Performance of Nuttall Oak (*Quercus texana* Buckl.) Provenances at Age 10 in the Western Gulf Region

T. D. Byram[1], E. M. Raley[2] and D. P. Gwaze[3]

[1]Director, Western Gulf Forest Tree Improvement Program (WGFTIP), Texas Forest Service and Assistant Professor, Department of Ecosystem Science and Management, Texas A&M University, [2]Assistant WGFTIP Geneticist, Texas Forest Service, College Station, TX 77843, and [3]Resource Scientist, Missouri Department of Conservation, Columbia, MO 65201

Nuttall oak (*Quercus texana* Buckl.) is a member of the red oak family with a natural range restricted to the bottomlands of the Gulf Coastal Plain from Alabama to Texas and from Missouri to the coast. It is extremely hardy and fast growing and is therefore a highly desirable species for bottomland planting and restoration. Three series of three tests each of Nuttall oak were established by members of the Western Gulf Forest Tree Improvement Program at three locations transecting the central part of the range in a north-south direction. The three series included 28-42 different half-sib families from throughout the natural range that were arbitrarily divided into provenances based on the river basin in which the parent originated. Provenance differences originally reported at age 5 were revisited after the 10-year measurements. Family heritabilities, genotype by environment interaction, and age-age correlations were calculated. The orchard establishment strategy based on this information is discussed.