

 United States
Department of Agriculture

Forest Service

**Northeastern
Research Station**

NE-INF-126-95



The Empire State's Forests-- Trends in a Robust Resource



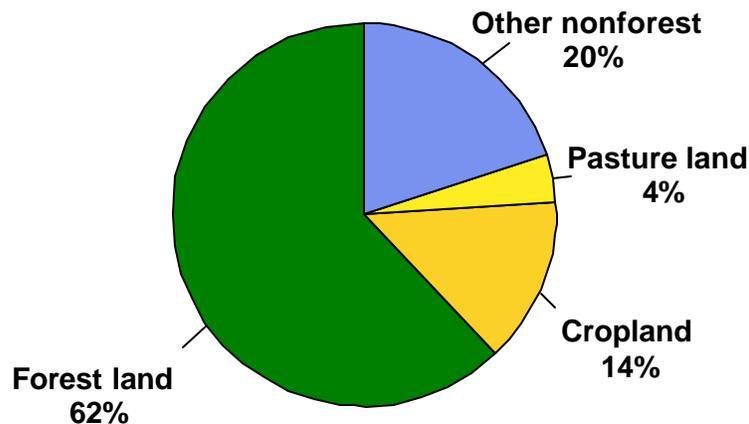
New York's Forests

The Forest Service, under the authority of the McSweeney-McNary Research Act of 1928, conducts continuing forest inventories of all states to obtain up-to-date information about the Nation's forest resources. In 1993, the USDA Forest Service completed a new inventory of the timber resource of New York. This is the fourth statewide inventory done in New York. Previous inventories were conducted in 1953, 1968, and 1980. Many significant changes have occurred in New York's forest during this time and are highlighted here.

FOREST LAND DOMINATES THE LANDSCAPE

Forest cover is the predominant type of natural vegetation in New York. The original forests in New York covered nearly the entire land area. By 1880, most of the forest land was cleared for agriculture, leaving only about 25 percent of the land in forest. The 1993 inventory shows 62 percent of the land in forest. In view of the population growth and development that has taken place since colonial settlement began around 1625, the present level of forest cover is remarkable. Reasons for this are threefold. First, growth has been concentrated in areas adjacent to New York City and several other large cities. Second, there has been a sizable decrease in the amount of land used for farming. The land used for cropland and pasture covers 18 percent of the State today, a substantial decline from the 28 percent farmed in 1968. Although some of the lost farmland has been developed, most of it was left abandoned and has reverted to forest land through natural regeneration. This process has helped offset the loss of other forest land for development. Third, forest land conserved as part of state-owned parks, state forests, and recreation areas has increased.

LAND AREA BY LAND USE, 1993



THE EXTENT OF NEW YORK'S REGROWN FOREST

The New York forest is a regrown resource. In fact, the New York forest today is 23 percent greater in area than it was in 1953! Today, after decades of large increases, there are more acres in forest than at any time in this century. But, in recent years the amount of the New York forest has been fairly stable. In 1993, the total forest land acreage was 18.6 million acres, only slightly more than that reported in 1980. The New York forest is a working resource benefiting each and every resident. It provides wood fiber, watershed protection, conservation of wildlife habitat and biodiversity, recreation, and much, much more. Stewardship of forest resources will ensure these benefits now and in the future.

The modern practice of stewardship embraces lands traditionally considered commercial forests, or timberland and noncommercial forests, that in the past were considered completely unproductive. Today, even though we know all forests produce important benefits, these categories still help to organize forest management. Timberland, or land that is physically capable of growing timber crops and is not reserved from cutting (such as, state-owned preserve land within the Adirondack and Catskill Parks), makes up most of the New York forest—about 15.4 million acres. But timber production is not the primary objective of all timberland owners. On noncommercial forest land, management for timber is often economically impractical, or administratively restricted. The area of noncommercial forest land has been slowly increasing and now totals 3.2 million acres.

