

Evaluation of the Upper Cattaraugus Creek Trout Fishery

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Introduction

A comprehensive year-round angler survey was conducted on the upper Cattaraugus Creek watershed to measure angler effort, catch, harvest, fishing quality, and angler demographics to inform possible management actions. Only angler effort and fishing quality are covered in this brief. The survey covered Cattaraugus Creek from the Springville dam upstream to Java Lake, Elton Creek, Clear Creek, Hosmer Brook, Lime Lake Outlet, McKinstry Creek, and Flynn Brook. These streams support fisheries for both wild and stocked brown trout, and wild resident rainbow trout. Relict populations of brook trout also occur in the headwaters of some tributaries. All streams, except Flynn Brook, have a year-round fishing season (catch and release only from 10/16 – 3/31). Angling effort was last measured on the stocked portion of upper Cattaraugus Creek in 1997 (Evans 1998) and on four wild trout tributaries in the watershed in 2000 (NYSDEC Region 9 Fisheries, unpublished data). Previous surveys employed a mini-creel survey approach (Zielinski and Engstrom-Heg 1993).

Methods

The angler survey was conducted from September 1, 2019 - August 31, 2020 using a roving-roving design (Pollock et al. 1994) to characterize the year-round trout fishery in the entire watershed. Car counts and angler interviews were conducted on two established routes covering major access sites (48 in total) along each stream. Creel agent effort on car counts was distributed evenly among routes in each month, and interviews were conducted opportunistically when anglers were encountered. All weekends and holidays were sampled as well as three weekdays (on average) per week. Each day was further separated into non-overlapping AM and PM shifts. Interviews conducted from March through August followed Covid-19 safety protocols requiring masks and maintaining a safe distance from all anglers.

Results and Discussion

A total of 806 angler interviews were conducted with the majority occurring on Cattaraugus (577; 71.6%), Clear (125; 15.5%) and Elton (70; 8.7%) Creeks. Total angler effort was estimated at 56,339 angler-hours. An estimated 26,274 angler trips occurred based on a mean trip length of 2.3 hours. The highest angling effort occurred on Cattaraugus Creek (42,225 hours; 75%) followed by Elton Creek (8,275 hours; 14.7%) and Clear Creek (4,232 hours; 7.5%) (Figure 1). Comparatively low angler effort occurred on Lime Lake Outlet (526 hours), Hosmer Brook (725 hours), McKinstry Creek (249 hours), and Flynn Brook (107 hours). April accounted for two thirds (66%) of the total angling effort (37,185 hours) with most of the remaining effort occurring from May through October. Less than 3% of the angling effort occurred from November through March despite relatively mild winter conditions. The two stocked streams (Cattaraugus, Elton Creeks) accounted for most (94%) of the April angling effort.

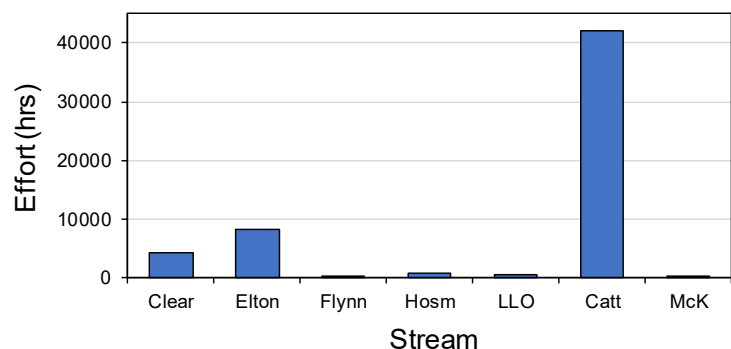


Figure 1. Total angler effort (angler-hrs) by stream for the upper Cattaraugus Creek watershed, September 1, 2019 - August 31, 2020.

