

Young-of-year trout sampling on Woodland Creek (Survey #323023)

Robert D. Adams, Region 3 Fisheries

September 2023

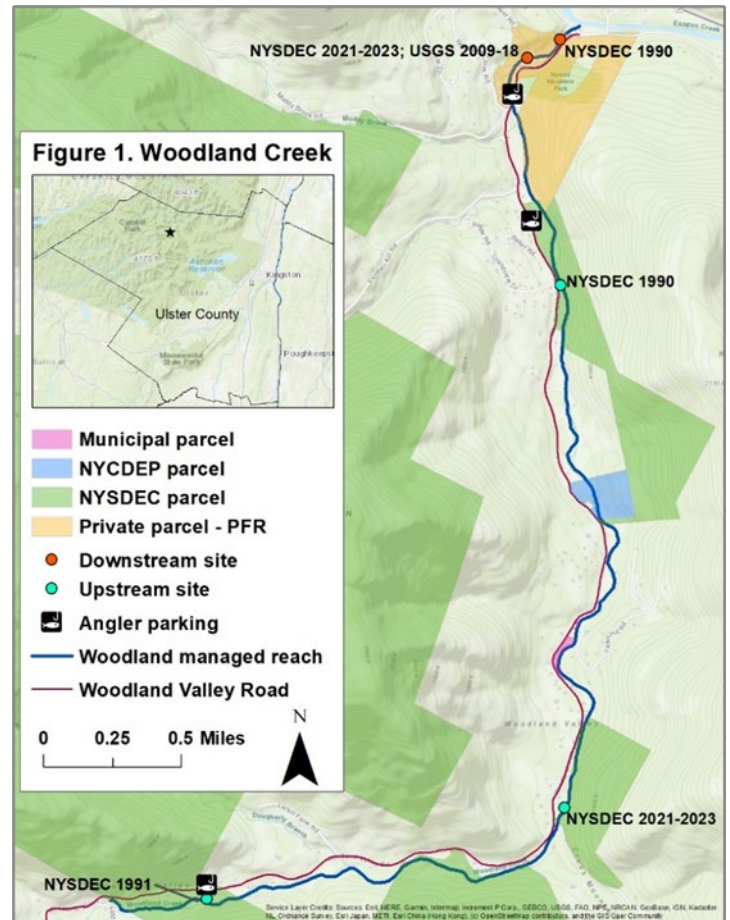
Despite extensive outreach for the New York State Inland Trout Stream Management Plan (NYSDEC 2020), public concerns regarding the proposed catch and release season on trout spawning success remained. As a result, the Bureau devised a three-year, statewide survey to (1) estimate the fishing pressure 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 Woodland Creek, one of six reaches in NYSDEC's Region 3 chosen for the statewide survey.

Woodland Creek is a major tributary of Esopus Creek. The managed reach on Woodland is a five-mile section extending upstream from Esopus Creek to the upstream edge of the NYSDEC Woodland Valley Campground (see Figure 1). Woodland Valley Road runs parallel along much of this stretch, affording anglers access to three miles of public access. Two NYSDEC angler parking areas are in the bottom third of the reach and the NYSDEC trailhead parking lot near the campground provides the easiest access upstream. For most of the last century, the NYSDEC annually stocked brown trout in the lower third of the creek. However, on April 1, 2021, all tributaries of the Upper Esopus Creek in NYSDEC's Region 3 were designated 'Wild' streams and the NYSDEC stocking policy on Woodland Creek was cancelled. A local angling group supplemented NYSDEC stockings with smaller stockings on private sections within the managed reach. Region 3 fisheries will continue permitting these stockings until results of the Catch and Release study are compared with the management metrics defined in the Inland Trout Stream Management Plan.

Prior to 2021, the most recent NYSDEC trout population surveys of Woodland Creek took place in 1990 and 1991. Backpack electrofishing units were used at the upstream-most sites, while a tow-barge electrofisher was used at the downstream site. Additional surveys were done by USGS, who surveyed the Woodland Creek fish community from 2009-2018 as part of a broader Catskill Mountain stream survey (Baldigo and George 2019). The USGS sampling consisted of multi-pass depletions using backpack shockers and blocking seines. All fish species were targeted. These extensive historical sampling datasets made this creek an ideal candidate for the Catch and Release study.

Two sites were scheduled to be sampled in 2023: one downstream site a quarter mile upstream from the confluence with Esopus Creek and an upstream site at the Tonisgah Road bridge. The upstream site is 3.3 miles upstream of the confluence. A USGS stream gage is located at the downstream site, which also served as the long-term USGS fish sampling location.

The upstream site was sampled in a two-pass depletion with no blocking seines on September 20, 2023. In 2021, this site had one major channel and a minor channel that were sampled concurrently using two



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backpack shockers and a single backpack, respectively. This sampling strategy was not possible in 2022 or 2023 due to high flows in the wide, shallow, secondary channel. The two channels were independently sampled with all three backpack shockers in 2022 and 2023, resulting in higher sampling effort than in 2021. As with 2022, sampling at the downstream site was cancelled in 2023 as high discharges prevented safe and efficient sampling.

Despite young-of-year being the primary sampling focus, yearling and older trout were captured, counted, and measured in each year of the survey. In 2023, older trout catches consisted of sixty-four wild brown trout and one rainbow trout. Unlike in previous years, no stocked brown trout were observed. The wild brown trout catch in 2023 was the highest in the time series. Conversely, the one rainbow trout catch was the lowest; however, not far off from the low catch rates observed in other years. More detailed metrics for older trout will be documented in the full report that will follow the final year of sampling.

One hundred and twenty-nine brown trout and 29 rainbow trout YOY were caught in the upstream site in 2023. The resulting biomass (see Figure 2) estimates were much higher than what was estimated for 2021, but similar to those estimated for 2022 and for the final four years of USGS sampling at the downstream site. As reported previously, 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 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>.

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