

How Do Today's Landowners Value Tree Improvement and Silvicultural Impacts on Forest Productivity in the Southern US?

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In the southern United States, tree improvement and silviculture are impacting today's loblolly pine plantations in unprecedented ways. When the best genetic material is planted and given the necessary resources to grow, mean annual increments of 10 tons a⁻¹ yr⁻¹ can be readily achieved on many sites. There are few other regions in the world where the use of integrated silvicultural systems and use of genetically improved planting stock is having as positive an impact on plantation productivity. Today's plantations are growing more than twice as fast as plantations of the previous rotation.

Forest managers have recognized that intensive plantation silviculture is like agronomy; both the plant and the soil need to be actively managed to optimize production. Genetic gains after two cycles of breeding can exceed 35 percent in volume production compared to unimproved loblolly pine. Based solely on growth gains, we have estimated that landowners can realize net present values of \$50 to more than \$300 per acre across a range of productivity and silvicultural management regimes simply by planting the best genotypes that are currently available from commercial and state forest nurseries. Landowners could pay more for the best genotypes, and the best seedlings would be well worth the additional costs.

The legacy of the large integrated forest products companies being the dominant players in southern forestry has changed dramatically over the past 5-10 years. Changes in forest ownership are impacting the way that landowner value silvicultural inputs and tree improvement. If landowners intend to establish, manage, and harvest plantations, then investment in tree improvement is a straightforward analysis. When land is *flipped* at shorter intervals, and given current appraisal methods for evaluating forest stands, the answer is much more *confused*. We will present results showing the benefits of tree improvement from various land ownership scenarios.