Trout were collected in 120 unbiased gill net lifts across the eastern basin of Lake Erie in 2017. Basin-wide Lake Trout abundance (weighted by area) was 2.5 fish per lift, which is near average for the time series but well below the rehabilitation target of 8.0 fish/lift. However, adult abundance (ages 5+) was at its third highest measure in the time series and slightly below the target of 2.0 fish/lift. Lake Trout ages 5 and 7-9 were the dominate cohorts with Lake Trout older than age-10 only sporadically caught. Finger Lakes and Lake Champlain strain Lake Trout comprise the majority of the population. The Lake Erie Lake Trout population continues to be supported by binational stocking efforts; natural reproduction has not been documented in Lake Erie despite more than 30 years of restoration efforts.



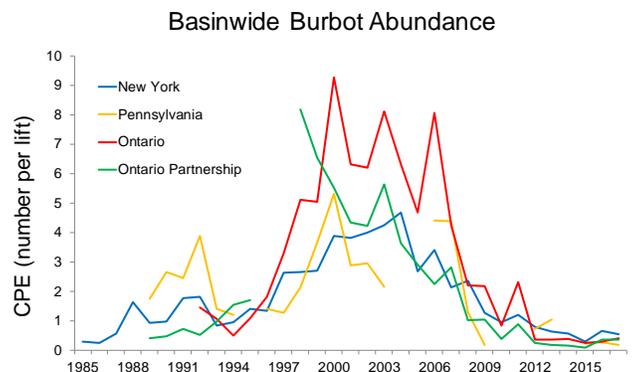
Lake Whitefish

Lake Whitefish harvest in 2017 was 31,539 pounds, distributed among Ontario (98%), Ohio (2%) and Pennsylvania (<1%). Lake Whitefish were not targeted by any fisheries in 2017. Gillnet fishery age composition ranged from 2 to 25. The 2015 year class (age 2) comprised the largest fraction (59%) of the Lake Whitefish gill net fishery. Gill net surveys caught Lake Whitefish from age 1 to 25, with age 2 most abundant. Lake Whitefish population growth is anticipated with additional contribution from the 2015 year class in 2018. Conservative harvest of Lake Whitefish is recommended until Lake Whitefish spawner biomass improves.



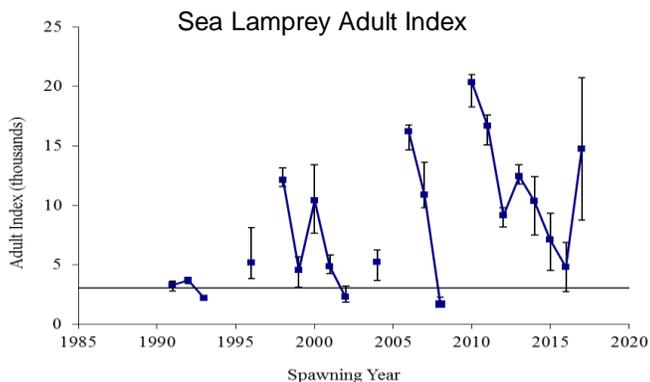
Burbot

Total commercial harvest of Burbot in Lake Erie in 2017 was 1,408 pounds (638 kg), of which 65% came from Ontario waters. Burbot abundance and biomass indices from annual Coldwater and Ontario Partnership Gillnet Assessments remained at low levels in all jurisdictions in 2017, continuing a downward trend since the early-2000s. Agency catch rates in Coldwater Assessments averaged 0.5 Burbot per lift and Ontario Partnership Assessments 0.4 Burbot per lift, representing a 95% decline from mean catch rates observed in 2000-2004. Burbot in Coldwater Assessments ranged from 1 to 22 years of age in 2017. Burbot age-4 and younger made up 40% of the fish caught, showing evidence of recruitment not seen recently. Round Goby and Rainbow Smelt continue to be the dominant prey items in Burbot diets.



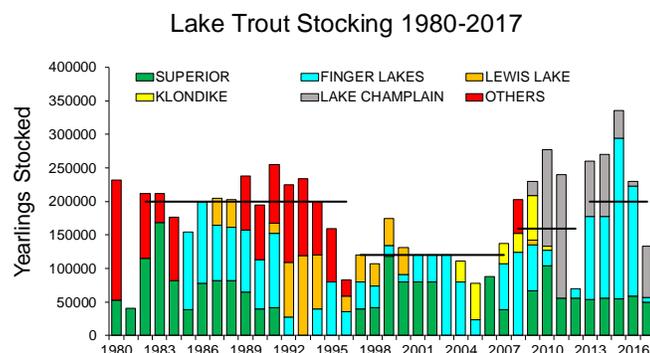
Sea Lamprey

The A1-A3 wounding rate on Lake Trout over 532 mm was 17.3 wounds per 100 fish in 2017. This was higher than the 10-year wounding rate (12.7 wounds/100 fish) and over 3 times the target rate of 5.0 wounds per 100 fish. Wounding rates have been above target for 21 of the past 22 years. Large Lake Trout over 635 mm continue to be the preferred targets for Sea Lamprey in Lake Erie. The estimated number of adult Sea Lamprey (14,743) was the fourth highest in the series and represents a substantial increase compared to recent estimates and well above the target population of 3,039. Comprehensive stream evaluations continued in 2017, including extensive detection surveys around the basin to inventory all sources contributing to the Lake Erie population.



