DATING THE COBEQUID ABOITEAU, NOVA SCOTIA: FINAL REPORT

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Abstract

The Colchester Historical Society possesses a section of a sluice taken from an Acadian aboiteau from the banks of the Salmon River in the vicinity of Truro, Nova Scotia. The sluice was dated by dendroarchaeological means and the results indicate that the tree that was used to make the sluice was cut in 1723. The aboiteau was most probably built shortly after that date.

Introduction

In 2004, an aboiteau was found on the banks of the Salmon River near Truro, Nova Scotia, in an area named Cobequid by early Acadian settlers. The waterbox, or sluice, was in good condition and still had pegs, clapper and top boards (Figure 1). The Colchester Historical Society obtained a section cut off from the buried sluice and is now preserved at the museum. Because it was thought to be of Acadian origin from pre-Deportation times and could have great historical value, Mrs. Elinor Maher, Program Committee Chair of the Colchester Historical Society, contacted the Mount Allison Dendrochronology Laboratory (MAD Lab) in June 2007 for a dendrochronological assessment. Consequently, the Mad Lab sampled the sluice, measured the rings and identified the wood in the summer of 2007. Results indicated that the wood was eastern hemlock (*Tsuga canadensis*), the sample had 137 rings, and the terminal ring was present (Figure 2) which made the object suitable for crossdating (Robichaud and Laroque, 2007). However, there was a lack of hemlock master chronologies to proceed to the actual dating of the artifact. The MAD Lab has since developed several hemlock regional chronologies from Nova Scotia sites which allowed for a new dendroarchaeological assessment of the aboiteau. This report present the final crossdating results from the Cobequid aboiteau sluice.

Figure 1: The Cobequid sluice with its clapper on the banks of the Salmon River as it was found in 2004.

Figure 2: Sampling of the sluice in 2007 on a section with the terminal ring.

Crossdating

The tree-ring series from the Cobequid sluice was statistically crossdated against several hemlock regional chronologies from Nova Scotia using the software COFECHA (Holmes, 1983; Grissino-Mayer, 2001). The Cobequid series was standardize using ARSTAN (Holmes et al., 1986) (single detrending using a negative exponential, cubic smoothing spline, or a linear regression detrending curve) plotted on a graph and compared visually with averaged standardized curves from regional chronologies according to the crossdating possibilities suggested by COFECHA. From the few possibilities that occurred, the Middleton hemlock regional chronology established from timbers sampled in the Holy Trinity Church dated at 1788 (Robichaud et al., 2006) produced the best and most complete results. The graph on Figure 3 illustrates the visual paring of the Middleton standardized curve with the Cobequid sluice standardized curve. Statistically, the Pearson correlation calculated between both standardized indices is 0.366 and is considered highly significant. The cutting date found for the sluice is therefore 1722.

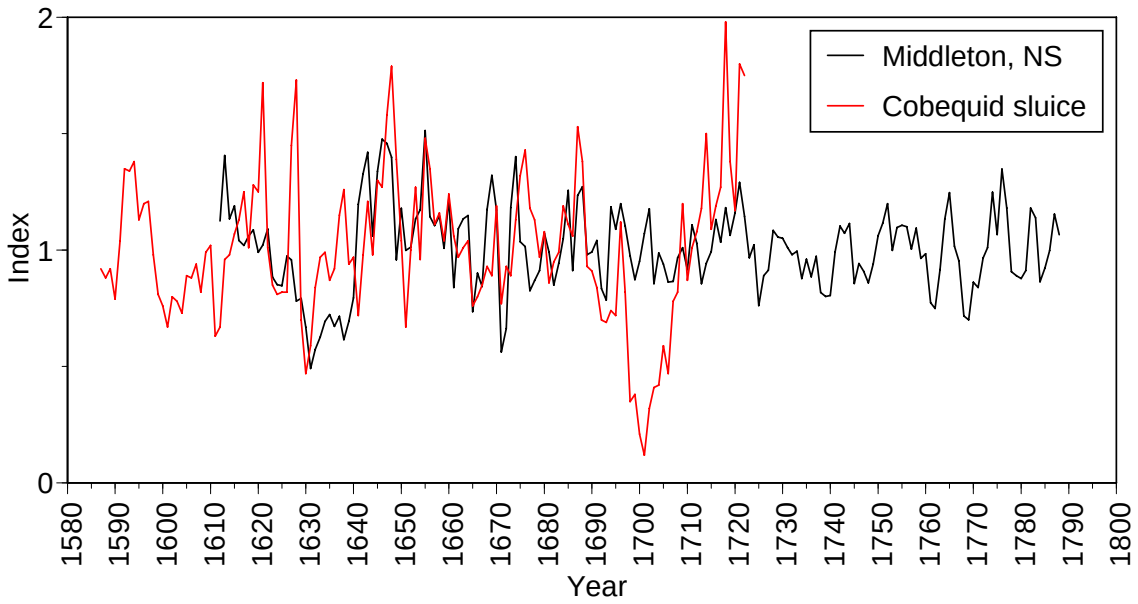

Figure 3: The Middleton regional chronology curve (in black) compared to the Cobequid sluice series (red). The cutting date for the sluice is 1722.

Conclusion

From the dendroarchaeological analysis of the Cobequid aboiteau sluice, the cutting date of the artifact held by the Colchester Historical Society is 1722. Consequently, if the tree that was used to make the sluice was felled in that year, the aboiteau itself was most probably built shortly after. It easily pre-dates the Deportation and was built by the Acadians that had settled in the area they then called Cobequid.

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