

Silver Lake General Biological Survey #519080:
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Silver Lake (UH-P270) is a remote 75-acre water found in the Silver Lakes Wilderness in Hamilton County. The access to the lake is by a 7.5-mile walk, one-way, on the Northville-Placid trail from the trailhead near the town of Upper Benson. Silver Lake is the water where the current NY state record brook trout was caught in 2013.

Silver Lake has a maximum depth of 50 feet, and there was sufficient dissolved oxygen present for trout to a depth of about 35 feet. Historically an excellent brook trout water, but acidity has been an issue in Silver Lake, and it was found to be fishless with a pH of 4.92 in 1976. Water samples were drawn in 2019 for analysis of normal and advanced chemical metrics at depths of 5 and 35 feet.

Table 1. Selected Silver Lake water chemistry variables.

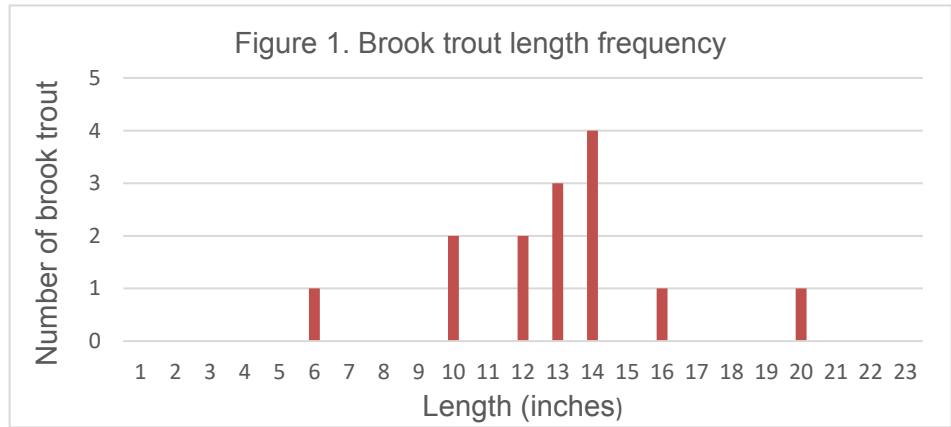
Date	Depth (feet)	Air Equilibrated pH (pH units)	Acid Neutralizing Capacity (µeq/L)	Inorganic Monomeric "toxic" Aluminum (µM/L)	Base Cation Surplus (µeq/L)	BC/RCOOs-	Conductivity (µmhos/cm)	Silica (Mg/L)
8/28/19	5	6.31	15.1	0.00	21.8	5.4	8.9	1.6
	35	6.65	34.0	0.00	30.9	6.2	12.1	2.4
3/30/16	0	6.02	8.0	0.80	7.3	7.6	12.2	
8/26/15	0	5.98	14.4	0.05	14.9	7.9	11.0	
8/8/05	5	5.48	7.1				15.0	
	40	5.99	15.9				15.8	
6/1/75	0	4.92						
7/13/32	1	6.60						
	30	6.00						

All of the relatively recent chemical metrics (Surveys #516008, #515063, #519080) appear to show that conditions are favorable for the restoration of brook trout, even the spring metrics.

Experimental stocking of 2200 Temiscamie x Domestic brook trout annually was begun in 2002 when some regional waters began to show signs of recovery from acidic conditions. This policy was shifted to the Windfall strain in 2008 and the current stocking policy is for 1850 Windfall strain spring fingerlings annually. Despite what appears to be quite reasonable chemical conditions and an ongoing stocking regime, according to anglers, brook trout remain very difficult to catch in Silver Lake.



On 8/29/2019 four, 150-ft Swedish experimental gill nets, a 30-ft minnow net and a minnow trap were set in the lake. Silver Lake remains a brook trout monoculture and 14 brook trout were collected. While only a small number of brook trout were collected from this 75-acre water the size of the fish



was exceptional with brook trout lengths ranging from 6 to 20 inches (Figure 1). The condition of the fish was also excellent. Brook trout were aged by scale analysis and this analysis confirmed that the Silver Lake brook trout have excellent growth. A four-year old fish with a length of more than 20 inches and a weight of 4.5 pounds was collected (Table 2.). At the other end of the spectrum a fish stocked on 5/14/19 (length at stocking normally 2-3 inches) was collected and also showed exceptional growth. This individual reached a length of 6.5 inches by late August. The dearth of smaller brook trout in the population makes it unlikely that natural reproduction is occurring to a large degree. The outmigration of spawning brook trout has been documented in some Adirondack waters, and it is possible that this may be occurring in Silver Lake. It is also possible that the exceptional growth here may fuel early maturation.

The early maturation may be a consequence of spring stocking and extremely fast growth. Given these possibilities, stocking should shift away from the spring stocked Windfall strain of brook trout. Ongoing management of this

Table 2. Average size at age of brook trout from Silver Lake 2019.

Age	Average Length (inches)	Average weight (pounds)	Sample Size
0	6.5	0.13	1
1	12.1	0.93	5
2	13.7	1.31	5
3	14.9	1.59	1
4	20.1	4.54	1

special water should continue, but with a change to Temiscamie x Domestic fall fingerling brook trout at an annual rate of 1850. The hope is that by stocking in the fall, fish would be less likely to out-migrate, and a more balanced population would inhabit the lake. This stocking change should be evaluated with a fish survey in about 5 years.