FOREST LAND AREA TRENDS

(Millions of acres at each inventory))

	1953	1968	1980	1993
Noncommercial forest land	2.5	2.9	3.1	3.2
Timberland	12.6	14.4	15.4	15.4
Total forest land	15.1	17.3	18.5	18.6

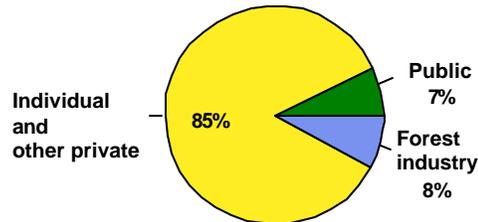
WHO OWNS NEW YORK'S TIMBERLAND?

A diverse group of about half a million private landowners owns 14.4 million acres of New York's timberland. These lands are held for a variety of reasons ranging from purely economic to aesthetic. The total timberland owned by individuals, forest industry, and other private landowners is 93 percent. The remaining 7 percent is in public ownership—either by federal, state, and county governments or by local municipalities. Half of the owners of the New York forest have fewer than 10 acres, and represent only about 6 percent of all the timberland in private hands. Larger landownerships, though comparatively fewer in number, represent a larger share of the acreage.

**PRIVATE FOREST LANDOWNERS,
NUMBERS AND ACRES, BY SIZE-CLASS, 1993**

Acres Owned	Number of Owners	Total Acres
1-9	247,000	843,000
10-49	158,800	3,596,000
50-99	37,200	2,562,000
100-499	30,800	4,840,000
500-999	1,200	642,000
1,000+	500	1,884,000
All size classes	475,400	14,367,000

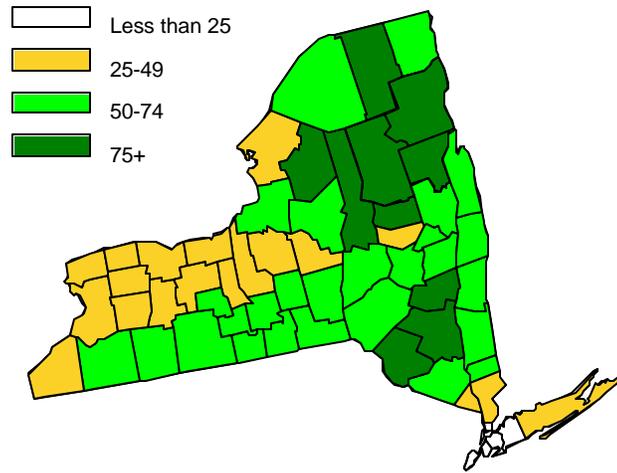
OWNERSHIP OF NEW YORK'S TIMBERLAND, 1993



FOREST LAND IS NOT EVENLY DISTRIBUTED ACROSS THE STATE

The mountainous area of the Adirondacks and Catskills are the most heavily forested regions. Hamilton and Warren Counties in the Adirondacks are the most densely forested counties, with 98 and 96 percent of their area in forest, respectively. At the other extreme are the lightly forested counties along the Lake Plain where agriculture is the primary land use, and the counties adjacent to New York City where urban land uses dominate the landscape.

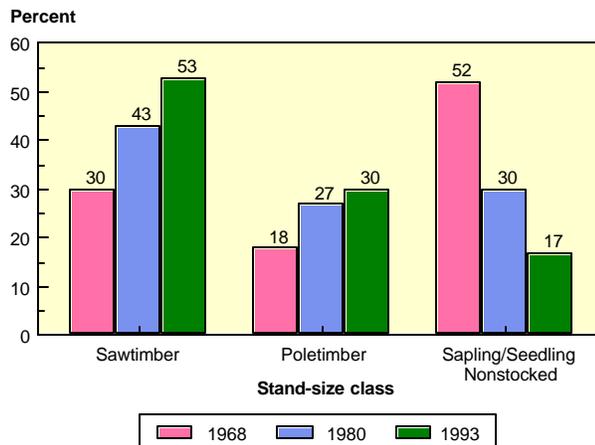
PERCENTAGE OF LAND IN FOREST BY COUNTY, 1993
 (State average = 62 percent)



