

*(55) 2010 Annual Meeting, Washington, DC*

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## 2010 Annual Meeting, Washington, DC Online Program

**Abstract Title:**

*Dendrochronology as a Technique in Biogeography for Reconstructing Environmental Processes*

**is part of the Paper Session:**

[Dendrochronology I: Dendroecology I](#)

scheduled on Thursday, 4/15/10 at 8:00 AM.

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**Abstract:**

Today, more and more trained dendrochronologists have established laboratories in the U.S. and Canada that can conduct tree-ring analyses. The need for such research is great as more and more land management agencies require information on past environmental processes at high temporal resolution across broader, landscape-level spatial scales. The methods used in the field to collect tree-ring samples and in the laboratory depend on the objectives of the study and the sample design(s) necessary for any one particular study. Critical among these methods is crossdating, a technique that ensures the assignment of the exact calendar year in which the tree ring was formed. The derived tree-ring data can be used in numerous types of studies, perhaps most importantly the reconstruction of forest stand history. Such studies are often conducted together with studies that evaluate disturbance history, and perhaps the most important of these disturbances is wildfire. Alteration of fire regimes by human activity has changed the structure, composition, and successional trajectories of most Southeastern forests. Additional applications include using tree-ring data to reconstruct past insect outbreaks and to evaluate air and water pollution. To truly understand the past environment, however, we must understand the effects of trends in past climate on tree growth. Dendroclimatologists analyze the climate response in trees to evaluate the one dominant climate signal (which may include broader scale oscillations, such as the Atlantic Multidecadal Oscillation) to which the trees are responding, and use this information to reconstruct climate back in time.

**Keywords:**

[Dendrochronology](#), [Tree Rings](#), [Wildfires](#), [Stand History](#)