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RESOURCE UPDATE FS-25

Forests of New York, 2013

This publication provides an overview of the forest resources in New York based on inventories conducted by the U.S. Forest Service, Forest Inventory and Analysis (FIA) program of the Northern Research Station. Information about the national and regional FIA program is available online at http://fia.fs.fed.us. Since 2003, FIA has implemented an annual inventory in New York. For the 2013 inventory, estimates for current variables, such as area, volume, and biomass, are based on 4,800 plots (both forested and nonforest) inventoried from 2009-2013. Change variables, such as net growth, removals, and mortality, are based on 4,591 plots collected in 2003-2008 and resampled in 2009-2013. Estimates from earlier annual and periodic inventories are shown for comparison. See Bechtold and Patterson (2005) and O'Connell et al. (2013) for definitions and technical details.

Overview

New York's forest land area totals 19.0 million acres and occupies 63 percent of the State's land area (Table 1). Since 2008, there has been little change in forest area. Eighty-three percent of New York's forest land, 15.8 million acres, is classified as timberland, 3.1 million acres is classified as reserved, and an additional 48,000 acres as forest land low in productivity. The most recent inventory shows the net volume of trees on forest land and timberland continued to increase, and annual growth continued to outpace annual removals. Annual mortality of growing-stock trees on timberland averaged 0.9 percent of the current inventory. This was the same mortality rate as found during the 2007 inventory.

Table 1.—New York forest statistics, 2013 and 2008. Volumes are for 5-inch and larger diameter trees. Numbers of trees and biomass are for trees 1-inch diameter and larger. Sampling errors in tables in this report represent 68 percent confidence intervals

	2013 Estimate	Sampling error (percent)	2008 Estimate	Sampling error (percent)	Change since 2008 (percent)
Forest Land					
Area (thousand acres)	18,950	0.6	18,951	0.7	0.0
Number of live trees ≥ 1 inch in diameter (million trees)	12,092	1.3	12,193	1.3	-0.8
Aboveground biomass of live trees (thousand oven-dry tons)	1,131,785	0.9	1,082,114	1.0	4.6
Net volume of live trees ≥ 5 inches in diameter (million ft^3)	41,409	1.0	39,610	1.1	4.5
Annual net growth of live trees ≥ 5 inches in diameter (thousand ft^3/yr)	727,361	3.2	701,541	6.2	3.7
Annual mortality of live trees ≥ 5 inches in diameter (thousand ft^3/yr)	479,224	3.4	501,108	5.8	-4.4
Annual harvest removals of live trees ≥ 5 inches in diameter (thousand ft^3/yr)	273,341	8.1	313,614	13.9	-12.8
Annual other removals of live trees ≥ 5 inches in diameter (thousand ft^3/yr)	16,173	34.9	26,859	86.1	-39.8
Timberland					
Area (thousand acres)	15,807	0.7	15,842	0.8	-0.2
Number of live trees 1-inch diameter or larger (million trees)	9,623	1.4	9,866	1.5	-2.5
Aboveground biomass of live trees (thousand oven-dry tons)	915,075	1.1	876,653	1.2	4.4
Net volume of live trees (million ft^3)	33,372	1.2	31,966	1.3	4.4
Net volume of growing-stock trees (million ft^3)	29,787	1.3	29,241	1.4	1.9
Annual net growth of growing-stock (thousand ft^3/yr)	612,052	2.6	594,925	5.4	2.9
Annual mortality of growing-stock trees (thousand ft^3/yr)	259,797	4.3	267,462	7.7	-2.9
Annual harvest removals of growing-stock trees (thousand ft^3/yr)	225,604	8.2	259,211	14.1	-13.0
Annual other removals of growing-stock trees (thousand ft^3/yr)	26,437	29.7	44,065	55.7	-40.0

Forest Area

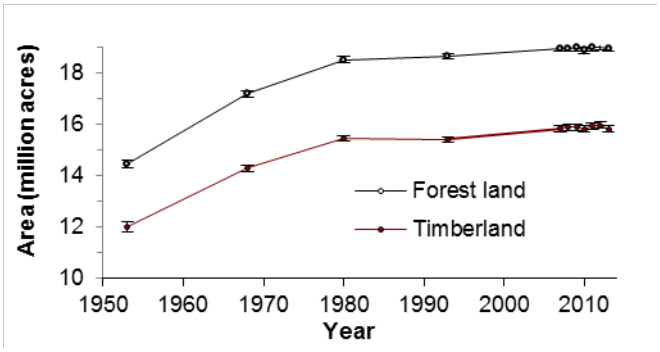

Figure 1.—Forest land and timberland by year, New York. Error bars in figures in this report represent 68-percent confidence intervals around the mean.

