

Chronology constructed from Stebbin's Gulch samples.

How does our work relate to climate change?

Sampling houses and barns, as well as living trees, can help to further ecological and climate change investigations.

Tree ring data from each house or living tree is added to a master chronology for Ohio. We can then use these data for dating structures and to reconstruct Ohio's history. Since we know that trees located in the Midwest respond to precipitation, we can also use tree ring data to model past drought in Ohio and the greater Midwest.

Who We Are

About Us

We are staff and student researchers from the Department of Earth Sciences at The College of Wooster who are interested in the geological and archaeological applications of tree rings. We are skilled in sampling and retrieving data from wood in both historical structures and living trees. We use established dendrochronological methods to study beams in historical structures and provide calendar dates to homeowners and organizations interested in determining the true age of their buildings.

Contact Us

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A fresh core from a living tree being prepared for mounting.

See us featured in *Our Ohio's* YouTube Episode 'Barn Detectives'

https://www.youtube.com/watch?v=p-_jvOQsJmg



Wooster Tree Ring Lab

Department of Earth Sciences The College of Wooster Wooster, Ohio 44691





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Department of Earth Sciences

Using Tree Rings to Date Historical Structures



Summer research students sampling historical structures for Sonnenberg Village in Wayne County, Ohio.

What do we offer?

Using tree rings, we are able to determine the exact date a tree was felled. We are also able to determine the age of living trees.

How we determine dates

Our previous tree ring work in the region has allowed us to link together tree ring width data from many sites across greater northeast Ohio. We have built a 550-year-long ring width chronology over the past 20 years. This continuously growing databank allows us to correlate new samples with previous data, assigning exact calendar dates and even felling season of your samples.

After visiting a property and collecting samples, the wood cores are brought back to the lab and mounted. We then measure ring widths and perform cross-dating to determine the year of construction and age of the tree (see figures).

What we will provide you

A written report of the findings will include:

- Statement of methods
- Summary of dated samples
- A list of references to learn more about tree ring research



The principle of tree ring cross-dating. Ring widths from living trees are measured and matched to ring width patterns from historical structures and archaeological sites to develop tree ring chronologies.



Photomicrograph of an oak core from a historical building annotated to show calendar dates. Note the outermost ring is a partial ring showing spring growth of 1818. This tree was cut in the spring of 1818.



Sampling a living oak at Brown's Lake Bog in Wooster, Ohio.

Methods and Tools

Using an increment borer, we remove a 5mm cylindrical core of wood from the tree or beam. A drill or hand-operated borer is used for sampling historical structures; holes can be plugged with wooden pegs.

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Cores taken from chestnut oak trees at Holden Arboretum in Kirtland, Ohio. The chronology spans 1608-2017 and includes the oldest living tree in Ohio.



Null Cabin located in Springboro, Ohio. Sampled in 2010 and dated to 1805 for the client, Architectural Reclamation.