

Skaneateles Lake Finger Lakes Standard Netting (Survey #:721113) Emily Zollweg-Horan, Region 7 Fisheries

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Skaneateles Lake is 8,960 acres in area with a maximum depth of 315 feet and an average depth of 145 feet. Located west of Syracuse, within portions Onondaga, Cortland and Cayuga counties, the watershed is largely rural in nature. The Village of Skaneateles is situated at the north end at the outlet to Skaneateles Creek. Skaneateles Lake is part of the Oswego River watershed, which drains to Lake Ontario. Boating access is available at the DEC launch on the northwest side, at the town launches at Mandana and Scott, and at private marinas around the lake. The lake provides excellent fishing opportunities for smallmouth bass, yellow perch, and lake trout, and some of the best shore fishing for rainbow trout in the Finger Lakes. Grout Brook, located at the south end of the lake, supports a popular spring fishery for wild, lake-run rainbow trout. Two strains of rainbow trout (Finger Lakes wild strain, and Finger Lakes hybrid strain) are stocked by DEC, along with landlocked Atlantic salmon. Walleye have been reported by anglers in recent years. The lake is oligotrophic, steep-sided, and deep and has a history of excellent water quality. Modest littoral areas supporting areas of dense aquatic vegetation are present at the north and south ends of the lake and a narrow littoral fringe extends along the length of the eastern and western shorelines. Management concern for the lake include harmful algal blooms, Viral Hemorrhagic Septicemia virus (VHSV), declining angler catches of rainbow trout and landlocked Atlantic salmon, and an expanding walleye population.

During late July and early August 2021, the regional fisheries unit surveyed the coldwater fish community of Skaneateles Lake using standard Finger Lakes gang gill nets and standard netting sites. The main objectives of this survey were to determine the densities of lake trout and cisco (lake herring), evaluate survival of stocked rainbow trout strains and to obtain information on species composition and forage base. We also set 6 additional nets in shallower water to find rainbow trout and to sample the warmwater community. Previous "standard gang" surveys carried out in 1977, 1980, 1983, 1989, 2008, and 2012 used multifilament gill nets. For this survey and the 2017 survey, monofilament gill nets were used. Twenty sets targeting lake trout were on bottom and below the thermocline either perpendicular or oblique to shore depending on the steepness of the lake bottom at the net site. Five sets targeting all fish were on the bottom and above the thermocline and perpendicular to shore. Each net was set overnight.

A total of 527 fish were collected including 135 lake trout, 10 white suckers, 213 yellow perch, 63 smallmouth bass, 4 cisco, 56 rock bass, 2 rainbow trout, 31 walleye, no Atlantic salmon and one brown trout. Lake trout have not been stocked in Skaneateles Lake for many years; therefore, all the lake trout collected were considered wild. Ages of 358 fish were determined by scale aging. A sample of ten lake trout collected were sent to the Hale Creek Field Station for contaminant analysis.

An average of 9.5 lake trout were caught per net in the 2017 survey, compared to 6.8 lake trout per net in this survey (2021). Because studies conducted in other Finger Lakes showed that monofilament nets, on average, caught nearly twice as many (1.8X) lake trout than identically configured multifilament nets, catches from this survey must be adjusted down for comparative purposes. The 2021 adjusted catch rate of lake trout (3.8/gillnet) is less than the long-term average of 5.0 lake trout caught per net and would rank as the third lowest in the time series (see Table 1). Overall, the lake trout catch in the Skaneateles Lake standard gang surveys has been indicative of a stable, light to medium density population maintained entirely by natural reproduction.

The 2012 survey was the first standard gang survey where ciscoes were not collected. Fortunately, we caught cisco in both the subsequent surveys. The average number of ciscoes caught per net in previous surveys is shown in Table 1. We assume ciscoes were present in Skaneateles Lake in 2012, but their numbers must have been so low that a standard gang survey could not effectively measure their relative density. The results of the standard gang surveys show that at some time after the 1989 survey, the cisco population experienced a precipitous decline. The reason for this decline is unknown but could be related to an outbreak of VHSV that killed thousands of Skaneateles Lake smallmouth bass and rock bass in 2007. While we were successful at catching cisco in 2017 and 2021, it will be quite some time before the population can be considered recovered. The recently established



walleye population could also impact cisco recovery since they are efficient predators of cisco and are expected to continue their population expansion in the coming years if left unchecked.

Table 1. Average number of fish caught per gill net by year.

Year	Average number of lake trout per net	Average number of cisco per net
1977	3.5	3.7
1980	3.7	4.0
1983	4.4	5.2
1989	6.8	7.2
2008	6.4	0.4
2012	4.1	0
2017	5.3*	0.6
2021	3.8*	0.2

*monofilament catch adjusted

Walleye captured in this survey ranged in length from 265 mm to 649 mm (10.4 to 25.6 inches), and the largest weighed 2668 grams or 5.8 lbs. Scale and/or otolith analysis indicated that most were age 2 to 5 years but several older walleye were also caught. The catch rate for walleye from the five sets in their preferred habitat was over six fish per net, which is a moderately high catch rate. These factors combined with recent sharp declines in angler catches of rainbow trout and Atlantic salmon are cause for concern. Walleye were not legally introduced to Skaneateles Lake and given the presence of multiple ages capable of reproduction along with the availability of suitable spawning habitat in the lake and several inlet streams, it is reasonable to believe that a self-sustaining population of walleye is now established. Given their documented predatory impacts on salmonine populations in other lakes and reservoirs, walleye are likely impacting the rainbow trout and landlocked Atlantic salmon populations of Skaneateles Lake. Management actions must be taken if we want to restore the high-quality fisheries for these two species that anglers have come to expect. As of April 1st, 2022 there are new walleye regulations on Skaneateles Lake allowing anglers to harvest walleye year round, with no daily limit, and a 12 inch size restriction. It is hoped these very liberal regulations will allow anglers to adequately suppress the walleye population enough to allow improved and consistent rainbow trout and Atlantic salmon recruitment.