

## Owasco Inlet Salmonid Production Survey (Survey #: 719046)

Ian R. Blackburn, Region 7 Fisheries

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The Owasco Inlet is the main tributary to Owasco Lake, running northward from its headwaters in Tompkins County (Peruville/Groton area) to its mouth at Owasco Lake in Cayuga County (Moravia). The Inlet is a popular Finger Lakes tributary fishery known for both resident and migratory lake-run rainbow and brown trout. The fishery is additionally supplemented by annual stockings of approximately 2,700 yearling and 350 two-year old domestic brown trout, and 15,000 fall fingerling Finger Lakes strain rainbow trout (and via additional direct stockings in Owasco Lake).

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.

The Owasco Inlet was sampled via backpack electrofishing at three locations (Rt. 38 crossing in the Village of Groton, Walpole Road crossing just north of Groton and Booth Hill Road crossing (Town of Locke)) on 9/24/2019. Due to time and staffing constraints, only a single pass sampling collection was performed at all sites.

YOY rainbow trout were collected at all sites, and at densities typically much greater than brown trout, as is typical of recent years in the Owasco watershed. Densities of YOY rainbows estimated for the sites were as follows: Groton – 207 per acre, Walpole Road – 32 per acre and Booth Hill Road – 115 per acre (Figure 1). Average lengths of the juvenile rainbows at each site were 2.86, 3.45 and 3.77 inches, respectively. YOY brown trout were collected at the Walpole Road (209 per acre) and Booth Hill Road sites (69 per acre) and were notably absent from the upstreammost site in Groton (Figure 2). Average lengths of juvenile brown trout collected at the two sites were 3.74 and 3.86 inches, respectively.

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 than those generated from multiple collection pass depletion surveys. Natural factors may have contributed to earlier smolting and outmigration this year as well. Length data indicates that the larger members of the year class for both species were observed more frequently at the downstream sites, so some smolting and outmigration may have occurred in 2019 prior to this sampling event.



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.

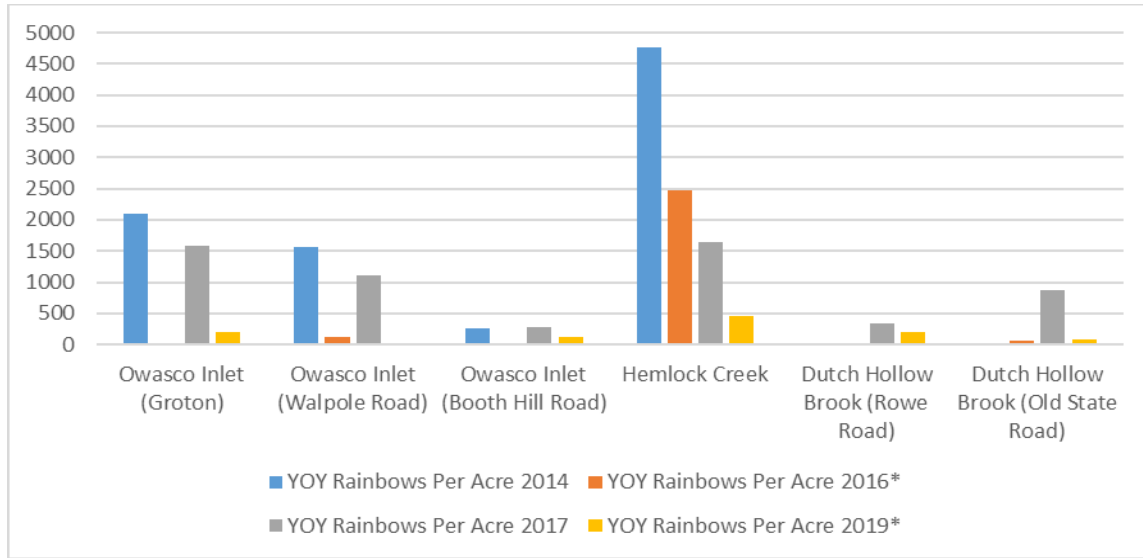


Figure 1. Young-of-year rainbow trout production in select Owasco Lake tributaries 2014-2019. \*Single pass collections were performed on these years.

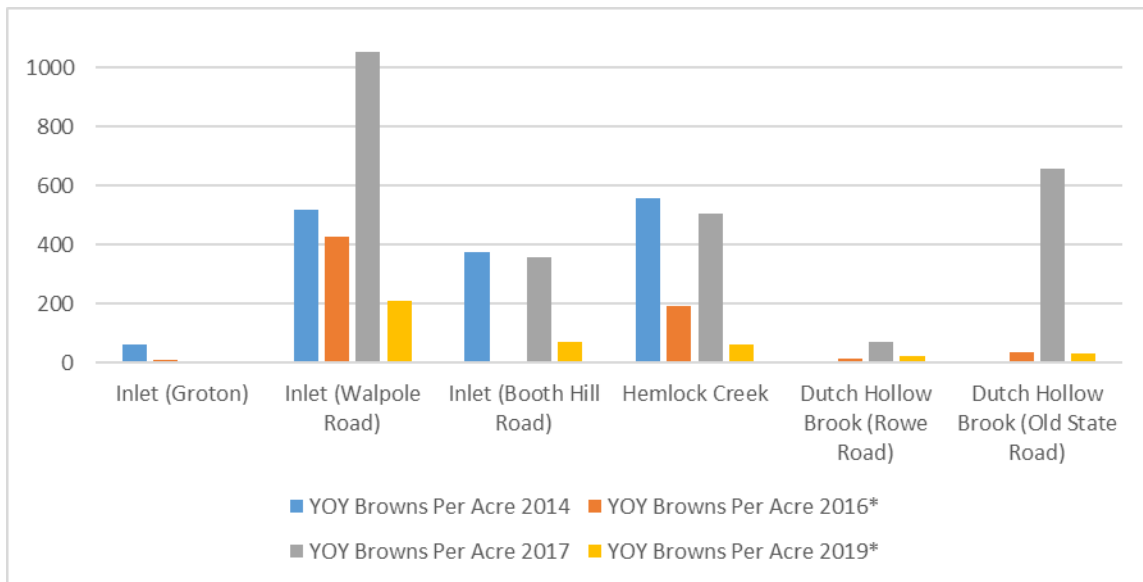


Figure 2. Young-of-year brown trout production in select Owasco Lake tributaries 2014-2019. \*Single pass collections were performed on these years.