

1957
(July 1, 1956—June 30, 1957)
REPORT OF
FOREST AND WINDBARRIER PLANTING
UNDERTAKEN
IN THE UNITED STATES



Compiled from information furnished by the State Foresters and other appropriate public officials of each state and federal agency concerned.

U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
WASHINGTON 25, D. C.

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Acres planted--fiscal 1957 and before

Tree planting during the fiscal year 1957 (July 1, 1956 to June 30, 1957) as reported by various public agencies, principally the State Foresters, was as follows:

	<u>Acres</u>
Forest plantings	1,139,431
Windbarrier plantings	<u>31,559</u>
Total	1,170,990

This is a new record--higher by nearly 256,000 acres than the previous record set in 1956.

Comparable figures for several of the past years are as follows:

<u>Year</u>	<u>Acres</u>
1957	1,170,990
1956	915,428
1955	812,588
1954	811,066
1953	715,548
1952	522,935
1951	456,368
1950	497,507
1940	519,051
1930	138,970

Because of the increased supply of planting stock available, it is forecast that at least 1 1/2 million acres will be planted in 1958,

The total amount of planting in each State is shown, by class of owners and purpose, in Table 5 of this report. The ten States in which more than 50,000 acres were planted in 1957 are =

Florida	218,860
Georgia	91,648
Mississippi	78,729
Louisiana	76,091
Alabama	73,106
South Carolina	65,812
North Carolina	58,779
Oregon	58,202
Michigan	56,262
Pennsylvania	50,706

An analysis of the year's data reveals increases and decreases of planting efforts by the three broad ownership classes as follows:

The Federal government planted 106,467 acres of forest and 1,985 acres of windbarriers in 1957 on lands administered by its various agencies, a total of 108,452 acres. This is approximately 22,500 acres or 26 percent more than in 1956.

The States and other non-Federal public agencies planted 64,449 acres of forest and 195 acres of windbarriers, a total of 64,644 acres. This is approximately 2,000 acres or 3 percent more than in 1956.

Private landowners planted 968,515 acres of forest and 29,379 acres of windbarriers, a total of 997,894 acres. This is about 231,000 acres or 30 percent more than in 1956, but all States did not report increases, as shown below.

In 29 States, plus Hawaii and Puerto Rico, private planting increased by 279,000 acres over 1956. Some of these increases were of extraordinary size, for example:

	<u>Acres increase in 1957 over 1956</u>
Florida	131,800
North Carolina	25,100
South Carolina	22,900
Alabama	22,400
Louisiana	15,800
Virginia	11,800
Wisconsin	10,900

In 10 States , private planting did not change 10 percent from what it was in 1956.

In 9 States private planting decreased by 50,000 acres. Most of this decrease occurred in two States as a result of unusual nursery production problems. A great upsurge of planting is expected for them next year.

Eighty percent of all the forest planting is being done on privately owned lands. States in which private owners planted more than 20,000 acres in 1957 are:

Acres of privately owned forest planting

Florida	209,737
Georgia	85,170
Louisiana	73,995
Mississippi.....	72,145
Alabama	71,910
North Carolina.....	55,885
South Carolina	53,507
Pennsylvania	50,318
Michigan	39,090
Tennessee	36,926
Wisconsin	32,081
Virginia	31,435
New York	27,600
Texas	23,107
Arkansas	20,350

More than a third of this private land forest planting is being done by industrial organizations on their own lands. In 1957 forest industries planted 310,636 acres, 53,698 acres more than in 1956; and other industries planted 71,957 acres, 25,818 more than in 1956. States in which industries were especially active in reforesting their lands during 1957 are:

Acres reforested by Industry

Florida	94,295
Louisiana	38,740
Georgia	38,121
North Carolina.....	28,451
Alabama	24,510
Pennsylvania	23,894
South Carolina	22,497
Virginia	15,878
Tennessee.....	15,136
Oregon	14,726
Mississippi.....	11,691
Arkansas	11,211

In many States the planting of industry-owned land would increase greatly if planting stock were more abundant, The number of forest-industry-owned nurseries has increased each year. There are now 22 such nurseries in operation, an increase of 4 over 1956, and ten more will make their first shipments in 1958.

Windbarrier planting was reported from 32 States and amounted to 31,559 acres, classed as follows:

	<u>Acres</u>
Federal land	1,985
Other public land	195
Private land	<u>29,379</u>
 Total	 31,559

This is about 3,800 acres more than was reported in 1956.

