

Young-of-year trout sampling on Fox Hollow Brook (Survey #323022)

Robert D. Adams, Region 3 Fisheries

September 2023

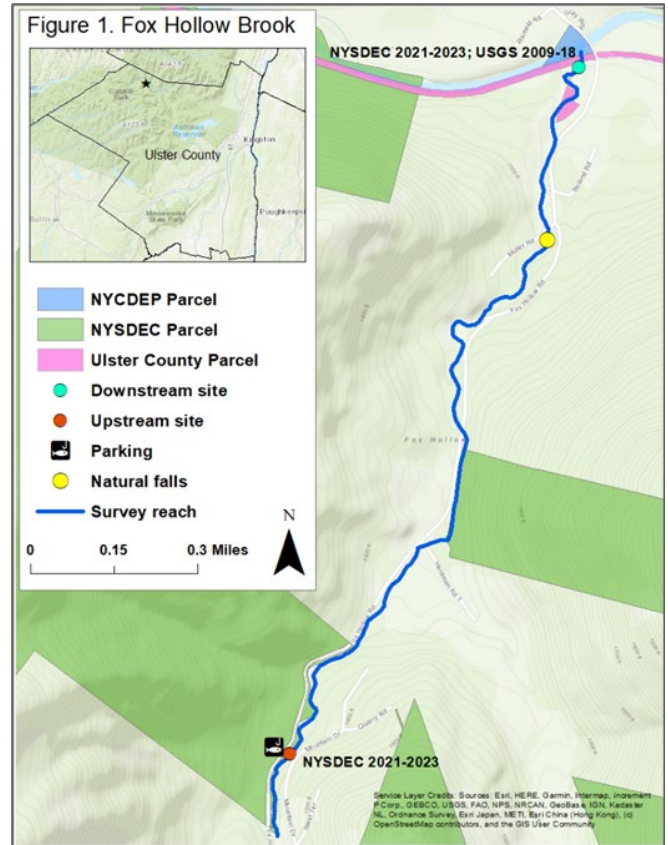
Despite extensive outreach for the New York State Inland Trout Stream Management Plan (NYSDEC 2020), public concerns regarding the proposed catch and release season on trout spawning success remained. As a result, the Bureau devised a four-year, statewide survey to (1) estimate the fishing pressure during the catch and release season and (2) evaluate young-of-year (YOY) production (NYSDEC 2021). This report covers the third year of YOY sampling on Fox Hollow Brook, one of six reaches in NYSDEC’s Region 3 chosen for the statewide survey.

Fox Hollow Brook (FIN H-171-49) is a small tributary of Esopus Creek, one of the most popular trout fishing destinations in the Catskills. The survey reach runs parallel to Fox Hollow Road, from the confluence with Esopus Creek upstream 1.75 miles to the first bridge crossing after the NYSDEC Panther Mountain trailhead (see Figure 1). A natural falls, located 0.4 miles upstream from the confluence, likely prevents passage of spawning trout moving upstream from the Esopus in all but extreme high water events. Anglers have limited access downstream of these falls via Ulster County and NYCDEP lands, while upstream of the dam, anglers can access a little more than half a mile of creek on NYSDEC lands near the Panther Mountain trailhead at the upper end of Fox Hollow Road. While outside of the current survey reach, anglers willing to hike through unimproved NYSDEC land can navigate around private property and follow the creek beyond Fox Hollow Road to its headwaters at the base of Panther Mountain.

Prior to the NYSDEC Young-of-year recruitment study, the most recent fisheries sampling of Fox Hollow Brook was done by USGS, who surveyed the fish community from 2009-2018 as part of a broader Catskill Mountain stream survey (Baldigo and George 2019). The USGS sampling methodology consisted of multi-pass depletions using backpack shockers and blocking seines. All fish species were targeted. The prospect of comparing current YOY population metrics with this recent USGS dataset made this creek an ideal candidate for the Catch and Release survey.

Two sites on Fox Hollow Brook were selected for the recruitment study: (1) an upstream site next to the Panther Mountain trailhead and (2) a downstream site near the USGS survey site, roughly 30 feet from the confluence (Figure 1). Sampling consisted of two-pass depletions with no blocking seines, following protocols in the sampling plan (NYSDEC 2021). Due to the width of the stream, two backpack electrofishing units were used each year, with three to four scappers deployed. All trout were held in in-stream fish pens and processed after the 2nd pass. Both sample sites were sampled in 2021 and 2022; however, sampling in 2023 was limited to the upstream site due to high flows in the lower reach.

