

Chautauqua Lake Annual Muskellunge Trap Net Survey and Egg Collection 2023

From April 14th through May 3rd, 2023, Region 9 fisheries and the Chautauqua Hatchery conducted the annual spring muskellunge survey to monitor the adult muskellunge population and collect eggs for hatchery production. Chautauqua Lake is the primary broodstock source for pure-strain muskellunge stocking in New York State waters. Six trap nets were fished, capturing a total of 156 adult muskies for a catch rate of 1.5 muskies per net night. The largest musky collected during the 2023 survey measured 50.2 inches, and a good portion of muskies collected were over 40 inches.

Approximately 40 pairs were mated for hatchery production to provide pure strain muskellunge fingerlings for stocking in NYS waters.

Preliminary data from the 2023 survey suggests that the muskellunge population in Chautauqua Lake is aligned with the long-term average in terms of abundance, along with satisfactory growth rates consistently producing trophy size fish. There has been a decline in trap net catch rates over the past five years, yet the 2023 catch rate (1.5/night) was only slightly lower than the long-term average catch rate for this survey since 1978 (1.8/night). This could be an indication that the muskellunge population has reached a more appropriate balance as compared to periods with above average catch rates. It is worth noting that the 2017 survey produced a record high catch rate of 5.8 muskies/night, remarkably higher than the long-term average since 1978 (1.8/night). Although this led to increased angling catch rates for a short period, it would not be sustainable for muskellunge to consistently thrive at this abundance without risking negative impacts to other important sportfish populations. In a complex multi-species fishery like Chautauqua Lake, muskellunge naturally occur in lower densities, which helps support a balanced ecosystem and avoid potential negative impacts due to an overabundance of top-level predators. This could also suggest that recent declines in spring catch rates could conceivably be a result of natural variation in the population, not necessarily a sign that the population is impaired.

Inconsistent fluctuation in catch rates during this survey have been common in the past and are often the result of unstable spring weather patterns, alterations to spawning habitat, or other unknown factors that may disrupt typical



musky spawning movements and behavior. More intensive research would be necessary to precisely identify the factors behind variation in spring net catches, however, spring weather during the 2023 survey was abnormal and could be another possible reason for decreased catch rates observed in 2023. Fisheries staff will continue to monitor the muskellunge population for changes and expect to see a rebound in spring trap net catches in the next couple years. Full data analysis of this survey and the 2022 Chautauqua Lake Angler Survey will take place this winter to further assess the health of the muskellunge population.

Despite a reduced spring catch in the 2023 survey, anecdotal reports throughout the season indicated anglers were experiencing musky catches comparable to the last couple seasons. Chautauqua Lake should continue to provide quality musky fishing in 2023 and beyond, with consistent opportunities to catch trophy fish.

Region 9 Fisheries (Alek Davis, right) and Chautauqua Hatchery (Riley Delpriore, left) staff with trophy Chautauqua Lake muskies collected during the 2023 spring trap net survey.