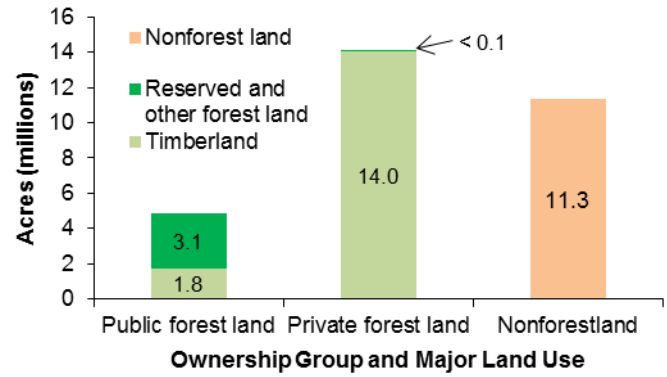

Figure 2.—Land area by major use and major ownership category, New York, 2013.

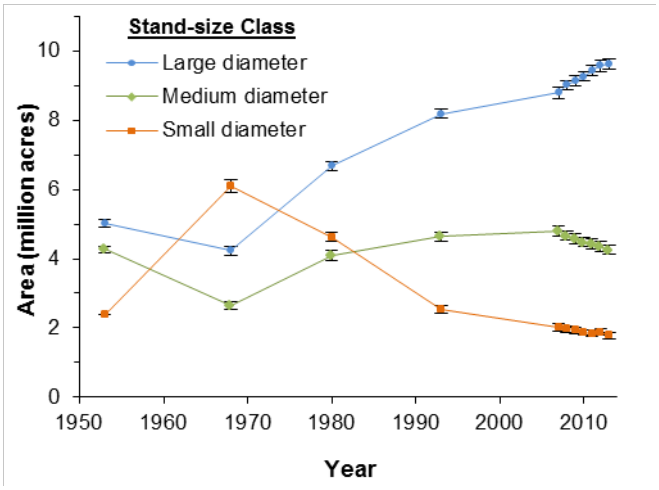

Figure 3.—Timberland by stand-size class and year, New York.

Successive inventories have shown forest land area stable since 2007 (Fig.1). Across the State, forest land lost to development have been offset by gains in forest land because of abandoned farm land reverting to forest. Recent changes in forest land reflect the continued development of forest land to nonforest uses and a slowing in farm land losses, and although recent changes in total forest land have been small, these trends may indicate that the area of forest land in New York is peaking. Future changes in forest land will depend on the pace of land development and to a great extent on the economics of farming.

Seventy-six percent of New York's forests are privately owned (14.1 million acres) (Fig. 2). These ownerships include families and individuals, corporations, and other private entities. The remaining 24 percent (4.8 million acres) is in public ownership. The largest public owner is the State which holds 1.1 million acres of timberland and 3.0 million acres of reserve forest.

New York's forests have been maturing as can be seen in the distribution of timberland by stand-size classes (Fig. 3). Since the 1968 inventory, acreage of large-diameter stands has been increasing and the area of medium and small diameter stands has been decreasing. Acreage in large diameter stands now accounts for 61 percent of timberland whereas the area in medium diameter stands is 28 percent and in small diameter stands is 11 percent.

Maple/beech/birch is the predominate forest-type group and occupies 55 percent of forest land (Fig. 4). Since the 2008 inventory, the proportion of forest land occupied by the maple/beech/birch forest-type group has changed by less than 1 percent.

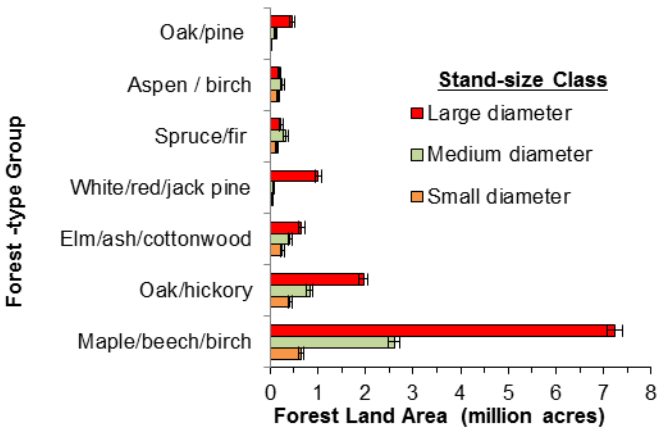

Figure 4.—Forest land by stand-size class (based on small, medium, and large trees) for top seven forest-type groups in acres, New York, 2013.