The need for windbarriers exists mostly on private lands and as the above figures show, most of this type of planting is done there. The States in which the farmers and ranchers are most active in this form of tree planting are:

	<u>Acres</u>
North Dakota	9,615
South Dakota	8,002
Nebraska	4,365
Kansas	1,558
Colorado	1,066
Washington	928

Total	25,534 acres (81%)
All other windbarrier planting	6,025 acres (19%)

Availability of planting stock

All public and private nurseries together produced 1.1 billion trees in 1957 - a quantity 24 percent greater than any previous year. But this record output was not enough. It is estimated that landowners would have planted between 1 1/2 and 1 3/4 billion trees had they been available. Very few States reported that they were able to fill all orders. Some States, especially in the South had shortages of 50 million or more.

Forest tree nursery activities for 1957 are summarized as follows:

	<u>Active nurseries</u>	<u>Output of trees</u>	
Federal:			
Forest Service	12	106,134,000	
Tennessee Valley Authority....	<u>1</u>	<u>20,970,000</u>	
	13		<u>127,104,000</u>
State:			
State foresters or equivalent ..	<u>92</u>	<u>786,288,000</u>	
	92		<u>786,288,000</u>
Other public:			
Soil Conservation Districts ...	6	8,869,000	
County and municipal.....	<u>4</u>	<u>407,000</u>	
	10		<u>9,276,000</u>
Industry:			
Paper companies	16	83,349,000	
Lumber and land companies ..	<u>6</u>	<u>17,364,000</u>	
	22		<u>100,713,000</u>
Commercial:			
Private companies	<u>53</u>	<u>78,090,000</u>	
	53		<u>78,090,000</u>
Total.....	190		1,101,471,000
(Total 1956)	187		885,968,000

For additional details, see Table 6 of this report and also "Forest Tree Nurseries in the United States--1957," published by the Forest Service, United States Department of Agriculture.

The Federal nurseries that operated in 1957 were the 12 of the Forest Service and one of the Tennessee Valley Authority. Together they produced 127,104,000 trees, in comparison with 141,850,000 in 1956. Most of the Forest Service nursery trees were planted in national forests, but some were planted on lands of the Atomic Energy Commission and flood-control projects, and in a few States on private lands through the cooperative tree distribution programs (C-M4). Nursery stock from the TVA went to private lands through the established programs of that Agency. A TVA nursery in Alabama which closed in 1955 is being reactivated to produce trees for the Soil Bank Conservation Reserve planting program.

The 1957 production of State nurseries was 786,288,000 plants, in contrast to the 1956 production of 580,884,000. The principal producers among the States were:

	<u>Number of trees</u>
Florida	155,272,000
Georgia	78,952,000
Alabama	61,478,000
North Carolina.....	57,471,000
South Carolina	55,384,000
Louisiana	42,867,000
Virginia	30,887,000
New York	30,776,000
Mississippi.....	29,517,000
Wisconsin.....	28,851,000
Tennessee	28,628,000
Michigan	<u>26,028,000</u>
 Total for 12 States	 626,111,000 (80%)
 Total for 30 States and Hawaii and Puerto Rico	 160,177,000 (20%)

Six States do not operate State nurseries. They purchase their planting stock,

New State nurseries in Colorado, Florida, and Washington shipped trees for the first time in 1957, while a small one of the Kansas Fish and Game Department reported no tree shipments in 1957. Not shown in the above tabulation, because they shipped no trees in 1957, are 1 nursery on a standby basis, 4 producing only wildlife cover stock, and 17 under construction in 15 states. Utah is closing one nursery and opening a new one. Thus the number of State nurseries shipping trees increased from 90 in 1956 to 92 in 1957.

Most of the stock from the State nurseries was produced under the Federal-State cooperative tree distribution program (C-M4). Some of it was planted on State or other non-Federal public lands, but most of it was used on privately owned land, frequently with the help of the Agricultural Conservation Program or the Conservation Reserve portion of the Soil Bank Program.

The demand for additional planting stock created by the Soil Bank's Conservation Reserve program is being met in part by commercial nurseries but largely by increasing the capacities of State nurseries. Twenty-nine State nurseries are being enlarged and 16 additional ones are being built with the help of Soil Bank funds. It is estimated that this additional capacity will supply nearly 400 million additional trees for the 1958 planting year, and 500 million for 1959.

Most of the production from forest industry nurseries goes to company lands, although some is distributed through a variety of company programs to private landowners, often free or nearly free, for planting on their own lands. Four new forest industry nurseries began producing trees in 1957. Two very small ones in Washington did not report. Thus the number now stands at 22. Ten additional industry nurseries that will make their first shipments in 1958 are not included in this tabulation. The production of the 22 forest industry nurseries was 100,713,000 trees in 1957 in contrast to 20 that produced 77,307,000 in 1956 and 15 that produced 46,516,000 in 1955. The expected 32 nurseries might produce 150 or 160 million trees in 1958.