MORE SAWTIMBER-SIZE STANDS INDICATE A MATURING FOREST

Timberland is classified by the size of trees growing on it. Sawtimber stands, which have the majority of their stocking in large trees suitable for sawlogs, have continued to increase and now account for more than half of the timberland. This is good news for the lumber industry. But wildlife species depend on all stages of stand development, and wildlife managers would prefer a more balanced distribution of size classes. Of concern is the loss of early successional stands indicated by the decline in the area of the sapling/seedling and nonstocked stands. The commonly used practice of unevenage management, where relatively few trees are harvested in a stand, maintains continuous forest cover and does not reduce stands down to the sapling/seedling and nonstocked levels.

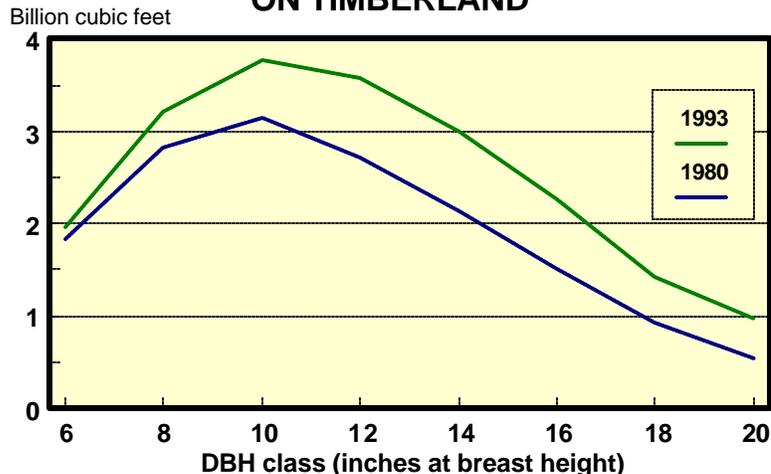
TIMBERLAND BY STAND-SIZE CLASS



LARGE VOLUME INCREASE IN LARGER DIAMETER TREES

Since the first inventory of New York, the volume of timber has been increasing. Our fundamental measure of timber volume is growing-stock volume. It is the net cubic-foot volume in the main stem of well-formed sound trees at least 5 inches in diameter. Between 1980 and 1993, the total growing-stock volume rose by 32 percent. The increase in volume was not evenly distributed across diameter classes. Volume increases were concentrated on the larger trees. The volume of trees in the 6-inch class increased by 8 percent, whereas the volume in the 18-inch class increased by 51 percent—another indication of a maturing forest. This also resulted in a large increase in that portion of volume that is in trees large enough to be sawn into lumber. Expressed in board feet, total volume increased by 46 percent and now totals 61.7 billion board feet

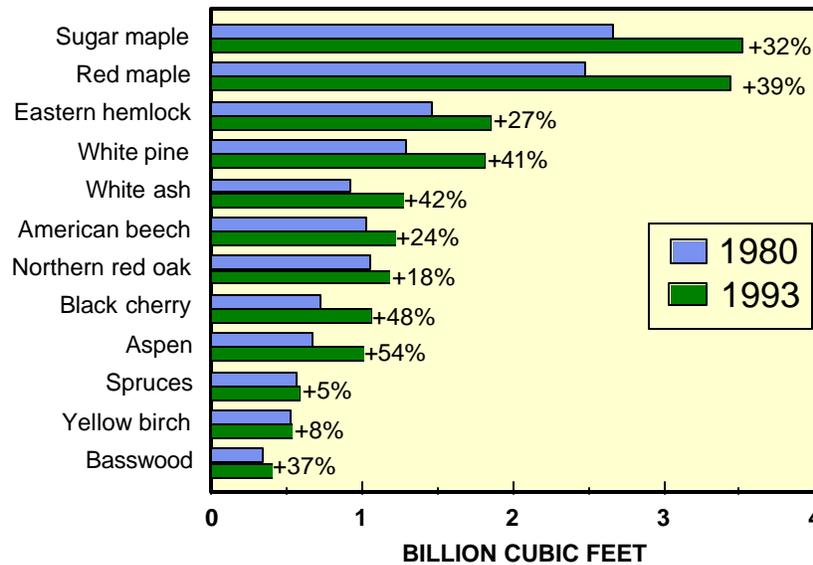
VOLUME OF GROWING-STOCK TREES ON TIMBERLAND



