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TENNESSEE FOREST ACREAGE INCREASING

Tennessee has 13,432,400 acres of commercial forest land, according to a new survey of the State's timber resources. All together, these woodlands occupy 51 percent of the total land area in Tennessee. The estimate includes all forest land that is producing or is capable of producing industrial wood and not withdrawn from timber utilization. An additional 263,500 acres of Tennessee forest land is reserved from timber cutting. Most of the reserved area is in the Great Smoky Mountains National Park.

At the time of the previous statewide inventory, completed in 1950, commercial woodlands totaled 12,353,800 acres. The 9-percent increase in area--more than one million acres--is largely due to reversion of former agricultural land to forest. Increases in forest land were quite general over the State. The smallest regional gain, 4 percent, was in the Cumberland Plateau, which is the most heavily wooded section of Tennessee; the largest gain, 14 percent, was in the counties to the east of the Plateau.

Information on commercial forest land in Tennessee counties is available in Southern Forest Survey Progress Report No. 5.--H. S. Sternitzke.

PRUNING COTTONWOOD AND WILLOW OAK

A study in the Mississippi Delta indicates that cottonwood branches up to 3 inches in diameter may be pruned without serious danger that rot or insects will enter through the wounds, or that epicormic branching will be stimulated. Pruning of willow oak may not be profitable until ways are found to identify individual trees that are prone to epicormic branching.

Thirteen cottonwoods averaging 9 inches d.b.h. and 20 willow oaks averaging 8 inches were hand-pruned to a height of 17.4 feet in the spring of 1956. The cottonwoods were in a 14-year-old plantation; the willow oaks were part of a dense second-growth stand 25 to 30 years of age. About 100 branches, some living and some dead, were removed in each stand. Diameters of pruned limbs, measured 2 inches from the main bole, ranged from $\frac{1}{4}$ to 3 inches on cottonwood and $\frac{1}{4}$ to 2 inches on the oaks.

Forty-three percent of the cottonwood wounds were healed by the first year, 89 percent after the second, and 98 percent after the third. Wounds from live and dead limbs healed at equal rates.

In willow oak healing was slower, and cuts from live branches closed more rapidly than those from dead ones. No cuts closed the first year. After the second year, 79 percent of the live-branch wounds and 31 percent of the dead-branch wounds had healed. By the end of the third year the proportions were 92 and 69; after the fourth, 96 and 98.

Rot or insect infestations occurred on 9 percent of the cottonwood wounds, 2 percent of the live-branch cuts on willow oak, and 19 percent of the dead-branch wounds in willow oak. Dissection of some trees indicated that most rot was confined to the cores of the knots.

During pruning 457 epicormic branches (all less than $\frac{1}{4}$ -inch in diameter) were removed from the willow oaks and 4 from the cottonwoods. In the next year, only 2 new ones grew on the cottonwoods, but the willow oaks developed 105. After 5 years none of the remaining cottonwoods had more than 2 epicormic branches, and several had none. Of the undissected willow oaks, eight had fewer than 5 branches per tree; six, however, had more than 20 each--more than enough, generally, to disqualify the butt log for high-grade lumber.--R.L. Johnson.

SECTOR FORK VERSUS CALIPERS OR TAPE

The Bitterlich sector fork may be used for tree diameter measurements if accuracy of ± 0.7 inch is acceptable. If accuracy greater than ± 0.5 inch is desired, calipers or diameter tape should be chosen.

These are indications from a limited test in south Alabama, where one man measured the d.b.h. of 100 longleaf pines ranging from 4.7 to 17.0 inches. A single measurement was made on each tree with each instrument, care being taken to avoid sloughing bark. Measurements with the tape and calipers were made directly to the nearest tenth of an inch. With the sector fork, which is graduated in one-inch intervals, the nearest tenth was estimated.

D.b.h. was generally overestimated by the sector fork, and the error tended to increase with tree size. Average d.b.h. measured with each instrument was: sector fork 8.72 inches; tape 8.50 inches; calipers 8.45 inches. When accuracy of ± 0.5 inch was specified, chi-square tests (adjusted for increase of bias with diameter) revealed differences at the 1-percent level between (1) sector fork and caliper and (2) sector fork and tape. Caliper and tape measurements were not different at the 1-percent level.--*Robert M. Farrar.*

FIRST YEAR CRITICAL FOR LOBLOLLY ON ERODED LANDS

Planting studies on a wide range of eroded sites in north Mississippi indicate that loblolly pine seedling losses after the first growing season are minor.

The studies included 25,000 seedlings in 47 installations on barren and compact sandy-clay Coastal Plain parent materials, on abandoned fields with a cover primarily of broomsedge, and under deadened hardwoods. Plantings were made in the period 1949-1958, which included both wet and drought years.

First-year mortality for the 47 installations averaged 19 percent. The relatively low losses were in part due to careful, closely supervised planting. Second- and third-year losses combined averaged 6 percent and ranged from 2 percent on gullies to 10 percent under hardwoods.

Drought was the leading cause of first-year mortality on all sites. Thus site improvement, where necessary, should be aimed at increasing soil moisture during the first growing season.--*S.J. Ursic.*

TREATED SHORTLEAF PINE SEED CAN BE STORED

Shortleaf pine seed that has been stratified and coated with repellents for direct seeding may be cold-stored for several months, according to a test in northern Arkansas. Though immediate sowing is recommended, weather or other conditions sometimes necessitate delays.

Seed that had been held for 4 years at 0° F. and 9 percent moisture was stratified for 30 days and treated with 15 percent Arasan and 2 percent endrin bonded with latex. It was then refrigerated at 38° F. for a maximum of 17 weeks.

Germination was not reduced by storage. In fact, seed kept for 13 weeks and longer germinated somewhat better than that stored for 1-3 weeks or not stored at all. Germination for all lots averaged 86 percent of sound seed.

This seed lot was small. If large amounts are to be stored, precautions should be taken to prevent heating and molding. The effect of storage on the efficiency of the repellents was not evaluated.--William R. Maple.

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*Copies are available at the Southern Station.