The catch rate and harvest rate for the entire upper Cattaraugus Creek watershed, all streams and months combined, was 0.75 and 0.17 fish/hr, respectively. With the exception of Hosmer and Flynn Brooks, catch rates were similar (range: 0.66 – 0.82 fish/hr) among the sampled streams (Figure 2).

Hosmer Brook had the highest overall catch rate (1.42 fish/hr) while Flynn Brook was lowest (0.45 fish/hr). Cattaraugus Creek, the most-fished water, produced an overall catch rate of 0.77 fish/hr. Harvest rates were comparatively low across all the streams (Figure 2). The two stocked streams, Cattaraugus and Elton Creeks, had the highest estimated harvest rates (0.20 fish/hr). No harvest was evident on Lime Lake Outlet, Flynn Brook, or McKinstry Creek although angler interviews were very low (≤ 10) on these streams.

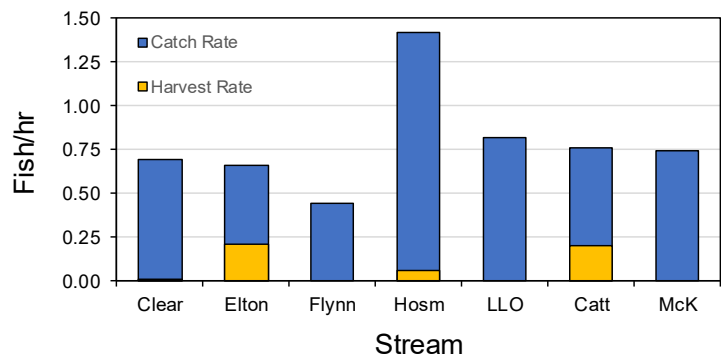


Figure 2. Catch and harvest rates (fish/hr) by stream for the upper Cattaraugus Creek watershed, September 1, 2019 - August 31, 2020.

The highest catch rates occurred in November (1.07 fish/hr) and April (0.90 fish/hr) while the lowest occurred in January (0.23 fish/hr) and February (0.34 fish/hr). Not surprisingly, the highest harvest rate occurred in April (0.30 fish/hr) following stocking; lower harvest occurred throughout the summer months. No harvest was evident during the fall and winter months (October – March) in compliance with the catch and release regulations.

Comparisons to previous surveys within the upper Cattaraugus Creek watershed are difficult given the major differences in survey methodology, areas sampled, and survey years. For example, Evans (1998) estimated angler use at 880 hours/acre from a 1997 mini-creel survey on upper Cattaraugus Creek from Elton Creek to E. Arcade, which is much higher than the 536 hours/acre (range: 384-687) based on this survey for the same stream section. However, the 1997 survey did not consider almost four miles of stream acreage. Accounting for this decreases the 1997 estimate to 690 hours/acre (range 654-727), which is within the 95% confidence range of this survey. Catch and harvest rates from the 1997 survey were estimated at 1.01 and 0.44 fish/hr, respectively, higher than results from this survey (0.77 and 0.19 fish/hr, respectively). Effort estimates from this survey on four wild trout tributaries were all lower than effort estimates from a mini-creel survey conducted in 2000 (Clear Creek: 222 vs. 282 hrs/acre; Lime Lake Outlet: 46 vs. 135 hrs/acre; McKinstry Creek: 38 vs. 179 hrs/acre; Hosmer Brook: 139 vs. 186 hrs/acre).

This was the first comprehensive angler survey conducted in the upper Cattaraugus watershed and provides information to guide management under New York's Inland Trout Stream Management Plan (NYSDEC 2020). In addition, this survey established baseline benchmarks prior to a proposed fish passage project at the Springville Dam on Cattaraugus Creek. The high angler effort during April on Cattaraugus and Elton Creeks highlight the importance of the trout stocking program to this fishery. The survey confirmed that upper Cattaraugus Creek continues to be one of western New York's most heavily used inland trout streams, and that the entire watershed provides a diversity of high-quality angling experiences from put-and-take trout fisheries to small stream wild trout fishing.

Literature Cited

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