

Opalescent River Water Chemistry Survey # 521087
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The Opalescent River (H-543) is an Upper Hudson watershed and originates on the slopes between Mount Colden and Mount Marcy. The Opalescent flows 16 miles on its course to the Hudson River. Much of the river is in the High Peaks Wilderness Area and is accessed from foot trails. The current survey is a follow up to a 2019 electrofishing effort (Survey #519090) near Lake Colden. Despite habitat that looked favorable for trout survival, no fish were captured or observed. That survey did not include evaluation of the water chemistry, however, so water was collected and analyzed by the Adirondack Lakes Survey Corporation in May 2021 in order to get a more complete picture of the fishery.

Although there have been tremendous improvements recently, the waters in the Lake Colden/ Avalanche Lake area are known for having elevated acidity levels that may preclude fish survival. Measuring acidity parameters in the Opalescent River would therefore be informative. High elevation mountain rivers tend to be somewhat sterile, so conductivity, a surrogate for productivity, would also be a relevant metric. The results for the Opalescent River, along with two nearby streams, can be seen in Table 1.

Table 1. Selected water chemistry variables for Lake Colden area streams on May 19, 2021.

Water Name	Air Equilibrated pH (pH units)	Acid Neutralizing Capacity (ANC) (µeq/l)	Inorganic Monomeric "toxic" Aluminum (µmol/l)	Base Cation Surplus (BCS) (µeq/l)	Conductivity (µmhos/cm)
Opalescent River	5.49	6.87	0.52	-6.13	9.44
Cold Brook	5.95	16.47	0.37	7.20	11.50
Caribou Creek	5.38	2.75	1.26	-10.84	9.66

A single site, on all three streams, was sampled with a backpack electrofishing unit in September 2019. All sites seemingly had good habitat, but only Cold Brook (Survey #519088) produced fish, all of which were wild brook trout. Though water chemistry sampling is only available for a single day in 2021, Cold Brook was superior to the other two streams in every variable listed. Low conductivity values can reduce the efficiency of the backpack shocker and make it more difficult to collect fish, but the Opalescent's meager reading is analogous to that of Cold Brook. The chemistry results seem to mirror the fish take and it is likely that acidification recovery in the Opalescent River is lagging behind the recovery rate of Cold Brook. Periodic sampling of water chemistry is recommended for all three streams to monitor water quality conditions that will hopefully continue to progress.

