

US FOREST SERVICE LONGLEAF PINE PROGENY TEST REVIEW AND ANALYSIS

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Longleaf pine (*Pinus palustris* Mill.) is an ecologically and economically important pine species native to the southern US coastal plain from southeast Texas to southeast Virginia, including some higher elevation areas in north Alabama and Georgia. It is a species of concern having lost 97% of its native habitat due to a preference for loblolly pine in artificial regeneration, a reduction in fire as a management tool, and various land-use changes. Interest in restoring a substantial amount of the longleaf pine ecosystems across the region has been underway since the late 1990s. To support this restoration effort, large-scale artificial regeneration efforts were initiated over a decade ago. Access to genetically diverse, well-adapted seed sources has been a challenge in support of this effort. Very few longleaf pine seed orchards have been maintained or even preserved because resources (funding, personnel) to support longleaf pine improvement programs were severely reduced more than 20 year ago. Arguably the most extensive longleaf pine genetic improvement program was implemented by the US Forest Service's Southern Region in the 1980s. Through the years a small but persistent effort has continued within the Southern Region to maintain the existing first-generation seed orchards (now comprising 75% of all longleaf pine orchards) and preserve more than half (34 of 55) of the associated progeny tests. In an effort to enhance and extend the seed orchard capacity for longleaf pine, all viable longleaf pine progeny tests have been located, are being maintained, will be groomed for seed production areas, and have been re-measured using a sub-sampling scheme to reduce costs. Analysis of the resulting data set will be used to provide information for first-generation orchard rouging as well as to identify selections for grafting to establish a series of second-generation orchards. These data include two to eight tests on National Forests within seven states-- Texas, Louisiana, Mississippi, Alabama, Florida, South Carolina and North Carolina. We will report results obtained from our analysis and also discuss development options for both first- and second-generation orchards.

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