Bureau of Fisheries Technical Brief #tb719047

NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

Hemlock Creek Salmonid Production Survey (Survey #: 719047)

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Hemlock Creek is a tributary to Owasco Inlet (and hence Owasco Lake), running east from its headwaters in Cayuga County (Town of Locke) to its junction with the Owasco Inlet in the Village of Locke. Hemlock Creek is a popular Finger Lakes tributary fishery known primarily for its migratory lake-run rainbow trout. The fishery is supplemented by stockings of Finger Lakes strain rainbow trout in both Owasco Lake and the Owasco Inlet.

In the mid-2000s, the rainbow and brown trout fishery in the Owasco Lake watershed experienced a major decline, likely brought on by heavy predation on juvenile salmonids by burgeoning populations of lake trout and walleye in Owasco Lake. Stocking levels of lake trout in Owasco Lake have since been reduced by over 50%, and walleye stocking ceased in 2006. This survey, and similar surveys on other Owasco tributaries, is now conducted annually or biannually to monitor natural production of young-of-year (YOY) rainbow and brown trout in the system, with hopes of documenting a resurgence of these species over time as predator populations, particularly walleye, continue to decline in the lake.

Hemlock Creek was sampled via backpack electrofishing just upstream of Bird Cemetery Road in the Town of Locke on 9/25/2019. Due to time and staffing constraints, only a single pass sampling collection was performed at the site.

YOY rainbow trout (460 fish per acre) were collected at densities much greater than YOY brown trout (60 fish per acre), as is typical of recent years in Hemlock Creek and in other Owasco tributaries (Figures 1 and 2). The average length of the juvenile rainbows collected was 3.21 inches. The average length of juvenile brown trout collected was 3.82 inches.

Numbers of juvenile trout collected in 2019 and density estimates derived from these catches appear somewhat low in comparison to other recent years. It is difficult to determine with surety whether it was a low production year for both species. Additional factors influencing results that potentially lowered estimates include the physical extension of the length of some sampling sites (which may incorporate more less than ideal juvenile habitat in a given reach), and the single collection pass estimates utilized in 2019 typically yield lower numbers that those generated from multiple collection pass depletion surveys. Natural factors may have contributed to earlier smolting and outmigration this year as well.

For continued monitoring purposes, this survey will be repeated on an annual basis. Future attempts will focus sampling efforts earlier in September, and if possible, multiple pass depletion survey protocols will be employed to generate more reliable population estimates.

SPORT FISH RESTORATION

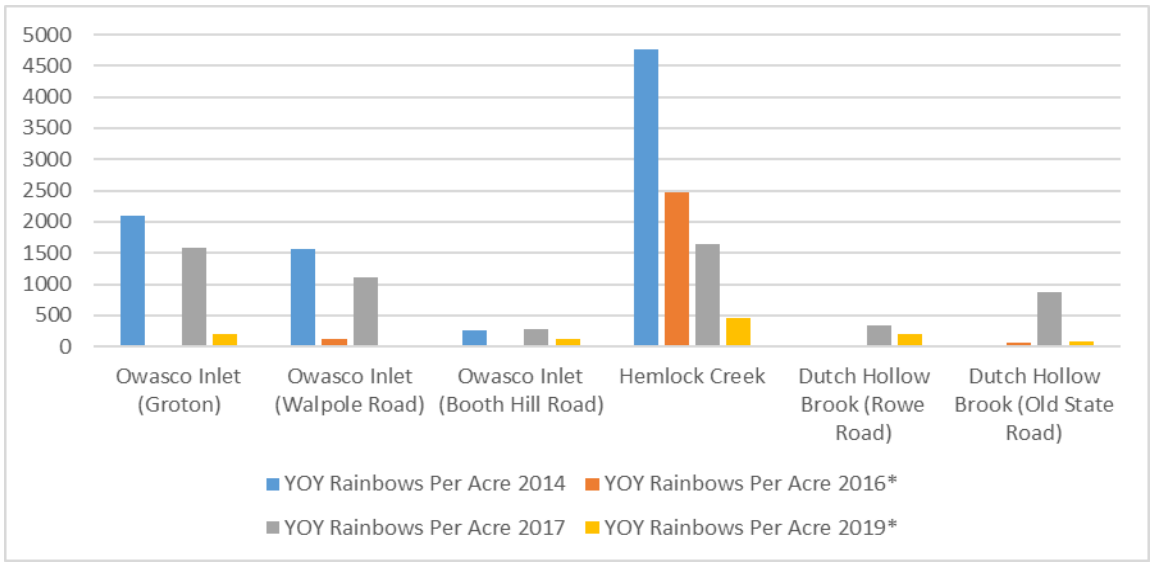

Figure 1. Young-of-year rainbow trout production in select Owasco Lake tributaries 2014-2019. *Single pass collections were performed on these years.

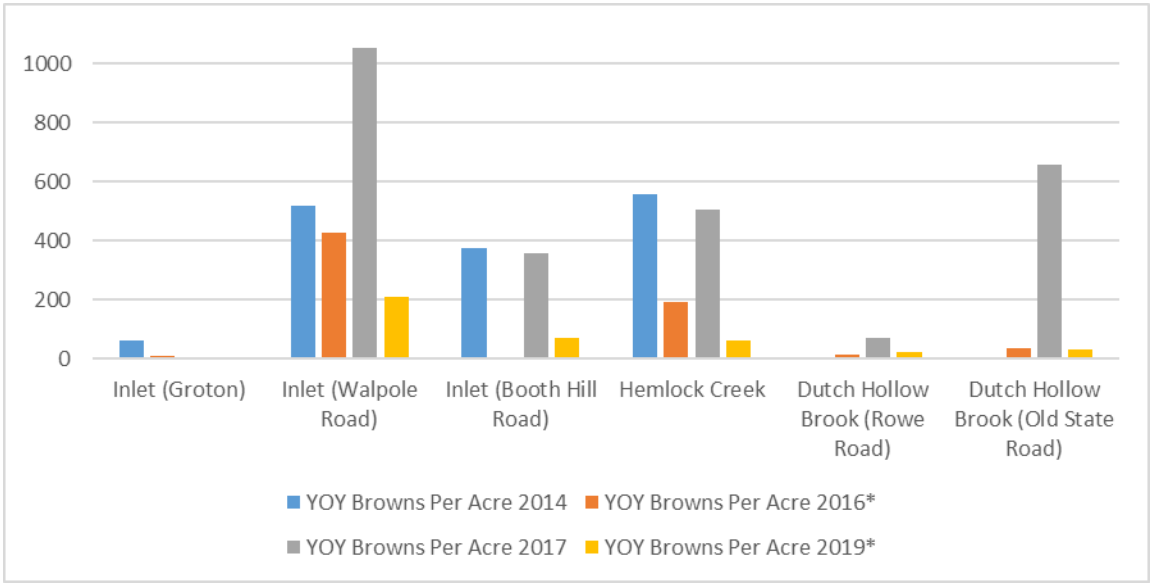

Figure 2. Young-of-year brown trout production in select Owasco Lake tributaries 2014-2019. *Single pass collections were performed on these years.