



**Mount Allison
Dendrochronology Lab**

THE WILLIAM COOK HOUSE:

DATING AN OLD STRUCTURE USING DENDROARCHEAOLOGICAL
METHODS IN BLACK LAND, NORTHERN NEW BRUNSWICK

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Abstract

Three cookies taken on logs from an old structure located at Black Land, northern New Brunswick, were analyzed by dendrochronological methods. The structure is thought to be the original dwelling of William Cook who arrived from Scotland in 1829. Two of the samples were identified as spruce (*Picea sp.*) and the third one is white pine (*Pinus strobus*). A cut date for both spruce cookies was successfully established at 1836 for these samples. Similarly a cut date for the white pine sample was established at 1836 too. With time for the green wood to season incorporated into the equation, the structure was probably built in 1837.

Introduction

In early summer of 2007, Mr. John Russell brought some sizable logs to the Mount Allison Dendrochronology Lab (MAD Lab) taken from an old structure located at Black Land near Charlo in northern New Brunswick. The structure is thought to be the original home of William Cook who arrived in New Brunswick in 1829 from the isle of Arran, Scotland (John Russell, personal communication). In more recent times, the building was used as a storage space and garage, but has fallen into disrepair in recent years (Figure 1A). Some of the logs remaining (Figure 1B) were kept and a few of these samples were taken to the MAD Lab. A wedge (or cookie) was cut from the three logs that were in good enough condition for a dendrochronological analysis and then stored until further processing. The samples were designated as MAD Lab #07BS001-03.



Figure 1A) The remnants of the structure in the lot in Black Land near Highway 134 where parts of the original William Cook House remain. 1B) One of the logs along with cedar shingles at the site. *Photos - John Russell*

Tree-ring analysis

The cookies were later resurfaced by sanded then with increasingly finer-grained sandpaper to expose the annual rings. The rings were measured using a 24 inch movable Velmex stage connected to a digital encoder which gave the measurements an accuracy of 1/1000 mm. Three paths were measured on each cookie and ring-width series were produced from those measurements. The wood was also identified and two species were found: the first two samples were spruce (*Picea sp.*) and the other was white pine (*Pinus strobus*).

The spruce series from the logs were crossdated against two red spruce master chronologies from New Brunswick: one made from dated structures on the Acadian Peninsula (Leighton, Robichaud, and Laroque, 2006) and another chronology from dated structures from southeast New Brunswick (Laroque *et al.*, 2004; Selig, Laroque,

and Marsh, 2007). Figures 2 and 3 illustrate mean standardized ring-width curves of the spruce logs (mean of all six paths) compared to the master chronologies. Both show a strong correlation and suggest a cut date of 1836 for the logs. The white pine log was not crossdated. Figure 4 illustrates the crossdate for the white pine sample to a local white pine chronology from Caribou Depot, between between Bathurst and St Quentin in northern NB (Pickard, Robichaud, and Laroque, 2007). The Black Land pine curve is an average of the three paths that were measured and standardized. The pine crossdate also suggests a 1836 cut date.

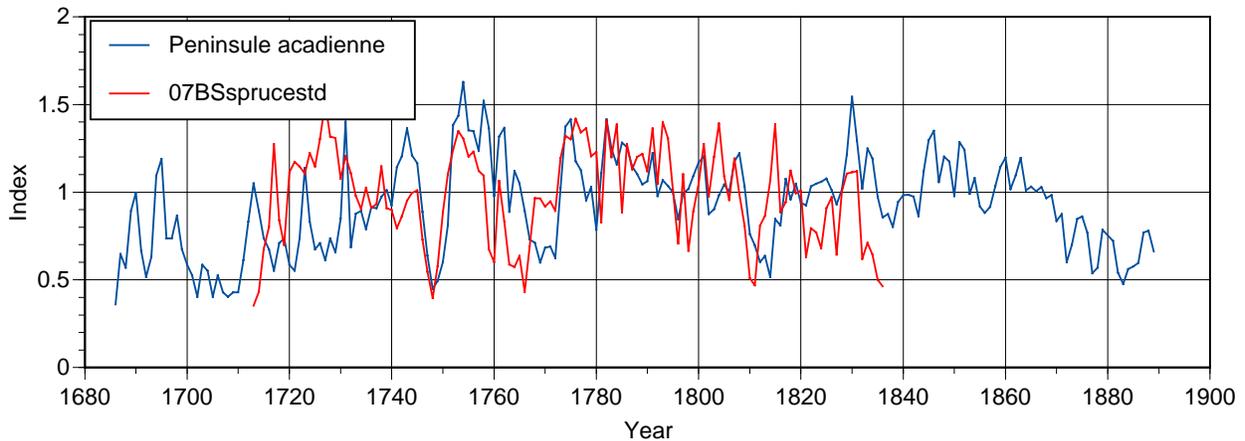


Figure 2: Mean standardized ring-width curve of a Black Land spruce logs (in red) compared to a red spruce master chronology from the Acadian Peninsula.

