

New York's Forest Resources, 2012

Research Note NRS-181

This publication provides an overview of forest resource attributes for New York based on an annual inventory conducted by the Forest Inventory and Analysis (FIA) program at the Northern Research Station of the U.S. Forest Service. These estimates, along with web-posted core tables, will be updated annually. For more information, please refer to page 4 of this report.

Table 1. – Annual estimates, uncertainty, and change

	Estimate 2012	Sampling error (%)	Change since 2007(%)
Forest Land Estimates			
Area (1,000 acres)	19,006	0.7	0.3
Number of live trees 1-inch diameter or larger (million trees)	12,144	1.3	-0.9
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	1,120,908	1.0	4.1
Net volume in live trees (1,000,000 ft ³)	41,050	1.1	4.1
Annual net growth of live trees (1,000 ft ³ /year)	735,517	3.0	NA
Annual mortality of live trees (1,000 ft ³ /year)	483,604	3.0	NA
Annual harvest removals of live trees (1,000 ft ³ /year)	299,960	7.4	NA
Annual other removals of live trees (1,000 ft ³ /year)	21,615	35.9	NA
Timberland Estimates			
Area (1,000 acres)	15,967	0.8	0.6
Number of live trees 1-inch diameter or larger (million trees)	9,738	1.5	-2.1
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	911,145	1.2	4.4
Net volume in live trees (1,000,000 ft ³)	33,269	1.3	4.6
Net volume of growing-stock trees (1,000,000 ft ³)	29,876	1.4	2.5
Annual net growth of growing-stock trees (1,000 ft ³ /year)	630,352	2.6	NA
Annual mortality of growing-stock trees (1,000 ft ³ /year)	260,503	3.8	NA
Annual harvest removals of growing-stock trees (1,000	245,873	7.5	NA
Annual other removals of growing-stock trees (1,000 ft ³ /year)	25,501	31.3	NA

Note: When available, sampling errors/bars provided in figures and tables represent 68 percent confidence intervals.

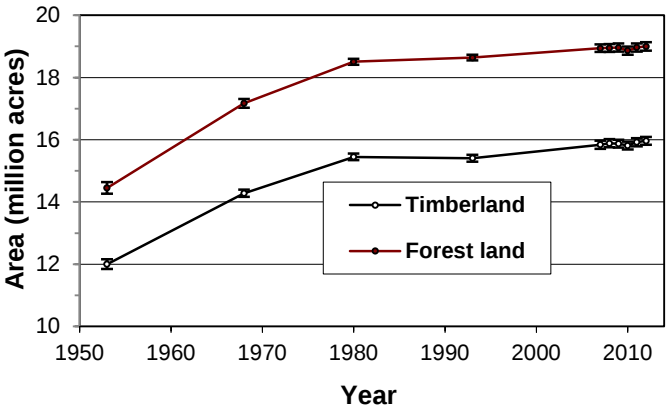


Figure 1. – Area of timberland and forest land by year.

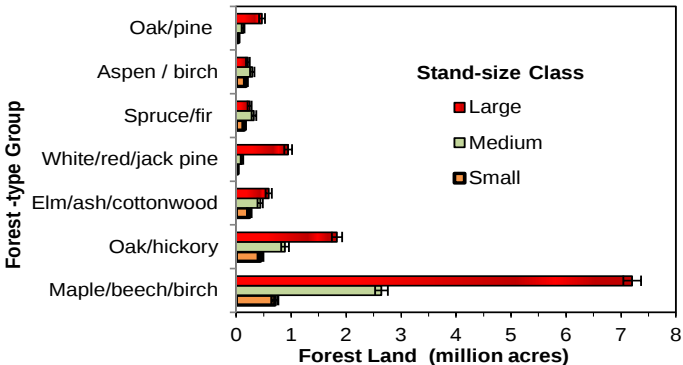


Figure 2. – Forest land area by stand-size class* for most common forest type groups, 2012.

