

Indian River General Biological Survey (Survey #521067)

Chris Powers, Region 5 Fisheries

02/09/2022

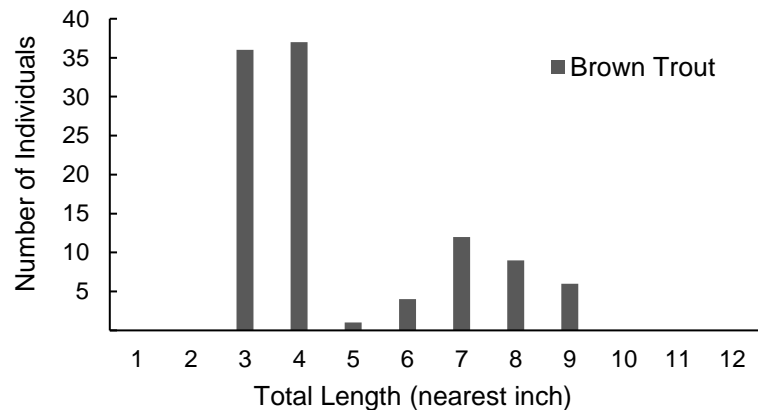
The Indian River is a medium sized stream that originates near the towns of Rupert and West Pawlet, Vermont. The stream runs in a northerly direction towards the town of Granville, New York where it eventually empties into the larger Mettawee River. The Indian River drains an area of 37 square miles, 61% of which is forested (U.S. Geological Survey, 2022). There are numerous Public Fishing Rights easements on the Indian adjacent to Route 22 from the NY state line to Granville.

The stream was selected as part of a larger statewide effort to determine any potential impacts that the new catch & release trout fishing season (October 16 through March 31) may have on wild trout reproduction. This survey seeks to estimate the trout population in the stream with a particular emphasis on young-of-year trout production. An angler count was also conducted on the stream from mid-October to mid-December of 2021 to determine catch and release angling pressure. The results of the angler count will be provided in a separate report.

Two sites near Dorance Road and Town Highway 19 were surveyed using multiple-pass backpack electrofishing in mid-September 2021. Water quality metrics and stream characteristics were recorded prior to the surveys. The stream was 19.5 feet wide on average with a predominately gravel bottom. Both sites offered some cover to fish in the form of deeper runs overhanging vegetation and some woody debris. Water temperatures averaged 63°F across the two sites during the time of sampling.

A total of 105 brown trout were captured across the two sites, non-trout fish species were not collected as part of this survey. Brown trout ranged in size from 2.8 – 9.1 inches and all fish captured during this survey were of wild origin (Figure 1.). Young of year trout population estimates were calculated using the Leslie-DeLury binomial estimation method (Table 1.). Estimated young of year capture

Figure 1. Trout Length Frequency Distribution



Site	Estimated YOY/Acre	Estimated Capture Efficiency
1	228 (202-263)	0.46 (0.34-0.57)
2	168 (166-175)	0.85 (0.71-0.92)

Table 1. Estimated young-of-year trout capture efficiencies and density per acre (with 95% confidence intervals) at two sites on the Indian River.



efficiencies differed between the two sites, likely due to differences in habitat complexity. Site one had substantial dogwood growth along the banks that extended into the stream, providing ideal cover for trout. Many trout were utilizing this overhanging vegetation for cover and netting fish in this area was difficult. Site two did not have such substantial dogwood growth along the bank.

The Indian River continues to support a wild population of brown trout. The presence of a moderate range of trout sizes indicate that the stream can support adult fish as well as provide suitable spawning habitat and nursery habitat for young fish. Large trout, clearly longer than 12" were observed in pools outside of survey reaches, further indicating a presence of mature trout. The survey section may be extended upstream next season in an attempt to capture some of these larger fish. The newly adopted New York State Trout Stream Management Plan (NYSDEC, 2020) establishes five independent management categories and criteria (angler access, stream size, trout carrying capacity, angler use) for inclusion of specific stream reaches into those categories. The Indian River is currently managed under "Stocked" and "Wild" category designations. Detection of a wild trout population of greater than 40lbs per acre or greater than or equal to 300 yearling trout per mile would initiate management under the "Wild-Quality" category. The current survey found 267 yearling trout/mile (24lbs/acre) and 159 yearling trout/mile (8.7 lbs/acre) at sites 1 and 2, respectively, supporting the "Wild" designation for the study reach. Additional surveys should be conducted on the stream to determine wild trout densities in other reaches. Riparian and instream habitat restoration projects should be deployed where feasible to attempt to improve wild trout production and potentially promote the stream to a "Wild-Quality" management category.

This survey will be conducted in the same fashion (trout electrofishing survey & angler count) annually through 2024 as part of the statewide catch & release season impact study. This survey serves as a baseline for trout population estimates in the creek in the first year which catch & release trout fishing was allowed during the traditionally closed season.

Literature Cited:

U.S. Geological Survey, 2022. The StreamStats program online at <<https://streamstats.usgs.gov/ss>>. 04 Jan 2022.

NYSDEC, 2020. New York State Trout Stream Management Plan, November 2020. New York State Department of Environmental Conservation Bureau of Fisheries.