

A Dendrochronological Analysis of Stratford Cabin in Delaware, Ohio

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Background and Objective:

This is the final report on the dendrochronological analysis of the Stratford Cabin in Delaware, Ohio. Dendrochronology is the science of analyzing and calendar dating annual growth rings in trees. This process can be used to assign calendar dates to timber felled for historical structures across Ohio.

Methods:

Jeff Dilyard collected five core samples from beams within the Stratford Cabin. They were identified as oak and processed by summer researchers in the College of Wooster Tree Ring Lab following established dendrochronological methods. Ring widths were measured to the nearest 0.001mm and run in a program called COFECHA, which aids in cross-dating the cores with one another. Ring widths were compared to those of a master record of southwest Ohio and a master of northeast Ohio.

Results and Analysis:

Results from this study can give us information regarding the year in which this cabin was constructed. The following table shows each sample and its identified years of growth. The total number of rings is recorded along with the first and last years of tree growth. The last full ring represents the last year of each core's growth.

Table 1. Results of the dendrochronological analysis.

Sample ID	Rings	First year	Last year	Additional notes
A-1	64	1785	1849	Full outer ring
A-2	71	1778	1849	Full outer ring
B-1	91	1758	1849	Full outer ring
C-1	234	1611	1845	Main beam, partial outer ring
D-1	56	Incon.	Incon.	Full outer ring

We have concluded that the most of the logs in the cabin were felled after the growing season of 1849, and before the growing season of 1850. C-1 is anomalous because the outermost ring is broken, indicating that some rings may have been lost. The dating of D-1 was inconclusive, as it did not date well with the others. This is not surprising as it is

our shortest core. Since most logs were used shortly after being cut down, the cabin was likely constructed shortly after the growing season of 1849.

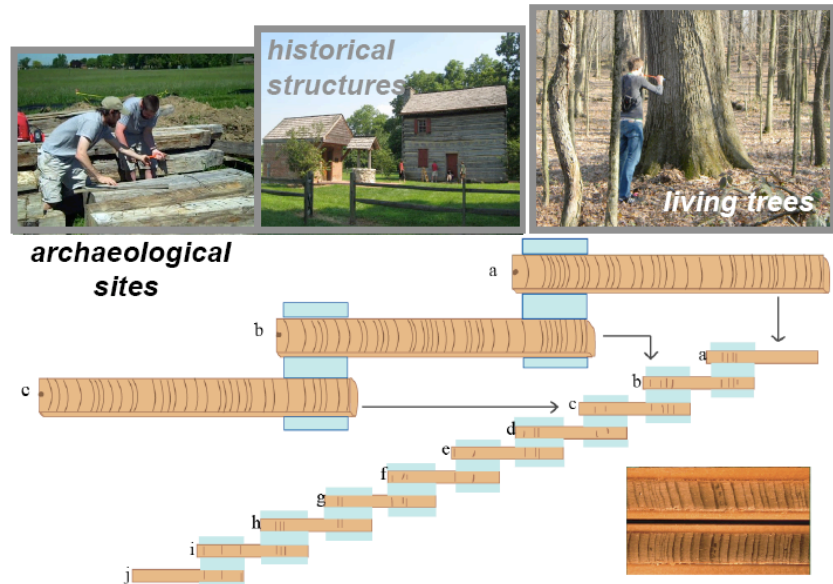


Figure 1. Diagram illustrating tree-ring crossdating of a historic house or barn. Patterns of wide and narrow ring-widths from historic structures and wood associated with archeological sites are matched to living tree-ring chronologies and calendar dates are assigned to each ring.

References Cited:

Grissino-Mayer, H., 2001, Evaluating crossdating accuracy: A manual and tutorial for the computer program COFECHA: *Tree-Ring Research*, v. 57, p. 205-221.