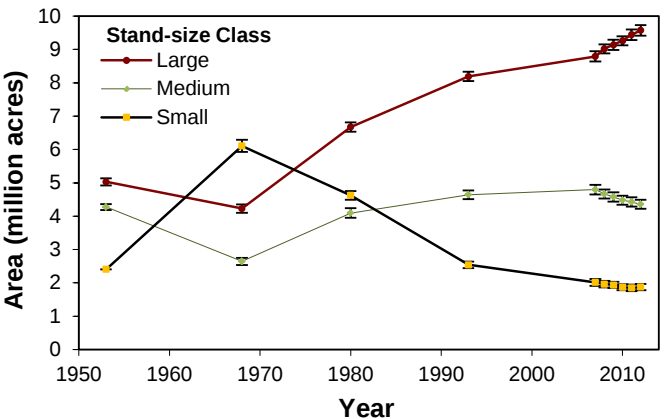


Figure 3. – Area of timberland by stand-size class* and year.

* Small: dominated by trees less than 5.0 inches d.b.h.; Medium: 5.0 to 8.9 inches d.b.h. for softwoods and 5.0 to 10.9 inches d.b.h. for hardwoods; Large: ≥ 9.0 inches for softwoods and 11.0 d.b.h. for hardwoods.

Table 2. – Top 10 tree species by statewide volume estimates, 2008-2012

Rank	Species	Volume of live trees on forest land (million ft ³)	Sampling error (%)	Percent change since 2007	Volume of sawtimber trees on timberland (million bdf)	Sampling error (%)	Percent change since 2007
1	Red maple	6,464	2.7	4.1	12,158	4.1	5.3
2	Sugar maple	6,263	3.1	0.4	12,746	4.6	-1.1
3	Eastern white pine	3,200	5.7	5.1	11,374	6.4	8.6
4	Eastern hemlock	3,126	4.9	6.2	6,989	6.2	4.9
5	White ash	2,481	4.1	7.5	5,967	5.8	15.6
6	American beech	2,423	3.9	4.6	3,581	6.9	3.4
7	Northern red oak	2,210	5.5	11.4	8,103	6.5	21.2
8	Black cherry	2,113	5.2	3.0	5,738	7.1	5.1
9	Yellow birch	1,987	4.6	0.9	2,071	8.5	-1.3
10	Red spruce	1,065	6.8	0.9	1,037	11.8	5.1
	Other softwoods	2,307	6.2	6.1	4,953	9.4	12.4
	Other hardwoods	7,412	2.7	4.0	19,225	4.2	12.4
	All Species	41,050	1.1	4.1	93,940	1.8	8.0

Eastern white pine (*Pinus strobus*) in New York

Eastern white pine (WP; *Pinus strobus*) plays an important role in New York's timber economy, as it is often the largest tree in the forest, and has a unique function in the forest ecosystem. WP is found growing across New York and is among the more rapid growing species of the northern forest (Fig. 4). WP is intermediate in shade tolerance and vegetative competition causes a major problem with regeneration. WP reproduction usually fails to make it to the upper canopy when it has to compete against maples, beech, and oaks--species that frequently grow in association with it (Burns and Honkala 1990). We present an overview of how WP is fairing in New York.

There are three forest types in New York that contain large amounts of WP: white pine, eastern white pine/northern red oak/white ash, and white pine/hemlock. These forest types cover over 1 million acres of forest land. Sixty-eight percent of WP volume in New York grows in these three types. And although WP is the predominant species in these forest types, 40 percent of the volume in them is other species. Eighty-one percent of acreage in these forest types are in the sawtimber stand-size class, while only 4 percent are sapling/seedling size stands (Fig 5); most originated from natural regeneration (85 percent). Of the WP growing in other forest types, most grows in stands dominated by hardwood species.

