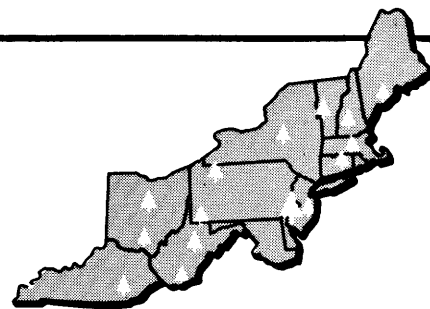


1973

Northeastern Forest Experiment Station



FOREST SERVICE, U.S. DEPT. OF AGRICULTURE, 6816 MARKET STREET, UPPER DARBY, PA. 19082

A PREVIEW OF NEW JERSEY'S FOREST RESOURCE

Abstract. — The recently completed forest survey of New Jersey indicates that 54 percent of the land area has tree cover on it. Thirty-eight percent of the state is classified as commercial forest land. Total growing-stock volume has increased, although the softwood component of the resource has decreased in both cubic-foot volume and area occupied by the softwood types. Average annual growth for all species combined exceeded timber removals; however, softwood removals exceeded growth by 22 percent.

New Jersey, the Nation's most densely populated state, also possesses considerable forest cover. The recently completed resurvey of the State's timber resources¹ reveals that 54 percent of the land area — 2,613,400 acres — has tree cover on it. The area of commercial forest land is 1,856,800 acres. Productive-reserved (state parks) and upproductive forest land comprise 71,600 acres. The remaining 685,000 acres consist primarily of urban and suburban areas on which tree cover enhances the primary land use.

Some 40 percent of the commercial forest land is in the oak-hickory forest type. The next most prevalent forest type, pitch and shortleaf pine, accounts for 26 percent of the forest area. Several other types account for the remaining 34 percent. These include the white pine-hemlock, Atlantic white-cedar, oak-pine, ash-elm-red maple, and maple-beech-birch types.

¹A resurvey of the timber resources of New Jersey was completed in 1972. A statistical-analytical report containing data gathered on the inventory and an analysis of the trends and current situation is being prepared for publication.

When the first Forest Survey of the state's timber resources was made in 1955, Hudson County was classified as an urban county. Since then the trend toward urbanization in northern New Jersey has continued. In the 1972 inventory, Bergen, Essex, Union, and eastern Passaic counties were included with Hudson in the urban category. The reclassification of forest land from these counties accounted for one-quarter of the total decrease of 263 thousand acres of forest land. Even outside these counties, urbanization such as new road construction, land clearing for housing, etc., was the major cause of forest land area change.

Timber volume increased during the 16-year period between surveys. The cubic-foot volume of growing stock increased 11 percent and the sawtimber portion of growing stock had a 6 percent increase in board-foot volume. The current totals of 1,470 million cubic feet and 3,070 million board feet represent an average of 792 cubic feet and 1,653 board feet per acre of forest land.

Land clearing, timber harvest, and species succession over the past 16 years have re-

sulted in a change in the species composition of the forest. Softwoods declined from 21 percent of the growing-stock volume in 1956 to 18 percent of the 1972 volume. Among the hardwoods the oaks maintained approximately the same proportion as in 1956 — about 49 percent of total growing-stock volume. The other hardwood species increased from 30 percent of the 1956 total to 33 percent of the 1972 total volume. Soft maples and yellow-poplar were the species that made significant gains in cubic-foot volume.

Data from permanent sample plots remeasured in 1972 indicate that the ratio between average annual net growth and average annual removals during the 16-year period is 3 to 2 — 23.2 million cubic feet of growth to 14.4 million cubic feet of removals. However, these averages do not tell the full story. Softwood average annual removals, 6.6 million cubic feet, are 22 percent more than the average growth of 5.4 million cubic feet. Hardwoods, on the other hand, are growing at twice the rate of removals — 17.8 million cubic feet of growth to 7.8 million cubic feet of removals.

Table 1.—Area by land classes, New Jersey, 1972

Land class	Area	
	Thousand acres	Percent
Forest land:		
Commercial	1,856.8	38
Productive-reserved	34.0	1
Unproductive	37.6	1
Total forest land	1,928.4	40
Urban and other:		
Land with tree cover ^a	685.0	14
Land without tree cover ^b	1,556.6	32
Cropland ^c	573.0	12
Pasture	77.5	2
Total area ^d	4,820.5	100

^aThese are lands where the principal use for the immediate future precludes planning or management for future timber production but which are partially in tree cover. In New Jersey 75 percent of the land in this category is devoted to urban and suburban uses.

^bIncludes swampland, industrial and urban areas, other nonforest land, and 48,600 acres, classed as water by Forest Survey standards, but defined by the Bureau of the Census as land.

^cSource: 1969 Census of Agriculture. Data extrapolated to 1972.

^dSource: United States Bureau of the Census, Areas of New Jersey: 1960 (Jan. 1967).

Table 2.—Area of commercial forest land, by forest types, New Jersey, 1972

Forest type	Thousand acres	Percent
White pine-hemlock	20.2	1.1
Pitch-shortleaf pine	478.4	25.8
Oak-pine	172.1	9.3
Oak-hickory	754.0	40.6
Oak-gum ^a	60.3	3.2
Ash-elm-red maple	267.6	14.4
Maple-beech-birch	104.2	5.6
All types	1,856.8	100.0

^aIncludes 50,000 acres of Atlantic white-cedar.

Table 3.—Net volume of growing stock and sawtimber on commercial forest land, by species, New Jersey, 1972

Species	Growing-stock volume		Sawtimber volume	
	<i>Million cubic feet</i>	<i>Percent</i>	<i>Million board feet</i>	<i>Percent</i>
Pitch pine	167.4	11.4	332.6	10.8
Shortleaf pine	22.8	1.6	65.4	2.1
Virginia pine	10.6	.7	25.1	.8
Other pines	7.9	.5	24.2	.8
Atlantic white-cedar	26.1	1.8	53.7	1.8
Other softwoods	23.2	1.6	71.0	2.3
Total softwoods	258.0	17.6	572.0	18.6
White oaks	317.9	21.6	686.6	22.4
Red oaks	402.7	27.4	998.3	32.5
Hickories	63.8	4.3	104.6	3.4
Sugar maple	22.3	1.5	53.7	1.7
Soft maples	106.8	7.3	124.7	4.1
Beech	15.1	1.0	33.6	1.1
Blackgum	38.5	2.6	48.9	1.6
Sweetgum	75.2	5.1	153.0	5.0
Yellow-poplar	29.3	2.0	101.7	3.3
Other hardwoods	140.7	9.6	193.1	6.3
Total hardwoods	1,212.3	82.4	2,498.2	81.4
Total, all species	1,470.3	100.0	3,070.2	100.0

Table 4.—Average annual net growth and removals of growing stock, by species, New Jersey, 1951-71

(In thousands of cubic feet)

Species	Average annual	
	Net growth	Removals
Pitch pine	4,196	3,051
Other softwoods	1,204	3,549
Total softwoods	5,400	6,600
White oaks	3,017	1,333
Red oaks	7,984	4,393
Hickories	487	12
Soft maples	2,404	281
Blackgum	446	35
Sweetgum	613	1,001
Yellow-poplar	1,038	332
Other hardwoods	1,811	413
Total hardwoods	17,800	7,800
All species	23,200	14,400

—JOSEPH E. BARNARD and TERESA M. BOWERS

Research Forester and Statistical Assistant
Northeastern Forest Experiment Station
Forest Service, U.S. Dep. of Agriculture
Upper Darby, Pa.