

**Cascade Brook General Biological Survey #519094:
Tom Shanahan, Region 5 Fisheries**

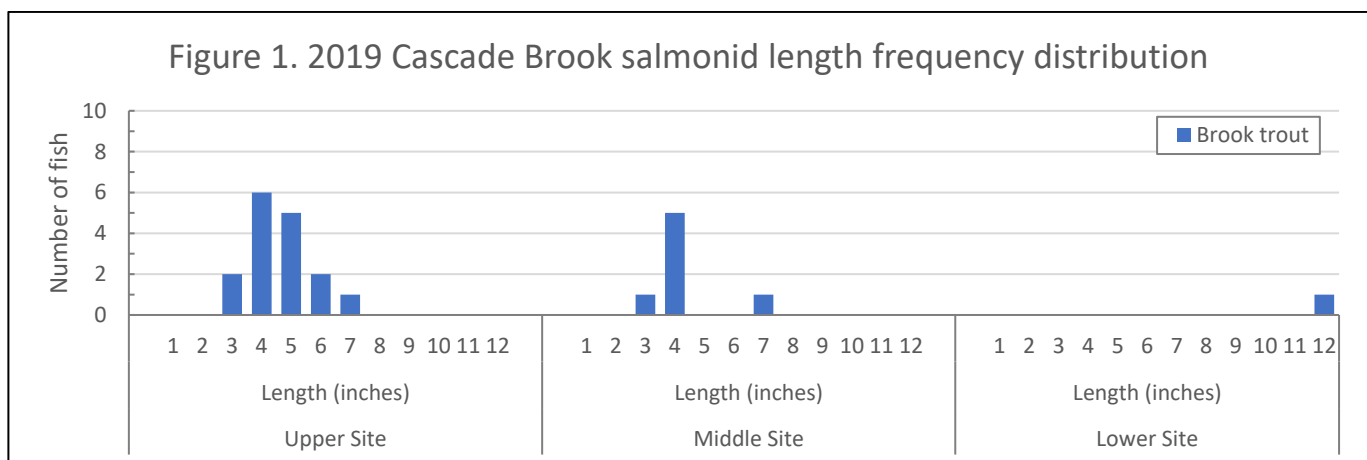
04/30/2020

Cascade Brook (C-25-27-25) is a Champlain watershed stream located in the Town of Keene in Essex County. The brook begins at an elevation of 2,025 feet as the outlet of the Cascade Lakes and drops 1,200 feet in approximately four and a half miles before reaching the East Branch of the Ausable River. It is in the High Peaks Wilderness for its first mile but flows through private lands beyond that point. This was a general survey to collect recent data since the previous survey in 1995 and is also part of a larger effort to look at the distribution of wild brook trout in the Ausable system. Cascade Brook is not currently stocked by DEC but receives brook trout from the Essex County Hatchery.

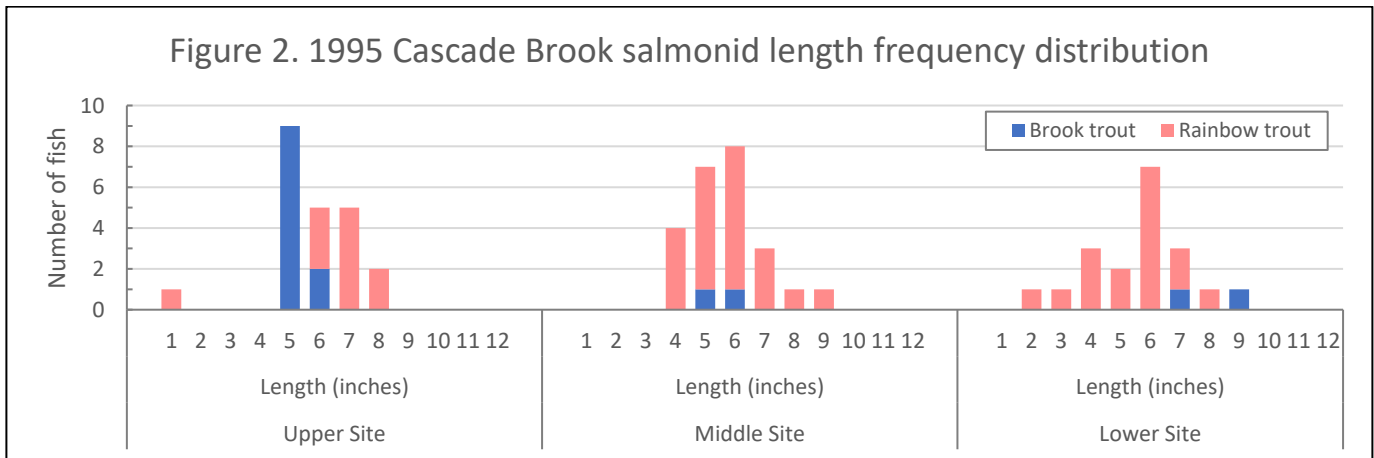
Three sites were surveyed along its full length with a backpack electrofishing unit in October 2019. Four fish species, including 24 brook trout, were captured across the three sites (Table 1. and Figure 1.). All of the brook trout were wild fish; no evidence of stocked fish was seen.

Table 1. Numbers caught and size ranges of fish from three sites on Cascade Brook in 2019.

Site	Species	Number caught	Length range (inches)
1 - Upper	brook trout	16	2.8 – 6.6
	blacknose dace	1	2.4
	longnose dace	1	3.0
2 - Middle	brook trout	7	3.0 – 7.0
	blacknose dace	7	1.9 – 3.3
3 - Lower	brook trout	1	11.5
	blacknose dace	4	2.2 – 2.8
	longnose dace	3	2.2 – 3.0
	slimy sculpin	1	3.2



Brook trout abundance across the three sites closely mirrored the habitat conditions. The upper site had the highest gradient and featured large boulders and a nearly continuous series of step pools. There were fewer pools in the middle section, but it still had a suitable cobble and gravel substrate. Although the lower site contained a gravel streambed, it did not have a single well-defined pool. Instream cover in the lower site was also poor compared to the other two sites. These results are similar to the '95 survey with one notable exception. Though brook trout was the only salmonid collected in 2019, the earlier survey was dominated by wild rainbow trout, especially in the two lower sites (Figure 2.). The reason for their apparent disappearance is unknown, but may possibly be related to the effects of the remnants of Hurricane Irene in August 2011. The storm was a severely destructive and habitat-altering force, especially for streams in the Town of Keene. A similar change was also seen in nearby Lewis Brook (Survey #518066).



A temperature recorder was in place on the upper section for the summer of 2019. The best temperature profiles occur on streams that do not flow through ponded waters, but Cascade Brook had decent temperatures despite draining the Cascade Lakes. Water temperatures topped 70 °F on just five days and average temperatures were generally in the mid-60's.

Cascade Brook currently has a wild and self-sustaining brook trout population on the upper reaches of the brook. Management recommendation is to cease stocking in this upper area, but continue to stock brook trout on the lower part of the stream. We will periodically resurvey the brook to monitor water temperatures and species composition. Statewide Angling Regulations preside on Cascade Brook.