A Dendrochronological Record of Twentieth Century Water Levels in Georgian Bay, Ontario, Canada

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Dendrological studies provide a proxy for local and regional Holocene climate inferences. Annual tree ring growth is a combination of multiple climatic factors such as precipitation and temperature. In forests adjacent to large lakes, dendrochronological records also relate to high and low level lake stands. Further, these histories help us understand the effects of climate change on insular forests and may help us predict future impacts on insular forests in relation to changing climates.

The purpose of this study is to examine whether the annual growth of trees in an insular forest can be correlated with the timing of high and low level lake stands. The response of trees to the historical climate records, such as lake levels, can be used to better understand the response that insular forests may have to a changing climate. Previous dendrohydrology studies have shown that there is a strong correlation between stream height and lake levels with annual ring growth\textsuperscript{1,2}. Here I present new dendrochronological data from insular forests on small islands in The Massasauga Provincial Park, along the eastern shore of Georgian Bay (Ontario, Canada). I present preliminary data on two new tree-ring chronologies of \textit{Pinus strobus} (White Pine) (1777-2015) and \textit{Tsuga canadensis} (Hemlock) (1891-2015). There was poor correlation for either species; however there is strong correlation between ring growth and annual change in water levels of the Georgian Bay.
