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# **Dendrochronological Analysis of Oak (*Quercus*) Tree Cross-sections from the Victor Crouso field, Wayne County, Ohio**

**June 8, 2007**

Report submitted to Dr. Nigel Brush.

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Four cross-sections were taken from the Victor Crouso field in Wayne County, Ohio. The four cross-sections were processed and crossdated at the Wooster Tree Ring Lab using standard dendrochronological techniques (Stokes and Smiley, 1968). These include preparing the core surfaces by sanding, counting, and measuring ring-widths to the nearest 0.001 mm. Crossdating was performed visually and using the computer routine COFECHA (Holmes, 1983).

The four cross-sections consisting of cross-sections from oak trees (*Quercus*) (Table 1) were internally crossdated with one another to construct a floating 168 ring-width series. The floating chronology from the Victor Crouso Site was then absolutely dated against calendar-dated, living, ring-width chronologies from the region including Johnson Woods, Sigrist Woods, and Browns Lake Bog (ITRDB, 2005; Wooster Tree Ring Lab, unpublished data, 2005). The floating ring-width chronology when adjusted to calendar dates ranges from 1660 to 1828 AD.

Table 1 summarizes the calendar dates of each sample and the total number of years for each sample.

**Table 1:** Calendar-dated tree-ring series from the Victor Crouso field in Wayne County, Ohio

Sample number	First Year of Growth	Last Year of Growth	Total Years
VC01B0	1732	1819	87
VC02B0	1739	1828	89
VC04A0	1745	1814	69
VC05A0	1660	1796	136

The sample for this site came from a random pile of logs in a field and therefore it is unknown what these logs were used for. None of the samples from the Victor Crouso field have bark present therefore the calendar date does not accurately represent the last year of growth for the tree. The Victor Crouso site calendar dates range from 1660 to 1828 AD.

This chronology will contribute to tree-ring data in Northeast Ohio as well as be included in climate studies, especially those concerned with drought variability in the region and our efforts to date historical structures. 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; specific information can be found on the TRL website ([www.wooster.edu/geology/tr/trl.html](http://www.wooster.edu/geology/tr/trl.html)).



**Figure 1:** Tree-ring crossdating relies on matching overlapping ring-width patterns. If matches are made to living tree then calendar dates can be assigned to the outer rings of the tree.

**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).