

2006. Knight, T., M. Cipollini and C. Worrell\*. Dendrochronological investigations of longleaf pine on Lavendar Mountain. Proceedings of the 2nd Mountain Longleaf Conference, Mount Berry, GA. November 18-19, 2005. *Longleaf Alliance Report* 9:18-24.

Abstract: Dendrochronological investigations were undertaken on relict stands of longleaf pine (*Pinus palustris*) on Lavender Mountain in northwest Georgia during the summer of 2004. Core samples were taken using increment borers from 43 longleaf pines. After sample preparations, each growth ring was accurately dated and measured. The dendrochronological data were used for three analyses. (1) Ages of longleaf pines in relict stands were determined at a height of 50 cm either with actual pith dates or pith estimations, thus providing preliminary historic recruitment data. (2) Climate/growth relationships were determined using correlation analysis and multiple regression; then analyzed for changes through time and compared with similar relationships for longleaf pine at sites further south on the piedmont and coastal plain of Georgia. (3) Several techniques were used to identify the nature and frequency of significant changes in radial growth attributed to disturbance events. Disturbances caused by extreme weather events, such as wind and ice storms, are known to play a role in forest dynamics and the regeneration of relatively shade-intolerant species such as longleaf pine. Results were compared with similar analyses conducted on shortleaf pine (*Pinus echinata*) and chestnut oak (*Quercus prinus*) tree ring chronologies from the Marshall Forest located near Lavender Mountain. Of particular interest are the effects on radial growth caused by a severe ice storm occurring in NW Georgia and NE Alabama in March 1960. In contrast to shortleaf pine from the Marshall Forest, the Lavender Mountain longleaf do not show lasting suppressed growth after the 1960 storm.

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