

Chautauqua Lake Annual Muskellunge Trap Net Survey (Survey 918100)

Justin Brewer, Region 9 Fisheries

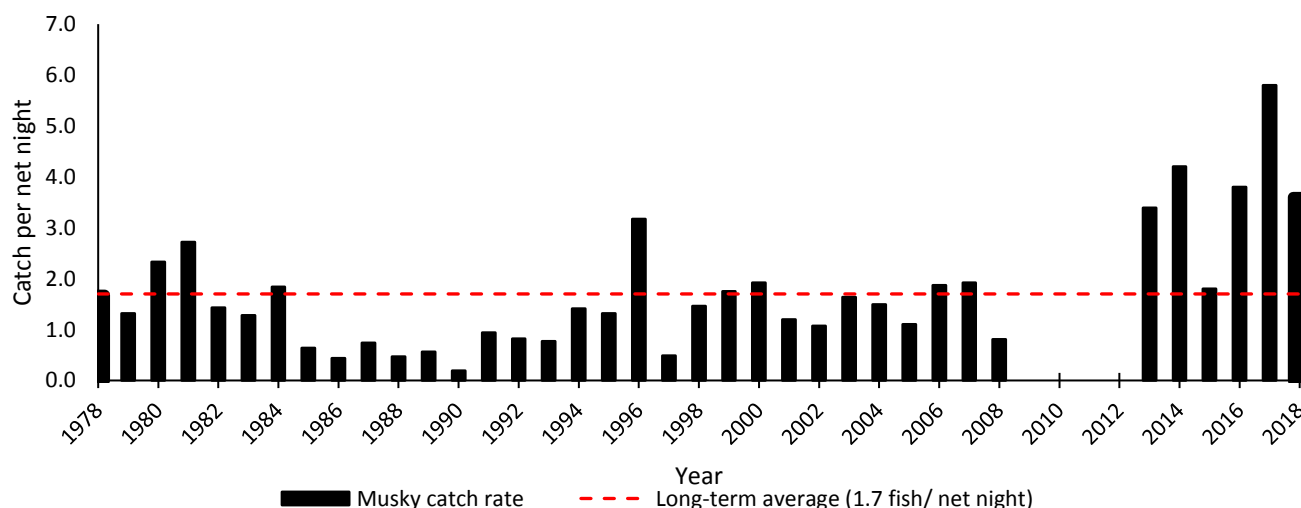
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Chautauqua Lake, located in the upper Allegheny River watershed in Chautauqua County, is the largest inland lake in western New York with a surface area of 13,156 acres. This eutrophic lake contains two distinctly different basins and is managed as a high-quality multi-species fishery with muskellunge, walleye, and black bass being the primary sportfish. Currently, the lake is stocked annually with 13,000 pure Chautauqua-strain muskellunge fingerlings to maintain the trophy fishery. The muskellunge season runs from the last Saturday in May to November 30th, with a 40-inch minimum size limit and one fish per day regulation.

The Region 9 Fisheries Unit and the Chautauqua Fish Hatchery conduct a spring trap net survey on Chautauqua Lake each year to collect muskellunge eggs for hatchery production and to assess the status of the muskellunge population. Chautauqua Lake serves as the brood stock source for all of the pure strain muskellunge fingerlings used for stocking in New York State waters, so it is imperative to monitor the muskellunge fishery. All muskellunge fingerlings stocked in Chautauqua Lake are marked with a fin clip at the time of stocking which allows staff to measure the level of natural reproduction in the lake. Six trap nets were set on April 30th, 2018 and were tended every other day for two weeks to assess the muskellunge population.

We collected a total of 305 adult muskellunge and spawned 46 mated pairs. Offspring from all 46 pairs will be equally represented in the hatchery product to maintain as much genetic diversity in the population as possible. The catch rate in 2018 was 3.6 muskellunge/net night (Figure 1). Although this is a decrease from the 2017 catch rate (5.8 fish/net night), it is still well above average and indicates that muskellunge abundance is still extremely high. The 2017 survey produced the highest catch rate since the beginning of standardized netting in 1978, however, catches like that are not expected to be seen every year. One factor to consider is the influence of weather patterns and lake conditions on musky behavior, which will affect catch rates during surveys just as they do with angling.

Figure 1. Catch per net night of Muskellunge in Chautauqua Lake 1978 - 2018



The length of all muskellunge collected ranged from 21.6 to 50 inches, with an average length of 37 inches. The largest muskellunge collected was just over 50 inches. It is impressive that 23% (70 fish) of the muskies collected in the nets were over 40 inches. This is an increase from last year when only 18% of captured muskies were over 40 inches. The sex ratio was 0.8 males per female muskellunge, which is in the desired range. About 16% of the muskellunge handled did not possess a hatchery fin clip, suggesting that they were the result of natural reproduction. The low contribution from natural reproduction to the muskellunge population is a continuing trend on Chautauqua Lake and is generally less than 20%. This confirms the importance of muskellunge stocking to maintain a robust population. Overall, the muskellunge population in Chautauqua Lake continues to be very strong, containing high numbers of musky as well as impressive size, and should provide excellent angling again in 2019.