Bureau of Fisheries Technical Brief #tb818020

NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

Cayuta Creek CROTS (Survey #818020)

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06/28/21

Cayuta Creek is a well-known and accessible trout fishery (primarily brown trout) with approximately 8.5 equivalent miles of Public Fishing Rights access. Cayuta Creek flows generally South/Southeast from its source (Cayuta Lake) in Southeastern Schuyler County, following the border between Chemung and Tioga Counties, to its confluence with the Susquehanna River in Sayre, Pennsylvania. Cayuta Creek is an interesting system, as it is a coldwater stream with a warmwater source and a robust beaver population, resulting in a mix of warm and coldwater fish throughout much of the stream.

There have been three previous CROTS surveys of Cayuta Creek, 1990, 1994, and 2001. This (2018) survey followed standard CROTS single pass electrofishing methodologies; using 2 wands and 4 scappers to maximize stream coverage. All fish collected were identified and counted before being returned to the water, in addition all trout were measured for total length and had a scale sample collected for aging. The 1994 survey is not included in this comparison because it utilized different sampling sites than 1990, 2001, and 2018.

The 2018 survey showed a decline in trout abundance with an average of 3.8 adult fish/ac, as compared to 37.49 and 20.61 adult fish/ac in 1990 and 2001 respectively. The average length of trout caught from 1990 to 2018 increased from 8.16 in (SD = 3.28), to 10.64 in (SD = 3.61) (Figure 1). The average age of trout caught also increased from 1.55 years (SD = 1.12) in 1990 to 2.64 years (SD = 0.92) in 2018 (Figure 2). In 2018, 16 non-trout species were caught, for a 38% decline in total species richness from 1990. Diversity is similarly down from 1990, falling from 1.159 on the Shannon index to 0.632 in 2018 (Shannon, 1948) [1].

The increases in average trout size and age, combined with the sharp decline in numbers, indicate that both survival and recruitment of trout may have fallen off since previous CROTS surveys. These changes in the trout population along with the changes in the whole fish community, indicate a need to further investigate changes to Cayuta Creek before any potential adjustments to trout stocking.

Literature Cited

Shannon, C.E. (1948) A mathematical theory of communication. Bell System Technical Journal, 27, 379–423.

[1] $H = -\sum p_i \log p_i$

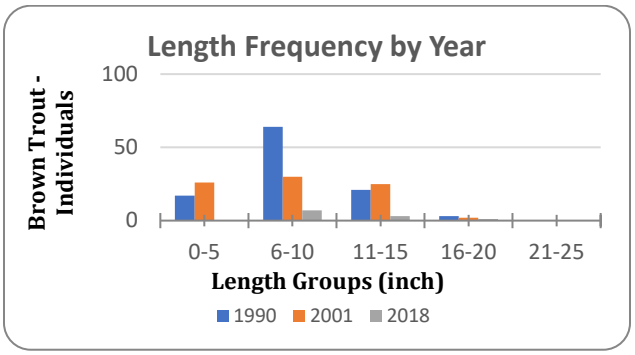

Figure 1: Distribution of Brown Trout by length group per year, of fish Caught.

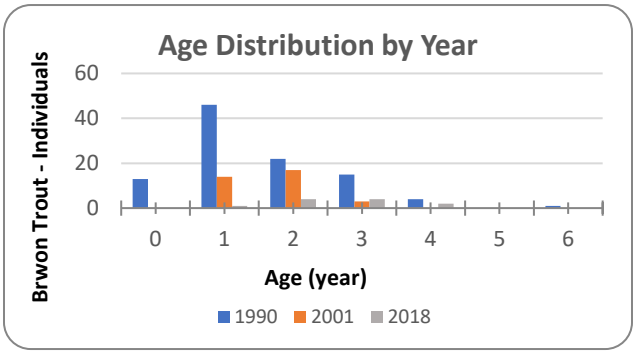

Figure 2: Distribution of Brown Trout by age per year, of fish caught