

Spring 5-20-2011

Dendrochronological dating of Perry County District Library, Somerset, Ohio

Follow this and additional works at: <http://openworks.wooster.edu/historicstructures>



Part of the [Geology Commons](#)

Recommended Citation

"Dendrochronological dating of Perry County District Library, Somerset, Ohio" (2011). *Historic Structures*. 40.
<http://openworks.wooster.edu/historicstructures/40>

This Book is brought to you for free and open access by the Geology Data Archive at Open Works, a service of The College of Wooster Libraries. It has been accepted for inclusion in Historic Structures by an authorized administrator of Open Works. For more information, please contact openworks@wooster.edu.

Spring 5-20-2011

Dendrochronological dating of Perry County District Library, Somerset, Ohio

Follow this and additional works at: <http://openworks.wooster.edu/historicstructures>



Part of the [Geology Commons](#)

Recommended Citation

"Dendrochronological dating of Perry County District Library, Somerset, Ohio" (2011). *Historic Structures*. 40.
<http://openworks.wooster.edu/historicstructures/40>

This Book is brought to you for free and open access by the Geology Data Archive at Open Works, a service of The College of Wooster Libraries. It has been accepted for inclusion in Historic Structures by an authorized administrator of Open Works. For more information, please contact openworks@wooster.edu.

Dendrochronological dating of Perry County District Library, Somerset, Ohio

Sampled: May 20th 2011

Anna Mudd, Jon Theisen, Greg Wiles
Wooster Tree Ring Lab
Department of Geology
The College of Wooster
Wooster, OH 44691
Tel: 330-263-2298, gwiles@wooster.edu

<http://treering.voices.wooster.edu/about-2/>



Objective:

To provide a calendar date for the felling of timber used to build the Perry County District Library in Somerset, Ohio using dendrochronology. Tree-ring dating shows that the logs were cut in the spring of 1818.

Methods:

15 cores of white oak were taken from basement beams in the Library using hand augers and electric drills with hollow bits. With the aid of a microscope, rings of seven cores were counted and measured to the nearest 0.001 mm. Using standard dendrochronological techniques (Stokes and Smiley, 1968), rings were crossdated against each other to create a “floating” chronology for the site based on correlations between ring patterns. This site’s ring-width data was then compared to the calendar-dated Northeast Ohio (NEO) regional ring series to obtain a calendar year for the felling of the timber (Fig. 1).

Results and Analysis:

Crossdating of the floating chronology to the NEO master series determined that the trees were cut in the spring of 1818. The correlations were strong (Fig. 2) and each sample displayed the same last ring date. The last whole ring of each core, with both spring and winter growth, was dated to 1817, and every outer ring was present and displayed spring growth, indicating that the trees had been cut early in 1818 (Table 1, Fig. 3).

Archiving of Samples and Data:

All cores and data are archived at the Wooster Tree Ring Lab, housed in the Department of Geology, The College of Wooster.

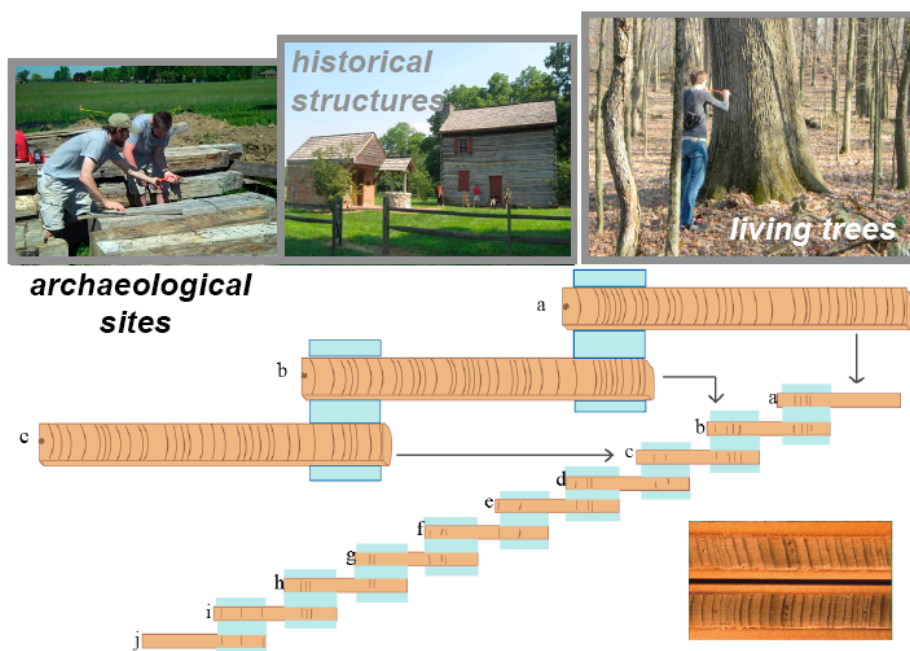


Figure 1. Diagram illustrating tree ring crossdating. Patterns in ring widths from archaeological and historic structures are compared to living tree ring chronologies in order to assign calendar dates to each ring.

Core	Inner Year	Outer Year/Cut year	Total Years	Observations
LIB01a	1676	1818	142	Outer spring wood
LIB03	1717	1818	101	Outer spring wood
LIB05	1697	1818	121	Outer spring wood
LIB06	1668	1818	150	Outer spring wood
LIB07	1663	1818	155	Outer spring wood
LIB08	1716	1818	102	Outer spring wood
LIB10	1704	1818	114	Outer spring wood

Table 1. Summary of core data. The inner year is the first whole ring counted. Outer year/cut year is the year in which the tree was felled. All samples displayed outer rings with spring growth.

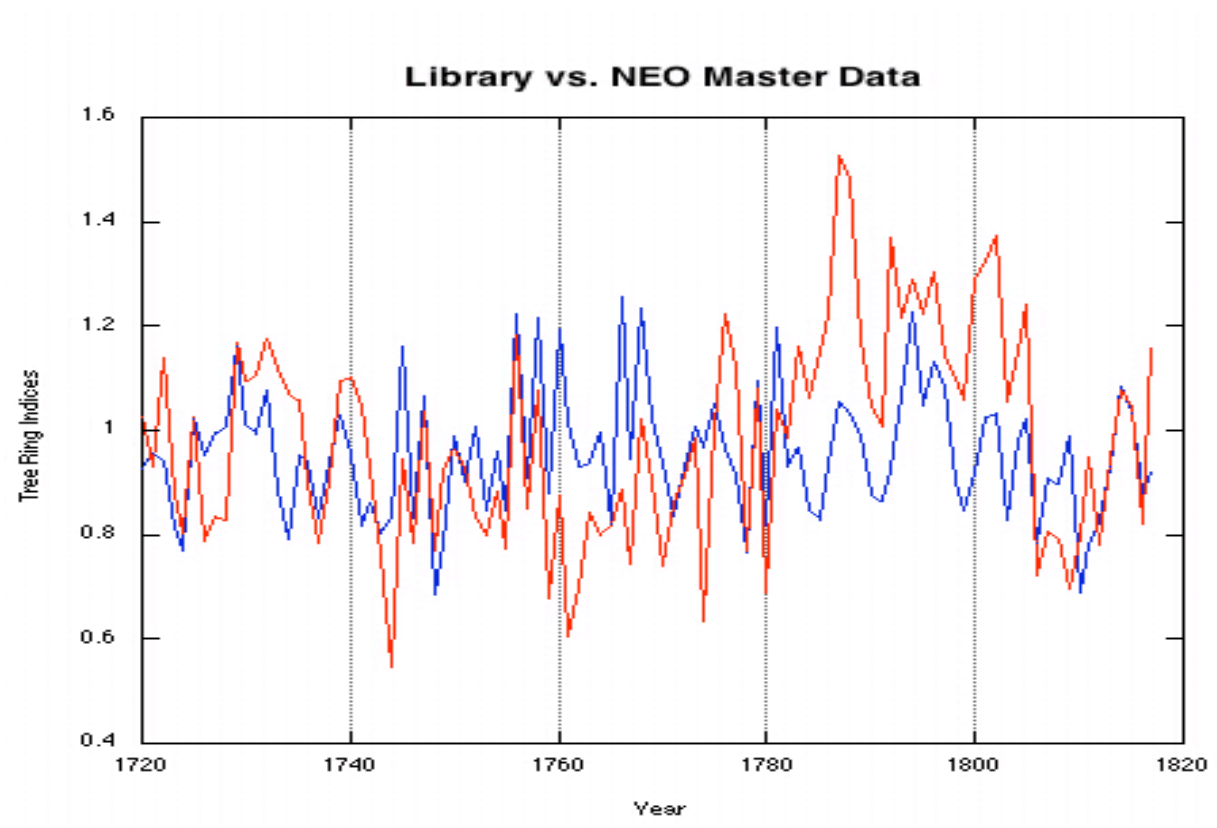


Figure 2. This graph shows the correlation between the NEO master tree ring series (blue) and the data from the library cores (red). The correlation of the series overlap is 0.47.

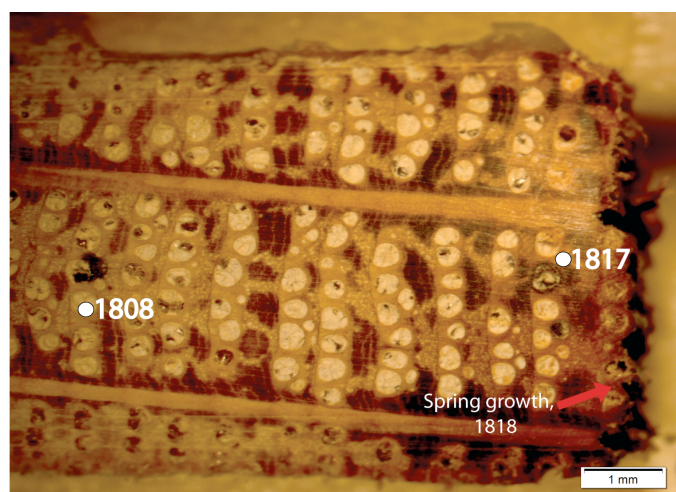


Figure 3. Image of core LIB06. Spring wood can be seen at the very end of the core, indicating that the tree was cut early in the 1818 growing season.

Reference:

International Tree-Ring Data Bank (ITRDB), 2003, Data available at <http://www.ngdc.noaa.gov/paleo/treering.html>.

Stokes M. A., and Smiley, T. L., 1968, An introduction to tree-ring dating: Tucson: University of Arizona Press.