Volume, Biomass, and Trends

Across all forest land, the net volume of trees increased by 4.5 percent to 41.4 billion cubic feet. Red maple continued to be the most voluminous species followed by sugar maple, white pine, and hemlock (Table 2). Changes in volume since 2008 were inconsistent across species. While all major species exhibited increases in net volume, northern red oak and white pine had the largest increases, 11.2 and 8.6 percent, respectively. Yellow birch and sugar maple had the smallest increases 1.7 and 2.1 percent respectively.

Sawtimber volume on timberland increased by 7.3 percent to 94.3 billion board feet. Sugar maple is the leading sawtimber species by volume, followed by red maple, white pine, and northern red oak. Since 2008, northern red oak and white pine had the largest increases in board foot volume, 18.8 and 10.5 percent, respectively. Of the major species, yellow birch and American beech were the only major species to decrease in sawtimber volume, -4.4 and -2.7 percent, respectively.

Aboveground biomass on forest land totaled 1.1 billion dry tons. This was a 4.6 percent increase since 2008. Fifty-one percent of aboveground biomass is contained in the merchantable boles of growing-stock trees on timberland. Aboveground biomass on timberland averaged 58 dry tons per acre.

In terms of average annual growth and removals on timberland, red maple experienced the largest annual growth in volume since 2008, and sugar maple had the largest removals (Fig. 5). Together red and sugar maples account for 28 percent of growth and 30 percent of removals. Total annual growth outpaced total removals by a ratio of 2.1:1 from 2008 to 2013, although ratios varied considerably between species. Red maple had a growth to removals ratio of 3.0:1, whereas the ratio for sugar maple was 1.5:1. As a percentage of current volume, annual mortality averaged 1.1 percent on timberland. Beech had the highest mortality rate, averaging 2.0 percent per year.

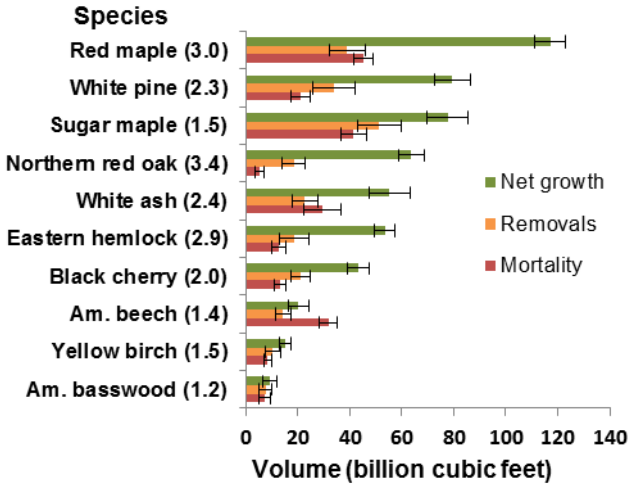

Figure 5.—Average annual net growth, removals, and mortality of net sound volume on timberland, and growth to removals ratio (G/R), New York, 2008-2013.

Table 2.—Net volume, and percent change in net volume on forest land; sawtimber volume and percent change on timberland, and biomass on forest land, New York, 2013, (top 10 species by net volume)

Species	Volume of live trees on forest land (million ft^3)	Sampling error (percent)	Percent change since 2008	Volume of sawtimber trees on timberland (million bdft)	Sampling error (percent)	Percent change since 2008	Aboveground biomass on forest land (million tons)	Sampling error (percent)
Red maple	6,546	2.6	4.3	11,938	4.0	2.9	180	2.5
Sugar maple	6,310	3.0	2.1	12,875	4.5	2.7	201	2.9
Eastern white pine	3,287	5.7	8.6	11,609	6.5	10.5	58	5.7
Eastern hemlock	3,156	4.9	5.6	6,996	6.3	1.1	60	4.9
White ash	2,472	4.1	2.3	5,822	5.7	7.0	77	3.9
American beech	2,408	3.9	3.8	3,381	7.0	-2.7	82	3.5
Northern red oak	2,257	5.3	11.2	8,263	6.4	18.8	72	5.3
Black cherry	2,147	5.3	5.1	5,863	7.3	8.3	55	5.1
Yellow birch	1,995	4.6	1.7	2,057	8.7	-4.4	60	4.4
Red spruce	1,085	6.8	3.1	1,018	12.0	4.4	20	6.4
Other softwoods	2,230	6.3	2.5	4,785	9.7	5.7	44	6.3
Other hardwoods	7,515	2.7	5.3	19,695	4.2	13.6	222	2.7
All Species	41,409	1.0	4.5	94,300	1.7	7.3	1132	0.9