The species composition by diameter class can provide insights into future changes in the forest resource. Currently WP trees are underrepresented in the sapling diameter classes. In New York, less than 2 percent of trees in the 2-inch diameter class are WP, while in diameters 21 inches and larger, more than 16-percent of trees are WP (Fig 6). Since 1993, numbers of WP have decreased in trees less than 12 inches d.b.h. and increased for trees greater than 12 inches. These changes are reflected in changes in WP volume. Since 1993, WP volume has increase by 46 percent, but nearly all of this increase is due to growth on large trees. Overall WP has a lower annual mortality rate than all other species combined, 0.7 percent for WP versus 1.2 for all other species, but this is mostly due to low mortality in some of the larger diameter class. Like other species WP has a high mortality rate in the 6-inch class (Fig. 8). Most WP in the 8-inch diameter class and smaller grows in the understory, with about eighty percent of trees in these diameter classes either in an overtopped or intermediate crown position (Fig 9). Higher mortality rates in the lower diameter classes are likely the result of stress caused by poor crown position as these trees fall behind surrounding trees in competing for light.

The general situation is that most stands with WP are characterized by stands of large trees and young regenerating stands are scarce throughout New York, indicating a maturing of the WP resource. Most small WP grow in the understory. It is likely that as sawtimber size white pine are harvested or die they will not be completely replaced by WP trees growing into the sawtimber-size class. As this occurs, future increases in white pine volume will likely be constrained by decreasing amounts of ingrowth into large diameter classes. Currently, WP is ranked third in the State in terms of sawtimber volume. Without changes in how New York's forests are being managed, it is unlikely that WP will maintain this ranking. There are opportunities to increase WP growth. In stands containing WP, thinning and releasing WP would promote their growth into the overstory, and using WP as seed trees can enhance WP reproduction.

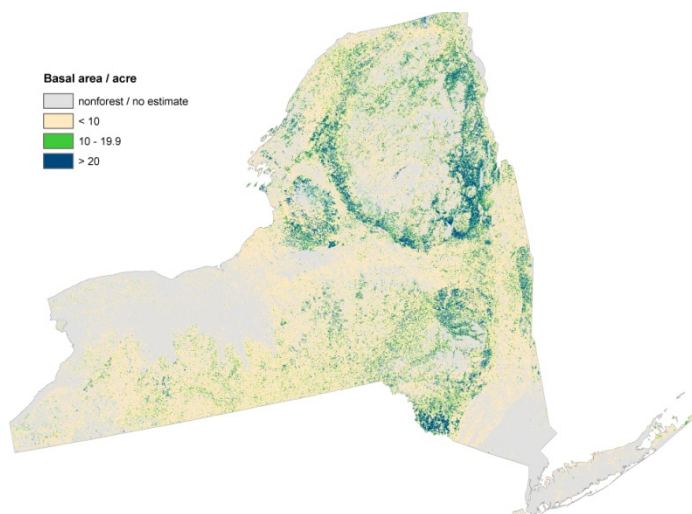


Figure 4. – Distribution of white pine by basal area per acre (square feet per acre), on forest land, New York.

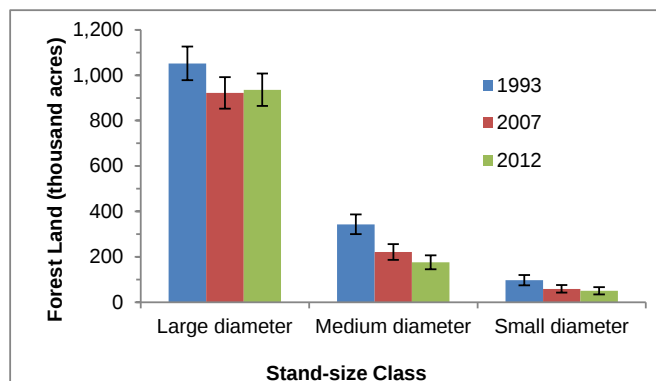


Figure 5. – Area of forest land in white pine forest types by stand-size class, New York, 1993, 2007, and 2012.

