

## Beekeepers' Gold: Reconstructing tupelo honey in Northwest Florida using *Nyssa ogeche* Tree-ring Data

This project investigates relationships between tupelo tree-ring growth and honey production in northwest Florida. Tupelo honey is a commercially produced unifloral honey harvested in the southeastern United States. Honey production has declined during the past several decades and may be associated with unfavorable climatic conditions although this relationship remains unexplored. This study will examine possible causes for honey production declines, and has four research objectives: 1) *Reconstruct honey-per-hive yields from the mid- 1800s to present using Nyssa ogeche (Ogechee tupelo) tree-ring data;* 2) *Model climatological variables and river-flow data that influence N. ogeche radial growth and honey yield-per-hive.;* 3) *Determine the cause(s) for the recent decline in both honey yield and the N. ogeche radial growth;* and 4) *Demonstrate the benefits of dendroagronomy studies whereby agricultural datasets can be expanded to examine the natural range of variability of crop yields.*



Tupelo honey has been economically and culturally important in northwest Florida for over a century, yet no studies have examined the environmental factors controlling honey production. This project will be the first to use dendrochronological techniques to examine honey production trends. Honey yield records will be extended using tree-ring data collected from *N. ogeche* to determine factors affecting honey production. Honey production yields will be placed into a historical context to compare the severity of the recent decline. Examination of tupelo tree-ring data will offer insights on the effects of drier and less-favorable growing conditions concurrent

with declines in tupelo honey production. Thus, this study will elucidate the extent to which drier conditions adversely affect honey yield.