

U.S. Forest Service Region Nine Tree Improvement Program in the Central States

by

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The objective of the U. S. Forest Service Region Nine tree improvement program is to provide sufficient seed, of the best parental and geographic sources possible, to meet the needs of our reforestation program. To meet this objective our program is divided into two parts: (1) establishment and management of seed production areas, and (2) establishment and management of seed orchards. Our present program is limited to the major species which we use in reforestation of our lands. As our program expands we will incorporate tree improvement principles into our marking guides, and also include some of the minor species.

Until sufficient acreage of managed seed production areas and seed orchards have been established we are being selective in our seed collections to insure that we obtain high quality seed. In our seed production program we have set priorities for the collection of our seed. These priorities are: (1) seed orchards, (2) seed production areas, (3) approved natural stands or plantations, and (4) general collections. Each lot of seed is properly labeled and its identity as to location and type of collection is carried through to the plantation records.

The National Forests in the Central States are divided into two broad zones for the collection of seed. The western forests (the Clark and Mark Twain) form one, and the eastern forests (the Shawnee and Wayne-Hoosier) form the second zone. Some seed for use in the second zone is produced outside of the Central States area. We plan to establish sufficient seed production areas and seed orchards to meet the seed needs for the major species for the reforestation program of each zone.

Our seed production area program is well under way. At the present time we have 5 shortleaf pine (*Pinus echinata* Mill.) areas established in Missouri, 3 on the Clark and 2 on the Mark Twain National Forests. These areas cover approximately 110 acres, excluding the isolation zones, and contain about 5,000 seed trees. We plan to furnish shortleaf pine seed for our entire Central States area from these 5 areas. The white pine (*P. strobus* L.) seed we use here in our planting program comes from two seed production areas located on the Lower Michigan National Forest. To complete our seed requirements we will establish areas for loblolly pine (*P. taeda* L.) and tulip-poplar (*Liriodendron tulipifera* L.). Management of the seed production areas will be a part of our program for at least 20 to 30 years. After our seed orchards have been established and are producing sufficient seed for our needs, these areas will be put back into timber production.

We plan to establish seed orchards at two locations in the Central States. The first area will be at the Vallonia Nursery. The work plan for the establishment and

management of this area is being prepared this fall. The second site is to be in Missouri. We are presently searching for a site that will meet our specifications.

The biggest problem in any tree improvement program is the selection of superior trees. This past summer the Central States Forest Experiment Station conducted a training session at Salem, Missouri for our timber management staff men. The basic principles of tree selection and rating systems were presented to our personnel. Thus far we have had only one tree reported in the Central States. In our superior-tree reporting system we ask our field men to report any trees of commercial species that they feel are candidates for classification as superior trees. These trees are reported on a special location report and field checked by a member of the Forest Supervisor's or Regional Office staff. Final decision as to which trees will be included in our orchards will be made by the Regional Office Tree Improvement Staff man.

Concurrently with the establishment of our orchards we will begin progeny tests of each individual included in the orchards. Results from these tests will remove some individuals from the orchards. These will be replaced by other selections. We are planning to use both seedling and clonal orchards in our total program.

We have geared our program to reach our objectives in as short a time as possible. Our program is flexible enough to incorporate research findings as they become available and are deemed applicable to our work. Region Nine will be in the tree improvement business as long as we are in the business of growing timber.