

## **Plantation Management Research Cooperative**

Daniel B. Warnell School of Forestry and Natural Resources

The University of Georgia

Athens, Georgia 31204-2152

### **PIEDMONT AND UPPER COASTAL PLAIN INTENSIVE CULTURE/DENSITY STUDY**

A study very similar to the lower coastal plain study was established in 1997 in the piedmont of Georgia and South Carolina and the upper coastal plain of Alabama. The study does not have a slash pine component and it consists of 24 locations stratified over four different soil groups. Each of these studies takes up about 4 acres.

#### **Status**

- **The study is ongoing. Of the 24 locations, 17 made it through the first growing season with adequate survival. Seven were replanted in the 1998-99 planting season.**
- **The study was measured after the 2<sup>nd</sup>, 4<sup>th</sup>, and 6<sup>th</sup> growing seasons.**
- **Age-4 results from the oldest 17 installations were presented in PMRC Technical Report 2002-4 and age 6 results are in technical report 2004-2.**
- **Intensive management had the largest impact on the dbh of trees in the lower initial planting densities. As density increased the effect of management decreased from about 1.4 inches at 300 trees per acre to about 0.4 inches at 1800 trees per acre.**
- **Differences in average height of all trees from intensive to operational was about 4 ft after 6 growing seasons. There was a significant effect on average height from planting density with shorter trees at densities of 1200 and higher by 1 to 2 ft.**
- **The general trend of lower fusiform rust infection levels with increasing density noted on the coastal plain culture density study for both slash and loblolly is also present in these data, though the infection rates are very low. Management only makes a difference for infection level at the lowest density (300 trees per acre).**
- **Basal area per acre increases with increasing density as well as with management intensity. For densities of 1200 to 1800 trees per acre the basal area per acre on intensive management is 115 to 125 ft<sup>2</sup>/ac. Corresponding operational management values are 85 to 95 ft<sup>2</sup>/ac. For total green weight intensive values at the highest densities are at 40-43 tons at age six vs 25 to 29 tons for operational management.**