The Midden
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Getting the Pulse of the Trees
By Dr. Franco Biondi, DendroLab, University of Nevada-Reno

When does single-leaf piñon begin growing every year? When does it stop? How is stem size changing from day to night, and in response to weather events? Although a lot of people think they know the answer to these simple questions about one of Nevada’s state trees, a quick search of the scientific literature reveals that there are in fact no direct measurements on these topics. Electronic, automated instruments called dendrometers can monitor the size of a tree stem with great accuracy, but until recently such measurements of piñon growth only existed for the southwestern kind (*Pinus edulis*), and not for the Great Basin species (*Pinus monophylla*). New, ongoing research at Great Basin National Park is filling this gap.

Students and researchers from the University of Nevada, Reno, DendroLab this summer installed automated dendrometers on 8 piñon trees within the Park. The instruments measure stem size at half-hour intervals and will provide accurate information on the length of the growing season, as well as on the relationship between radial growth and weather. This project is part of a larger study about the relationship between climate, wildfire, and species dynamics in Great Basin woodlands, which is being carried out by the DendroLab with support from the National Science Foundation.

Getting the pulse of the trees is not an easy task. The instruments, installed in May 2006, will need to continuously operate for at least a few years in order to provide reliable data on year-to-year variability. As in other monitoring efforts, a longer period of observation corresponds to better information, and to a more refined understanding of environmental change. Although designed to last in difficult outdoor conditions, automated dendrometers can be damaged by several factors, from lightning strikes to animal tampering. In September, for instance, a couple of dendrometers had to be repaired because of chewing damage to the wires. Still, other instruments kept recording, so the first year’s data were not lost.

DendroLab Website: http://woods.geography.unr.edu

Published Research about Great Basin NP since 2000