Characteristics of New York's Family Forest Owners

The National Woodland Owner Survey (NWOS), conducted by the USDA Forest Service's Forest Inventory and Analysis program, studies private forest landowners' attitudes, management objectives, and concerns (Butler 2008). The NWOS has most recently focused on family and individual forest owners with 10 acres or more of forest land. The NWOS (2011-2013) estimates 200,000 family forest owners holding 10 acres or more of forest land, totaling 9.3 million acres of forest land in New York. This represents nearly half the forest land in New York. Focusing on these 200,000 family forest ownerships with 10+ acres, the NWOS found they have the characteristics listed in Table 3. Landowners' low priority given to timber production does not mean that landowners will not harvest trees. The relatively high number of owners that harvest trees means that when conditions are right, many landowners will harvest trees, although the low priority and lack of written management plans suggests that these harvests are not part of a long-term management plan. Owners tend to be fairly old and many have owned their land for decades.

Because most of New York's forest land is held by thousands of private landowners, decisions by these owners will have a great influence on New York's future forest. More information on the NWOS can be found at: http://www.fia.fs.fed.us/nwos/

Table 3.—Summary of responses to Nation Woodland Owner Survey, family forest land ownerships with 10+ acres in New York, 2011-2013

Owner:	Owners (percent)	Acres (percent)
Uses woodland property as primary residence	72	67
Is retired	40	47
Is 55 years old or older	67	71
Is 65 years old or older	35	40
Has owned land for more than 25 years	37	47
Has an annual income below $100,000	75	66
Receives no income from wooded land owned	91	84
Has posted land to restrict public access	75	85
Plans to improve wildlife habitat in next 5 years	47	49
Wants their wooded land to stay wooded	90	91
Is likely or extremely likely to give away land in the next 5 years *	16	18
Felt getting advice on how to transfer land to next generation would be helpful or very helpful *	40	44
Felt that timber production was an important or very important reason for owning forest land*	24	34
Has cut trees for personal use	63	69
Has cut trees for commercial reasons	41	53
Has cut or removed trees for own use in past 5 yrs.	53	57
Has cut or removed trees for sale in past 5 yrs.	17	25
Plans to cut trees for own use in next 5 yrs.	56	59
Plans to cut trees for sale in next 5 yrs.	17	29
Has not received forest management advice	84	73
Has a written management plan	9	19
Is not familiar with cost share programs	75	68
Is not familiar with forestry related tax programs	86	74
Felt getting advice on woodland management would be helpful or very helpful *	54	58
Felt getting advice on more favorable tax policies would be helpful or very helpful*	64	72

*includes two highest responses on a five-point Likert scale

Literature Cited

Bechtold, W.A.; Patterson, P.L., eds. 2005. **The enhanced Forest Inventory and Analysis Program: national sampling design and estimation procedures.** Gen. Tech. Rep. SRS-80. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 85 p.

Butler, B.J. 2008. **Family forest owners of the United States, 2006.** Gen. Tech. Rep. NRS-27. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 72 p.

O'Connell, B.M.; LaPoint, E.B.; Turner, J.A.: et al. 2013. **The Forest Inventory and Analysis database: database description and users manual version 5.16 for Phase 2.** Washington, DC: U.S. Department of Agriculture, Forest Service. (http://www.fia.fs.fed.us/library/database-documentation/)

Widmann, Richard H.; Crawford, Sloane; et al. 2012. **New York's forests 2007.** Resour. Bull. NRS-65. Newtown Square, Pa: U.S. Department of Agriculture, Forest Service, Northern Research Station. 64 p.

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Contact Information

Richard H. Widmann, Forester
USDA Forest Service, Northern Research Station
11 Campus Blvd. Suite 200
Newtown Square, PA 19073
Ph: 610-557-4051 / Fax: 610-557-4051
rwidmann@fs.fed.us
Northern FIA: http://nrs.fs.fed.us/fia/
National FIA: http://fia.fs.fed.us

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