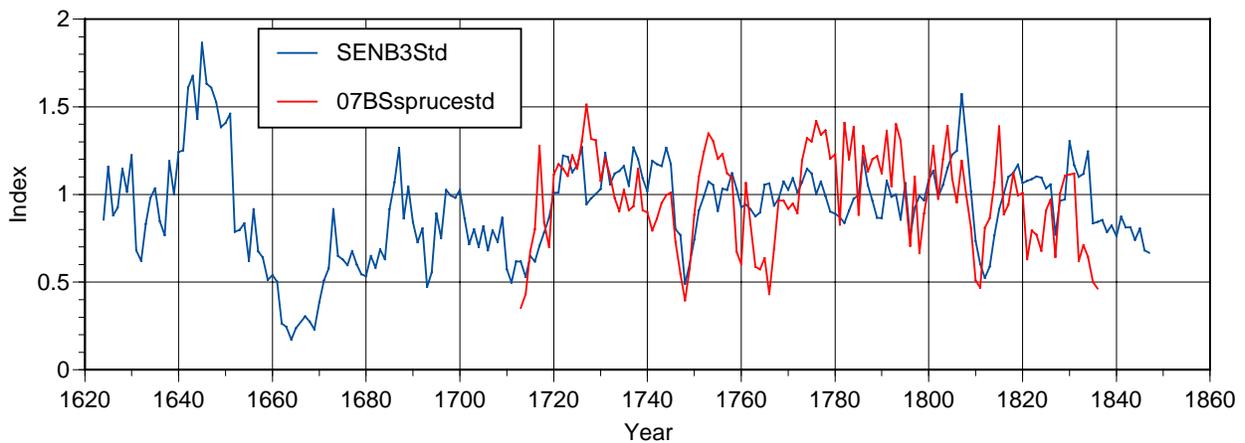


Figure 3: Mean standardized ring-width curve of the Black Land spruce logs (in red) compared to a red spruce master chronology from southeastern New Brunswick.

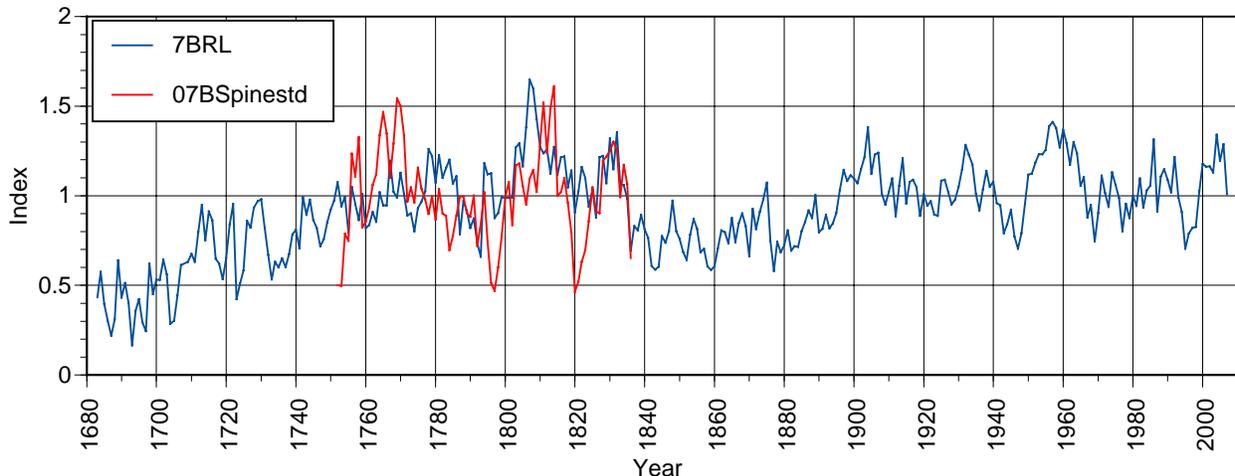


Figure 4: Mean standardized ring-width curve of the Black Land pine log (in red) compared to a white master chronology from northern New Brunswick.

Conclusion

The Black Land wood analysis indicates that two of the samples are spruce and the other one is white pine. The spruce logs were successfully dated by dendrochronological means and suggest a cut date of 1836. Similarly the white line log was successfully dated and it too suggests a cut date of 1836. Because wood is usually left to dry for some period of time (a season, a year) after it was felled, it is generally assumed that the structure is built a short time after the cutting of trees. Given this, the Black Point structure was probably built in 1837.

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