

**Middle Loomis Pond General Biological Survey #519109:
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Middle Loomis Pond (UH-P257) is located in the Silver Lakes Wilderness. It has a surface area of 8 acres, a maximum depth of 20 ft. and an average depth of 6.9 ft. Middle Loomis Pond was stocked annually with brook trout from 1956 to 1961 but stocking was discontinued after a 1961 survey (#561017046) captured no fish and recorded a pH of 5.00.

In 2015, samples were drawn from Middle Loomis Pond and advanced chemical analyses were performed by the Adirondack Lakes Survey Corporation (ALSC) to identify waters recovering from the effects of acid precipitation that may once again support native fish communities. Relatively recent improvements in the acid/base chemistry of some Adirondack waters have already been documented, and some of these waters, such as Brooktrout Lake (B-P874), now contain self-sustaining brook trout populations.

In 2015 and 2019 water samples from Middle Loomis Pond had advanced chemical metrics, Base Cation Surplus (BCS) and the ratio of Base Cations to Strong Organic anions (BC/RCOOs) performed to provide a deeper understanding regarding the ability of this water to sustain a brook trout population. The BCS provides a useful tool for the evaluation of recovery from acidification in the presence of increasing dissolved organic carbon and the BC/RCOOs helps to quantify the strength of “naturally acidic conditions” found in some Adirondack waters. Preliminarily, it appears that for a water to support brook trout, BCS values should be above -15 µeq/L, and the BC/RCOOs ratio should be above 1.5. As well as the advanced metrics a “toxic aluminum” level below 2 µM/L⁻¹ is thought to be critical for brook trout survival.

Table 1. Middle Loomis Pond selected water chemistry values 1932 to 2019.

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 ⁻¹	Sodium mg L ⁻¹
8/29/19	0	5.01	1.3	1.19	-18.0	1.2	9.0	0.8	0.11
8/26/15	0	5.20	2.2	1.18	-11.9	2.5	9.0		
8/4/87	5	4.69	-14.5				23.8		
6/26/87	5	4.78	-12.7				21.7		
7/12/61	0	5.00							
7/25/32	0	5.00							
7/25/32	18	4.40							

While brook trout survival thresholds were met for the 2015 advanced chemical metrics and the “toxic” aluminum level, this water was not experimentally stocked simply because the pH and ANC were so low. The 2019 samples were found to actually have poorer acid/base chemistry than the 2015 sample and the BC/RCOOs did not meet the established experimental threshold



for brook trout survival. Despite the slightly poorer chemistry values in 2019, it is obvious that the chemistry has notably improved since the 1980s and a water sample for chemical analysis should again be drawn within the next 4-5 years as the improvement in most regional waters is ongoing.