



A century of temperature variability in Lake Superior

Austin, Jay, Steve Colman

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ABSTRACT: A 100-yr-long time series of water temperature measured just downstream of Lake Superior is used to produce proxy time series of open-lake temperature. This analysis suggests that open-water Lake Superior summer temperatures have increased by roughly 3.5° C over the last century, most of that warming occurring in the last three decades. Correspondingly, the length of the positively stratified season has increased from 145 d to 170 d. The observed amount of warming is greater than the observed change in regional temperature over the same time period by roughly a factor of two. The discrepancy can be understood in the context of reduced winter ice cover, and implies that spatially and temporally averaged ice cover in Lake Superior has decreased from 23% to 12% over the last century.

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