The stock from the Soil Conservation District nurseries all goes to District cooperators. The six previously reported nurseries all continued in operation and produced 6 percent more than they did in 1956.

The commercial nurseries reported a production of 78,090,000 plants for forest and windbarrier planting. They also estimated an additional production of 17 million plants that went into landscape uses, making a total of 95 million plants for this class of nursery. New commercial nurseries have been built in the last few years in Texas, Michigan, Pennsylvania, California, and Oregon. New ones in Montana and Georgia are expected to make their first shipments in 1958.

Direct seeding

Reforestation land by sowing seed directly upon the site, rather than by planting nursery stock, is increasing. The amount of such work is detailed in footnotes to Tables 1, 2 and 3 of this report, and is summarized below:

	<u>Acres</u>
Federal lands	6,450 (in 13 States)
State Forests	8,654 (Washington, Oregon)
Other Public lands	1,323 (Oregon)
Persons' lands.....	20 (Oregon)
Forest Industry lands.....	<u>16,246 (Oregon and Louisiana)</u>
 Total	 32,693
 Total for 1956	 11,143
 Total for 1955	 4,679

This increase in area reforested by direct seeding was made possible as a result of the discovery of various chemical compounds which, applied as a coating to the seed prior to sowing, repel the rodents or birds that would otherwise eat it. Actually the idea of direct seeding and of using a repellent to protect the seed from predation is not new, and the search for practical techniques with or without repellents has been carried on for years by various forest experiment stations, State forestry departments, colleges, and private landowners. Until recently, however, the chemicals available have not been consistently satisfactory enough to encourage much of this kind of work.

The protection of newly sown seed from rodents required total elimination of the rodents from the area by baiting. Since repopulation by reinvasion and reproduction occurred rapidly, it was also necessary to treat a buffer strip about 1/4 mile wide around the seeded area, and sometimes also apply a second overall treatment. This technique, although still used satisfactorily in certain situations, is costly, not adapted to small areas, and sometimes fails. Now an endrin-arasan formulation which repels the rodents and thus protects the seed until it germinates, is coming into use.

The protection of seed from birds, often migratory birds that were replaced each day by a new transient flock, has been almost impossible despite various measures to frighten the birds through the use of "shiners," noise makers, dyed seed, and "shot-gun" patrols. Now a new technique, using anthraquinone applied to the seed in an asphalt coating is proving effective with some kinds of seed in some localities.

The discovery of these chemicals and the development of the techniques for their use are the result of research being done by the United States Bureau of Sports Fisheries and Wildlife at its Denver Wildlife Research Laboratory in cooperation with the United States Forest Service and several private persons and corporations.

The use of chemical coatings, however, is not enough, for merely protecting the seed until it germinates does not insure its growth thereafter. To illustrate, the direct seeding of longleaf pine in Louisiana has been quite encouraging since the discovery of anthraquinone, but the results in other states, and with other species of southern pine, have not been entirely satisfactory. Frost, drought, and insects, all kill subsequent seedlings even though the mice or birds originally spared the seed, The development of suitable techniques of site preparation, sowing methods, covering with soil, and the like, must therefore accompany the development of repellents, and research and field trials to test new chemicals and develop improved techniques are under way in various parts of the country, As new chemicals are found and improved techniques develop, the amount of direct seeding is expected to increase.

The development of the bird repellents is also important in nursery work. Some nurseries use elaborate portable screens to protect seedbeds from bird depredations. Such screens are costly to guild, maintain, place, and remove, and are a major impediment to weeding and spraying. The chemical repellents have eliminated the screens entirely at a number of nurseries. To illustrate, a nursery in New England applied \$100 worth of anthraquinone with such success that plans for building \$10,000 worth of screens were cancelled.

The job done and to be done

The size of the job to be done, and our rate of progress towards restoring the final ultimate acre cannot be measured definitely. Not all of the acres planted develop into satisfactory stands. Neither does the area in need of planting remain constant, because logging, fire, epidemics, natural seeding, and changing land values all add to or subtract from the plantable areas. Thus, a year-to-year balance with debits, credits, and amounts forwarded, is not possible with planting statistics. The best that can be done is to periodically appraise the situation. An appraisal made in 1953 as a part of the study of the nation's timber resource shows the tree planting job to be done in continental United States at the beginning of fiscal year 1953. This is shown in the following tabulation: