

# **Dendrochronological Analysis of White Oak trees, Cornerstone Elementary, Wooster Wayne County, Ohio**

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Report submitted to (your name here)

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**General Analysis:** Cores and sections from old growth oak trees outside Cornerstone Elementary were processed and crossdated (Fig 1) at the Wooster Tree Ring Lab using standard dendrochronological techniques (Stokes and Smiley, 1968). These techniques include preparing the cores surfaces, counting rings, measuring and crossdating ring-widths. Ring-widths were measured to the nearest 0.001 mm and crossdating was performed visually and using the computer program COFECHA (Holmes, 1983).

The two 5-mm cores and eleven cross-sections from the oak trees (Table 1) were internally crossdated with one another to construct a floating ring-width series. This floating chronology was then absolutely dated against calendar-dated, living, ring-width chronologies from the region including Johnson Woods, Sigrist Woods, and Brown's Lake Bog (ITRDB, 2005; Wooster Tree Ring Lab, unpublished data, 2005). The floating ring-width chronology from the Cornerstone site spans 350 years and when adjusted to calendar dates ranges from AD 1654-2003.

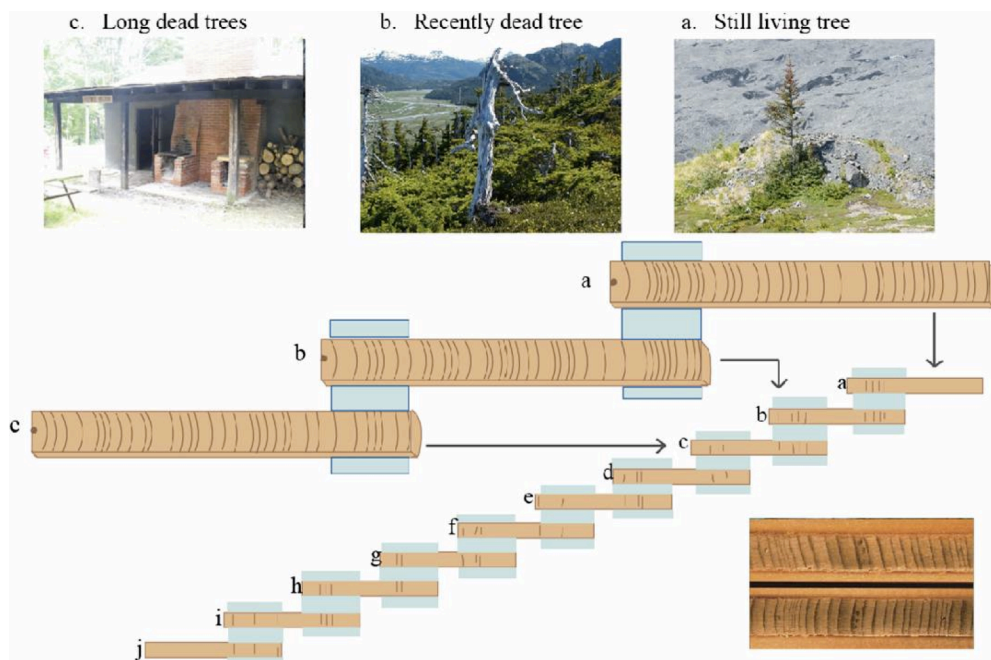
Table 1 summarizes the calendar dates of each sample and lists the presence of an outer ring in the samples. Outer rings provide a calendar date for when the tree was cut or fell. Although samples include the sapwood, not all of the indicate the last year of growth, as they do not have an outer ring.

This chronology will contribute to tree-ring dating of historical building in Northeast Ohio as well as be included in climate studies, especially those concerned with drought variability in the region. All cores and data are archived at the Wooster Tree Ring

lab, which is housed in Scovel Hall in the Department of Geology at The College of Wooster. We would be happy to discuss the results with you.

**Table 1:** List of tree-rings from the Cornerstone Elementary site. Samples providing an outer ring are underlined.

	Sample	First Year	Last Year	Total Years
1	cs1a	1654	2003	350
2	Cs1b	1698	2003	306
3	CS1C	1732	2003	272
4	CS03N	1808	2002	195
5	CS04WB	1783	2002	202
6	CS6B	1691	2001	311
7	CS11B1	1678	2004	327
8	CS11B	1788	2003	216
9	CS13.1	1675	2003	329
10	Cs13c	1656	2003	348
11	CS13D	1656	2003	348



**Figure 1:** Principles of Crossdating (Anne Krawiec, 2005). Crossdating matches overlapping ring-width patterns.

**References:**

- Holmes, R.L. 1983. Computer-assisted quality control in tree-ring dating and measurement. *Tree-Ring Bulletin*, **43** (1), 69-78.
- Stokes, M. A., and Smiley, T. L., 1968: *An Introduction to Tree-Ring Dating*. Chicago: University of Chicago Press. 73 pp.
- International Tree-Ring Data Base (ITRDB), 2005, [www.ncdc.noaa.gov/paleo/paleo.html](http://www.ncdc.noaa.gov/paleo/paleo.html).