Southwestern Nova Scotia's hidden old-growth forests: extending tree-ring chronologies through historic churches

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Old-growth forests in their traditional form are rare in southwestern Nova Scotia, due to hundreds of years of deforestation by settlers and industry. However, old-growth forests abound in historic churches in the region, as they were among the first buildings constructed by settlers and have been maintained by their parishioners. As such, historic churches in southwestern Nova Scotia are not only rich in cultural history, the wood used to construct them holds a wealth of information on the environment of the region up to the time of initial settlement. Dendroarchaeology is the study of tree rings in beams within historical structures. It is used to determine cut dates of trees used in the construction of these historic structures, as well as to gain insight into the growth patterns of trees from that time.

In this project, samples were collected from eight historic churches within southwestern Nova Scotia to improve our understanding of how several tree species were growing in the region at the time of settlement. Master chronologies were constructed of radial growth from each tree species at each church, with the goal of adding growth patterns to existing regional chronologies to extend radial growth records for each tree species in the region.

This project successfully extended master chronologies and improved sample depth of master chronologies for red spruce, white pine, and eastern hemlock in Nova Scotia and New Brunswick. Master chronologies specific to southwestern Nova Scotia were also constructed for these three species. Project implications include increased confidence in historic structure dating in southwestern Nova Scotia through dendroarchaeological methods, as well as having master chronologies that will be useful in creating climate prediction models for the region.