

## Chautauqua Lake Young-of year Muskellunge Survey (Survey #918110) Justin Brewer, Region 9 Fisheries 6/3/2019

Located in southwestern New York, Chautauqua Lake represents one of New York State's finest recreational fisheries. With two distinct basins and a surface area of over 13,000 acres, Chautauqua Lake supports a variety of habitats, in turn establishing both a productive and diverse system. As a sport fishery, Chautauqua Lake provides anglers with opportunities including but not limited to: largemouth and smallmouth bass, walleye and muskellunge. Through propagation and constant management, the muskellunge fishery in Chautauqua Lake is able to continue thriving; potentially to a point where populations can persist naturally. Popular among anglers, muskellunge are a desirable species as they have the potential to grow to large sizes and provide an exciting experience when hooked. Muskellunge have been stocked in Chautauqua Lake as both fry and fingerlings since 1888, however, in recent years efforts have been focused more on fingerling stockings as fry survival has been shown to be poor. Natural reproduction of muskellunge has been known to be very low and has previously been evaluated through late summer seining surveys conducted by the NYSDEC, however, such sampling has not been conducted since 1982.

On August 30<sup>th</sup> and 31<sup>st</sup>, 2018, Region 9 fisheries personnel sampled 19 sites on Chautauqua Lake utilizing a 50 ft bag seine with ¼ inch mesh in efforts to evaluate the success of natural reproduction of muskellunge in Chautauqua Lake to better understand the contribution to the overall population. Secondly, the survey will help to delineate important habitat that is utilized by young-of-year sport fish while also obtaining baseline data concerning the forage base. Dense littoral vegetation and shoreline development presented challenges to seining effectively at many historic sampling sites.

Unfortunately, no muskellunge were collected during this survey. A total of 32 other species were collected by seine, representing a diverse forage base of juvenile sportfish, minnow, and shiner species (Figure 1). No distinct differences were noted in species composition between the north and south basins. However, species were segregated to some extent by habitat type and preference. Despite the absence of muskellunge during this survey, two wild young of year muskellunge were collected during the fall walleye electrofishing survey indicating that some low level of reproduction is still occurring in the lake. The high level of development along the shorelines of Chautauqua Lake are not promising for the recovery of muskellunge reproduction. However, with continuing regulatory efforts to improve shoreline conditions and littoral zone functions, muskellunge reproduction could potentially rebound and help to supplement the current stocked fishery. Based on the results of this survey, fall electrofishing may more efficient in evaluating reproduction of muskellunge in Chautauqua Lake.



**Figure 1. Relative Abundance of Fishes Sampled in Chautauqua Lake During the 2018 YOY Muskellunge Seining Survey**