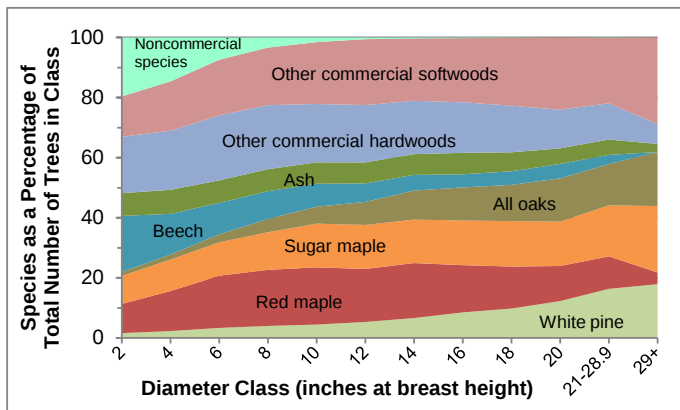


Figure 6. – Species composition by diameter class on forest land, New York, 2011.

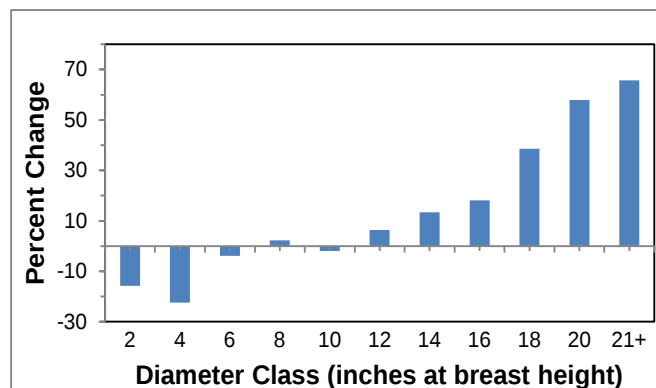


Figure 7. – Change in numbers of live white pine by diameter class, New York, 1993 to 2011.

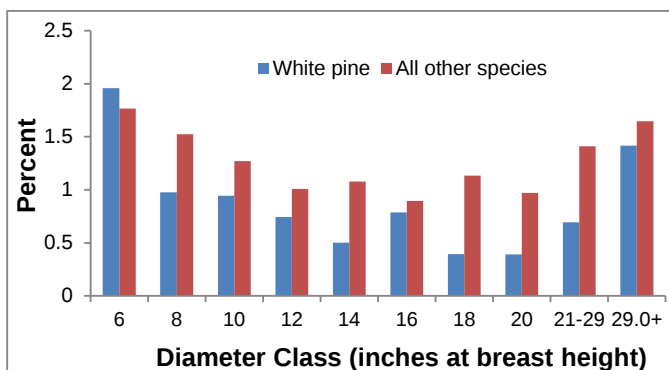


Figure 8. – Average annual mortality rate (in percent of current live volume) on forest land, by diameter class, New York, 2011.

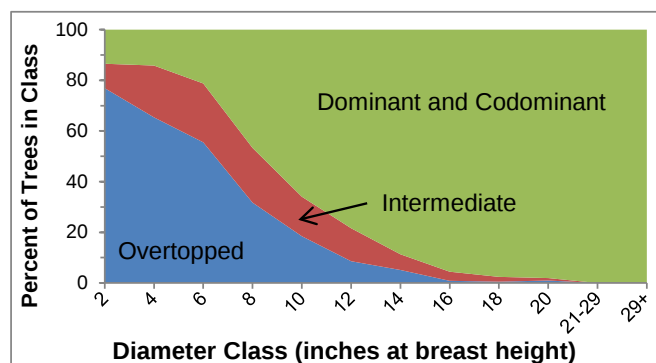


Figure 9. – Percentage of white pine by crown position and diameter class, New York, 2011.

Citation for this Publication

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FIA Program Information

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Estimates, tabular data, and maps from report may be generated at: www.fia.fs.fed.us/tools-data

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