

Silver Lake Early-Spring Walleye Survey

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Located in eastern Wyoming County, Silver Lake is an 836-acre eutrophic lake with a maximum depth of 37 feet, providing year-round angling opportunities for numerous species of gamefish and panfish. While there are popular, high quality fisheries for panfish, largemouth bass, and northern pike, walleye are a particularly sought-after species. The abundance of walleye in Silver Lake has varied over the past several decades and appears to be reliant upon stocking, to some extent. Walleye fry were stocked periodically from 1927 to 1979 with limited success and by the mid-1970's walleye were considered virtually extirpated from Silver Lake (Evans 2005). They were subsequently restored to Silver Lake using a stocking rate that averaged 15 fingerlings/acre from 1983 to 1991 (Evans 1999). This was supplemented with fry stocking from 1992 through 1996, except 1995 when no stocking took place (Evans 1999). Stocking was eliminated after 1996 to evaluate the contribution of natural reproduction. NYSDEC surveys conducted from 2001 to 2010 concluded that natural reproduction was adequate to maintain the fishery; however, recent fall and early-spring surveys indicate that the abundance of walleye has steadily declined since stocking ended in 1996 (Figure 1). Due to these declines, stocking of walleye fingerlings was reinitiated in 2016 and has continued biennially to increase the abundance of walleye in Silver Lake. A recent fall electrofishing survey in 2018 was conducted to monitor the success of stocked walleye in Silver Lake, yet no walleye were collected. Due to this, an early-spring survey was conducted in 2019 to gather information about this population. Early-spring electrofishing catch rates are often extremely high and more variable than late-spring or fall electrofishing surveys, yet they still provide an opportunity to collect important information on population demographics and success of stocked walleye in Silver Lake.

On April 8th, 2019, immediately after ice-out, Region 9 Fisheries staff conducted an early-spring boat electrofishing survey to evaluate the status of walleye in Silver Lake. Electrofishing occurred at night, along a standardized section of shoreline, approximately one mile in length. A total of 311 walleye were collected, resulting in a catch rate of 146 walleye/hour (SE=11.2), a slight increase from the most recent early-spring survey in 2016 (Figure 1). A large proportion of walleye were males (86.7%), which is typical of early-spring surveys. Lengths ranged from 13.6 to 25.0 inches for males, and 18.7 to 27.6 inches for

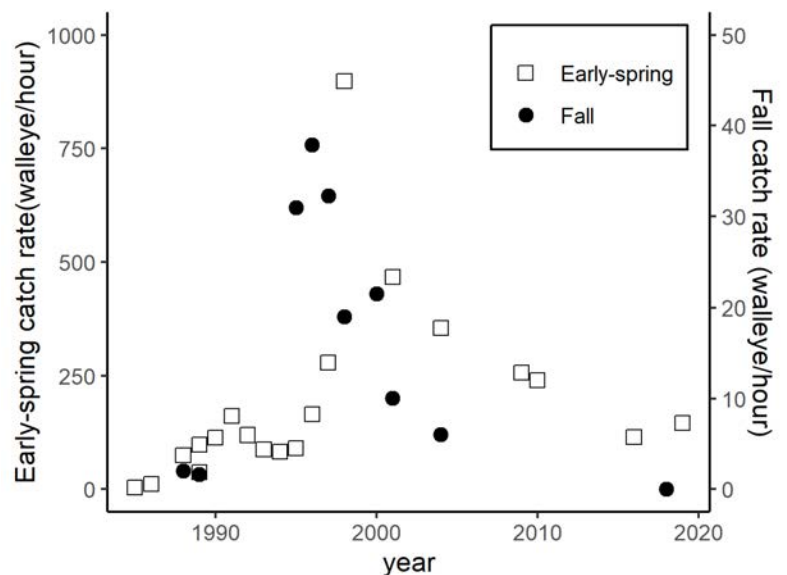


Figure 1. Catch rates of walleye from boat electrofishing surveys conducted in early-spring and fall, 1985-2019.

females. Weights ranged from 0.8 to 6.1 lbs for males, and 3.4 to 9.9 lbs for females. These results were similar to previous surveys. Walleye are not usually seen in this survey until they reach sexual maturity, which typically varies between 2 to 4 years old for males and 4 to 5 years old for females. Scales were taken from a sub-sample of walleye for age determination. Ages ranged from 3 to 16 for males and 9 to 15 for females. These results were nearly identical to age ranges in 2016, yet it is apparent the population age and size structure has changed since then. Comparison of the population length structure from 2009 to 2019 shows several notable changes (Figure 2). From 2009 to 2016 the population aged and became less abundant, showing low levels of recruitment. In 2019, the early-spring survey documented a sizable catch of walleye around 15 inches. It is possible that a large portion of these walleye were the result of the reinitiated stocking in 2016; however, this cannot be confirmed since the walleye stocked in Silver Lake were not uniquely marked.

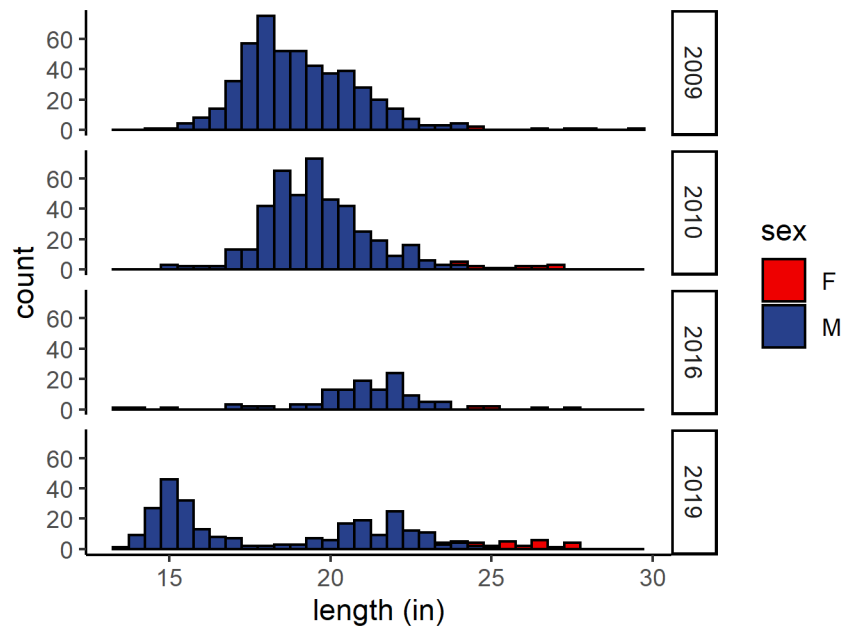


Figure 2. Length frequency distribution of walleye by sex, collected during early-spring electrofishing surveys, 2009-2019.

The recent uptick in abundance is a positive sign for the walleye fishery in Silver Lake. It is recommended for stocking to continue biennially, with intermittent monitoring. Walleye abundance is expected to increase with continued stocking, which will undoubtedly have impacts on the rest of the fish community. Monitoring should include fall and early-spring surveys, targeting walleye to monitor population abundance and success of stocking. Additional surveys should be conducted to monitor other aspects of the fish community, which may be impacted by an increased abundance of walleye.

Literature Cited:

Evans, J.T. 2005. Silver Lake Fisheries Survey 2004. New York State Department of Environmental Conservation, Albany, NY.

Evans, J.T. 1999. Restoration of a walleye population by fingerling stocking in Silver Lake, New York. New York State Department of Environmental Conservation, Albany, NY.