

## Indian Lake General Biological Survey #521027

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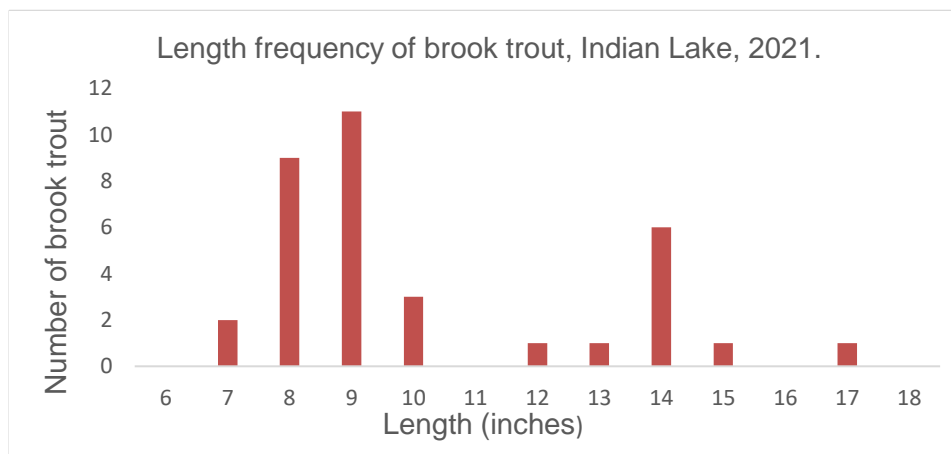
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Indian Lake (B-P852) is a remote 82-acre water straddling the border between the Moose River Plains Wild Forest and the West Canada Lakes Wilderness, Town of Morehouse, Hamilton County. The maximum depth of Indian Lake is 35 feet, and there is adequate dissolved oxygen almost throughout the water column. The flushing rate, calculated by Adirondack Lakes Survey Corporation (ALSC), was quite high at 9.6 times per year. Indian Lake was a historic brook trout water that was first stocked with brook trout in 1942. Stocking ceased after a 1984 ALSC survey in which no fish were captured (the pH was 4.89), but brook trout stocking was restarted in 2013 due to improved water chemistry as measured by the ALSC Long Term Monitoring Project, which provides a wealth of additional chemistry information for this water.

A fish survey was performed in 2017 (#517048) and three year-classes of stocked brook trout (2013, 2015, 2016) were collected. The number of fingerling brook trout stocked was reduced following the 2017 fish survey, to promote growth. Analysis of the water chemistry of Indian Lake and its tributaries continued in 2018 (#518084), and historic improvements in acid/base chemistry were documented. In 2019 (survey #519108), surface samples were drawn from Indian Lake over a 5-month period and advanced chemical analyses were performed by the ALSC. These advanced chemical metrics did indeed quantify the improvements to water chemistry that were allowing the brook trout population to thrive.

In June of 2021 three Swedish experimental gill nets, a 30-foot minnow net, and a minnow trap were set overnight. As Indian Lake is part of the Long-Term Monitoring Project of ALSC (LTM), there was no need to take a chemistry sample during the survey. The 2021 fisheries survey was primarily undertaken to determine if natural reproduction is occurring in the brook trout population. A total of 35 brook trout were collected during the survey, and only a single brook trout was unclipped. A total of eight central mudminnow were also collected but this species is not a serious competitor for brook trout. Indian Lake brook trout lengths ranged from 7 to 17 inches, and brook trout in excellent condition aged 1 through 4 (using scale analysis), were collected. Brook trout growth here has improved following the stocking reduction prompted by the 2017 fish survey (#517048).

With only a single unclipped brook trout collected here; natural reproduction is obviously minimal, and brook trout stocking should continue. Silica levels are thought to be an indicator of groundwater input which is critical for brook trout reproduction. The silica levels of Indian Lake, measured during the LTM project, appear to be relatively high in spring but decrease dramatically in most summers. At least in Indian Lake, a scenario such as this does not



appear to provide enough groundwater to support brook trout reproduction. There will be no further need to fin clip the stocked fingerling trout, but the current stocking policy of 2,250 unclipped Horn Lake strain brook trout fingerlings should continue. Discussions on which brook trout strain to stock in the future are currently occurring.