Despite young-of-year being the primary sampling focus, yearling and older trout were captured, counted, and measured in each year of the survey. The catch estimates for older trout are not included in this report, but will be documented in the full report that will follow the final year of sampling.

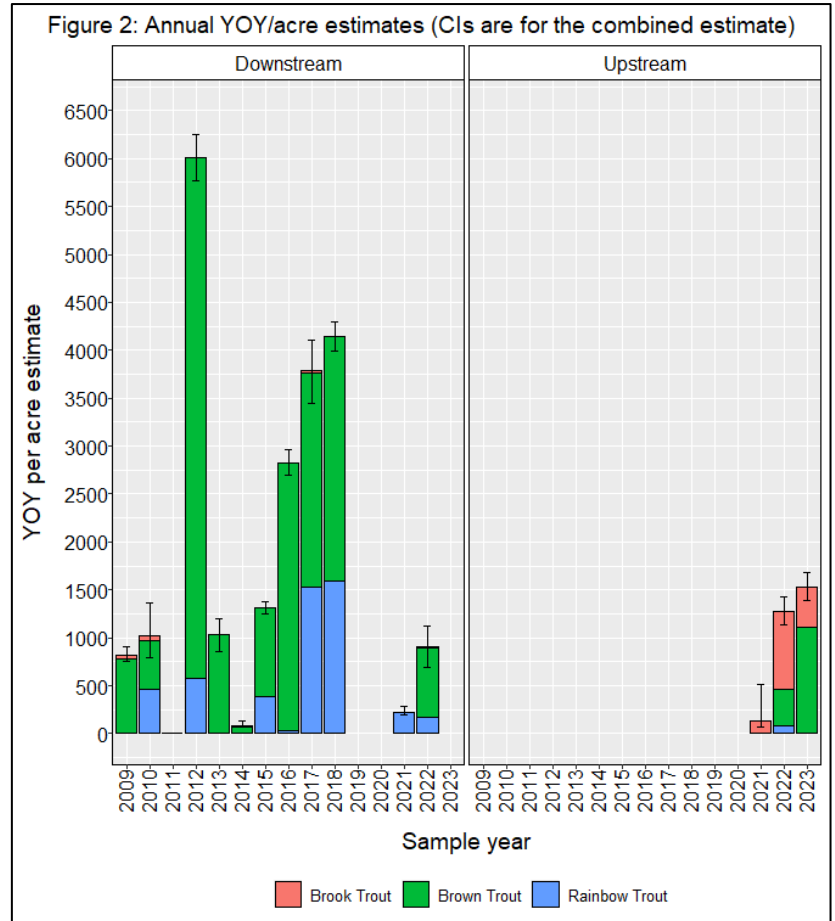


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A combined 146 young-of-year brook and brown trout were collected at the upstream site in 2023, a similar result as observed in 2022. Catches in 2022-2023 at the upstream site were very different from 2021, when only five YOY (all brook trout) were captured. Figure 2 compares the estimates of YOY per acre in 2023 with those from 2021-2022 and the USGS surveys (Note: USGS only sampled the downstream site). The species-combined biomass estimates for the upstream site are significantly higher in 2022-2023 than 2021, with brook trout having the highest abundance in 2022 and brown trout in 2023. Unfortunately, no sampling was done at the lower site in 2023, and thus no comparisons can be made with prior sampling years. As reported last season, the high flow event beginning on December 25, 2020 likely contributed to the low young-of-year abundances observed in 2021. This ‘Christmas Day’ storm caused major damage throughout the Esopus watershed. High flows altered stream channels and easily displaced large boulders and woody debris. In addition, the erosion of clay banks resulted in prolonged turbidity events in many locations. The timing of this storm would have had the biggest impact on brook and brown trout spawning success, as eggs were likely in the incubation stage by that time of year. Recruitment will be evaluated at these sites again in 2024. A full report will follow.



Literature Cited

George, S.D., Baldigo, B.P., and Winterhalter, D. (2018). *Adirondack and Catskill stream-fish survey dataset (ver. 4.0, March 2022)*: U.S. Geological Survey data release, <https://doi.org/10.5066/F70C4V25>.

NYSDEC. (2021). *Angler Use and Wild Trout Young of Year Recruitment: Evaluating New York’s Inland Trout Stream Catch and Release Season*. Albany: New York State Department of Environmental Conservation.

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