MAPLES MAKE LARGE GAINS

New York's forests contain a rich mix of species. The 1993 inventory identified nearly 90 different tree species; however, many of these are not very common. The 12 most common species account for four-fifths of the growing-stock volume. Sugar maple retained its position as the leading species in volume, a position it has held during the last four inventories. But red maple—which is widely distributed, an aggressive competitor, and not as heavily cut—will likely overtake sugar maple as the leading species in the near future. Together, sugar maple and red maple represent nearly one-third of the total volume.

CHANGE IN VOLUME OF TOP 12 SPECIES



GROWTH OUTPACES CUTTING BY THREE TO ONE

Gross growth on timberland includes both the increase in volume of established trees and the volume of new trees that have become established since the previous inventory. Gross growth minus losses due to tree death or cull is termed net growth. In New York, the ratio of net growth to removals (cutting) has averaged about 3:1 over the past decade. That is, about 3 times as much wood was grown as was cut. On an annual basis New York's timberland grows 586 million cubic feet of wood and sustains an average annual harvest of 195 million cubic feet. This surplus of growth over cut yields and annual increase of 392 million cubic feet and represents an opportunity to expand the harvest in the future on a sustainable basis.

Growth-to-removals ratios vary between species. Comparing individual species to the all-species average indicates relative changes for each species. The fast growth and relatively low removal rate of red maple give it a growth-to-removal rate of more than 4:1, well above the state average for all species.

AVERAGE ANNUAL NET GROWTH AND REMOVALS, 1980-1993

Top 12 species	Net growth (Million cubic feet)	Removals (Million cubic feet)	Growth To Removals Ratio
Sugar maple	88.5	(30.7)	2.9 : 1
Red maple	103.1	(24.6)	4.2 : 1
Eastern hemlock	47.0	(12.8)	3.7 : 1
White pine	53.2	(13.4)	4.0 : 1
White ash	44.8	(11.9)	3.8 : 1
American beech	35.6	(15.6)	2.3 : 1
Northern red oak	28.8	(17.6)	1.6 : 1
Black cherry	36.0	(11.8)	3.0 : 1
Aspen	29.4	(7.0)	4.2 : 1
Spruces	17.4	(8.6)	2.0 : 1
Yellow birch	13.1	(6.4)	2.0 : 1
Basswood	7.4	(2.5)	3.0 : 1
All species	585.9	(194.7)	3.0 : 1

VOLUME CHANGES ON TYPICAL ACRE OF TIMBERLAND

Looking at what is happening on the average acre of timberland shows that the average acre has 1,413 cubic feet of volume. The amount contained in the sawlog portion of trees is equivalent to 4,008 board feet. Each year, growth averages 38.0 cubic feet and harvesting averages 12.6 cubic feet. This yields a positive net change of 25.4 cubic feet per year—an increase of 1.8 percent per year.

AVERAGE ACRE OF TIMBERLAND

	CUBIC FEET	BOARD FEET
GROWING-STOCK VOLUME	1413	4008
ANNUAL NET GROWTH	+38.0	+136
ANNUAL REMOVALS	-12.6	-44
ANNUAL NET CHANGE	+25.4	+92
PERCENT CHANGE PER YEAR	+1.8%	+2.3%

For more information call: Forest Inventory & Analysis (610) 557-4051 or write: USDA Forest Service, FIA Unit, 11 Campus Boulevard, Suite 200, Newtown Square, PA 19073-3294, or see our web page at www.fs.fed.us/ne/fia.

Or call: New York State, Department of Environmental Conservation, Bureau of Forest Resources Management, 50 Wolf Road, Albany, New York 12233-4253, (518) 457-7431.

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