DENDROCHRONOLOGY or Tree Ring Dating

What is Dendrochronology?

Dendrochronology, or tree ring dating, examines the rings produced by trees each year in order to determine when the tree was cut down, how old the tree was when it was cut, and what changes in climate the tree experienced throughout its life.

When done correctly, dendrochronology can be used by archaeologists to date the cutting of a tree to within a year!

The thickness of the rings changes each year based on the growing season. Dendrochronology can only be used effectively in places with distinct seasons because the change in season is what causes distinct tree rings to be produced. Trees grow less in winter due to the cold climate and grow more in summer due to the warm climate.

Dendrochronology Activity

Go to your local park or conservation area and look for trees that have been cut down. Spring is a great time to do this because conservation staff are getting parks ready for summer by removing dead or sick trees. When you find a cut tree, examine its rings and look for patterns.

Changes in the climate, illness in the tree, and major ecological events like floods or volcanic eruptions can change the pattern of the rings. For example, if there is a drought the tree might produce a very narrow ring, but if it is warm and sunny, with just enough rain, the ring might be thicker. Identify changes in climate over the tree's life by looking for thicker and thinner rings.

The size of the rings can also depend on the age of the tree, because as a tree gets older it produces narrower rings. Compare rings from the centre of the tree (the oldest rings from when the tree was young) to the rings closer to the outside of the tree (the newest rings from when the tree was older).

Trees that grow in the same environment at the same time have the same ring pattern. Find another cut tree and compare the rings to see if you can find the same pattern.

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