

Challenges Associated with Establishing *Eucalyptus benthamii* Plantations in the Southeast Coastal Plain

*Doug P Aubrey, University of Georgia's Savannah River Ecology Lab¹ and Warnell School of Forestry & Natural Resources²

David R. Coyle, Warnell School of Forestry and Natural Resources²

Stephen Fraedrich, USDA Forest Service—Southern Research Station³

Several *Eucalyptus* species that have the hardiness to grow in the Southeast appear to far exceed the production potential of loblolly pine—the primary candidate for bioenergy production in the southeast and the benchmark from which to compare other potential woody crop species. We established experimental plantings of *Eucalyptus benthamii* in October 2013 at the Department of Energy's Savannah River Site near Aiken, SC. Here, we report the establishment challenges we have encountered with cold winters, fungal pathogens, and also discuss potential issues related to herbivory. Within a month after planting, nighttime low temperatures dropped to -6°C and the following winter proved to be one of the coldest in the past decade. Only a few individual trees persisted through the winter unscathed. Though a number of seedlings resprouted from root collars in the spring, many individuals were killed. During the fall following the second growing season, we observed a fungal outbreak that defoliated approximately 95% of foliage on all of the trees within one plot. The fungal outbreak coincided with an extended period of precipitation and trees began to refoliate when weather conditions improved. Also during the fall following the second growing season, we observed signs of insect herbivory and collected a number of adult eucalyptus leaf beetles (*Paropsisterna m-fuscum*). The extent of herbivory was minor and therefore not quantified; however, their rather quick arrival to these relatively small plots suggests that herbivory may increase as these stands continue to develop and perhaps allow the beetle population to increase.

Keywords: *Eucalyptus*, survival, herbivory, pathogens

¹University of Georgia's Savannah River Ecology Lab, PO Drawer E, Aiken, SC 29802

daubrey@srel.uga.edu 803.725.0135