

## Lower Cascade Lake Round Whitefish Egg-Take Survey #521018 Jonathan Fieroh, Region 5 Fisheries

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Lower Cascade Lake (C-P270) is a roadside 22-acre lake located in Essex County in the High Peaks Wilderness Area. It has a maximum depth of 41 ft, an average depth of 11.2 ft, a conductivity of  $116 \mu\text{Scm}^{-1}$ , and its pH is well above 7. Use or possession of baitfish is prohibited due to the lake being located in the High Peaks Wilderness. Adirondack Lakes Survey Corporation classified the lake as salt impacted, not surprising given its roadside location. An in-depth study of the potential impacts of winter roadside management at the Cascade Lakes and Chapel Pond was conducted in 2006

([https://www.dot.ny.gov/divisions/engineering/environmentalanalysis/repository/cascade\\_lakes\\_final\\_report.pdf](https://www.dot.ny.gov/divisions/engineering/environmentalanalysis/repository/cascade_lakes_final_report.pdf)).

Results showed that while Upper and Lower Cascade lakes have chloride levels 100 to 150 times higher than expected for a comparable Adirondack lake, turn-over was still occurring, indicating there was little resistance to thermal mixing. There were no effects on macroinvertebrates attributable to salt use, but Lower Cascade did have hypolimnetic dissolved oxygen concentrations low enough in late summer to stress round whitefish. The low dissolved oxygen was likely caused by organic inputs and resulting biological oxygen demand rather than from any effect of road management or salt use. There have been no recent intensive studies concerning salt use, but in 2021 the lake continues to have thermal mixing and round whitefish currently thrive here.

On November 19, 2021, a single modified Oneida trap net was set in Lower Cascade Lake just off the delta formed by the inlet from Upper Cascade. The net was fished for three nights before it was pulled on the 22nd. Surface water temperature at that time was  $35^{\circ}\text{F}$ . A total of 220 round whitefish were collected, of which 20 were retained for disease monitoring. A total of 100 round whitefish were measured and their average length was 9.2 inches. The timing of the 2021 egg take was good with 54% of females ripe. A total of 58 pairs were stripped. Fertilized eggs were transported to the NYSDEC Adirondack Hatchery where an estimated 23,700 green eggs will be held. Four additional species were collected including brook trout, which are stocked annually.

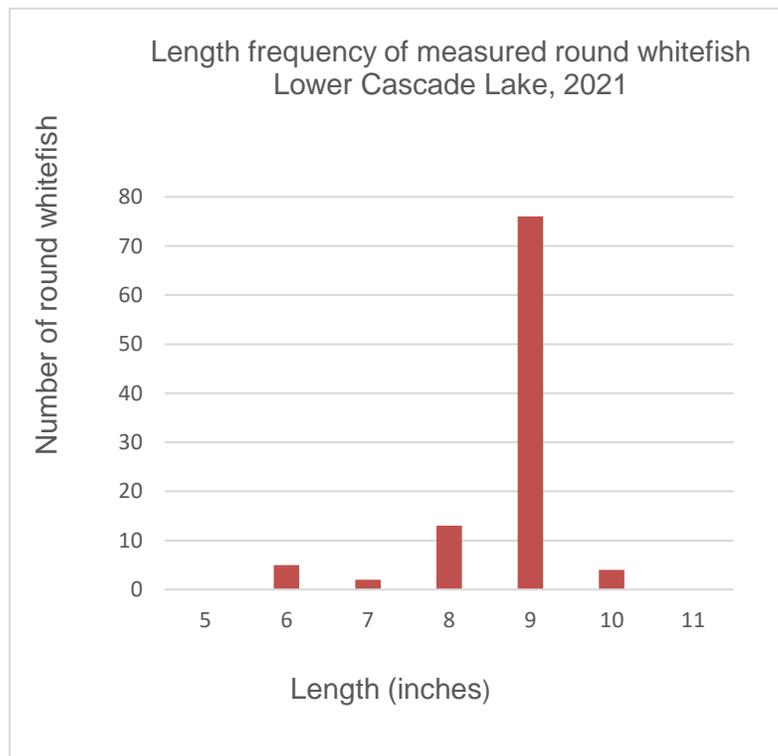


Table 1. Number and length ranges of fish collected at Lower Cascade Lake, 2021.

Species	Number collected	Minimum length (in)	Maximum length (in)
Round whitefish	220	6.2	10.5
Brook trout	3	5.6	7.5
White sucker	19	6.2	11.4
Brown bullhead	10	3.8	4.7
Common shiner	3	4.1	4.5

This population of small but numerous round whitefish appears to be sustaining itself well. Egg take efforts here will continue as needed to provide round whitefish for stocking into candidate waters to facilitate the restoration of this species.