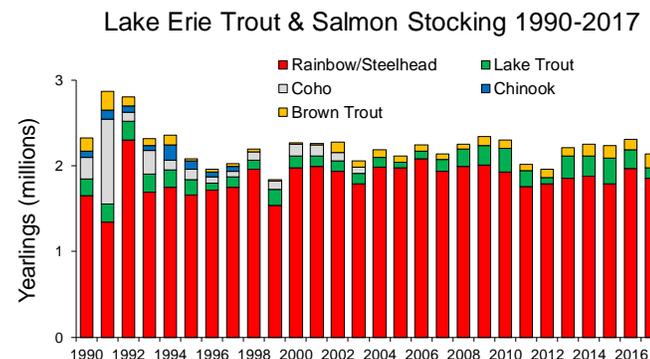
Lake Erie Salmonid Stocking

A total of 2,149,376 salmonids were stocked in Lake Erie in 2017, which was 4% below the long-term average (1990-2016). Lake Trout stocking was below targets for the first time in the past five years due to a large-scale mortality event at the Allegheny National Fish Hatchery. By species, there were 127,439 yearling Lake Trout stocked in all three basins of Lake Erie, 159,666 Brown Trout stocked in New York and Pennsylvania waters, and 1,862,271 Steelhead/Rainbow Trout stocked across all five jurisdictional waters.



Steelhead

All agencies stocked yearling Steelhead in 2017. The summary of Steelhead stocking in Lake Erie by jurisdictional waters for 2017 is: Pennsylvania (1,032,421; 56%), Ohio (442,228; 24%), New York (267,166; 14%), Michigan (60,706; 3%) and Ontario (59,750; 3%). Total Steelhead stocking in 2017 (1.862 million) was near the long-term average. Annual stocking numbers have been consistently in the 1.7-2.0 million fish range since 1993. The summer open lake Steelhead harvest was estimated at 9,047 Steelhead across all US agencies in 2017, about an 87% increase compared to 2016 estimates and 5% higher than average harvest of 8,600 steelhead from 2007-16. Overall open lake catch rates remain near the long-term average, but reported effort remains small relative to percids. Tributary angler surveys, representing the majority (>90%) of the targeted fishery effort for Steelhead, found average catch rates of 0.35 fish/hour between 2009 and 2016.



Cisco

Historically Cisco played an important ecological role as the primary planktivorous prey fish in Lake Erie, and once supported a large commercial fishery. The population collapsed in the mid-1920s with a limited fishery persisting into the 1950s. The desirability of this species, both as a stabilizing influence on the coldwater food web and as a support for Lake Trout restoration, has been recognized in fishery objectives and management documents. To inform management decisions about the feasibility of re-establishing Cisco in Lake Erie, a technical document, "Impediments to the Rehabilitation of Cisco (*Coregonus artedii*) in Lake Erie" (The Impediments Document), was completed by the CWTG in April 2017. It outlines perceived risks, benefits, and impediments to rehabilitation and attempts to describe the current status of Lake Erie Cisco. Generally described as extirpated in Lake Erie, in recent decades this status has been confounded by regular observations of small numbers (1-7) annually recovered from commercial trawl and gillnet fisheries. The Impediments Document, citing morphometric and genetic analyses of contemporary and historic samples collected from Lake Erie, Lake Huron, and in the connecting Huron-Erie Corridor (HEC), concludes that remnant Lake Erie stocks of historic *Coregonus artedii* likely no longer exist. Contemporary observations do not represent a pre-collapse archetype, specifically adapted to the lake, but rather an amalgam of sources and morphotypes, including possible hybridization. Subsequent genetic analysis in 2017 (Stott et al., 2018) supports this conclusion. Further, it determined that most contemporarily obtained individuals from Lake Erie and the HEC are not in fact *C. artedii*, but are actually Bloater (*C. hoyi*), resembling a Lake Huron population. Despite resolving questions about the existence of a remnant Lake Erie stock, the Impediments Document makes clear that management decisions about Cisco rehabilitation in Lake Erie currently must still contend with a variety of unknowns concerning the feasibility of success.