USDA United States Department of Agriculture

RESOURCE UPDATE FS-159

Forests of Connecticut, 2017

This publication provides an overview of the forest resources in Connecticut based upon inventories conducted by the USDA 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 www fia.fs fed.us.

Since 2003, FIA has implemented an annual inventory in the State and currently measures 14 percent of the sample plots each year. For the 2017 inventory, estimates for current variables, such as area, volume, and biomass, are based on 493 plots inventoried from 2011-2017. Change variables, such as net growth, removals, and mortality, are based on 476 plots inventoried in 2008-2012 and resampled in 2011-2017. Estimates from earlier annual and periodic inventories are included for comparison.

See Bechtold and Patterson (2005) and O'Connell et al. (2017) for definitions and technical details.

Additional data and reports are available online. (www nrs fs fed.us/fia/data-tools/state-reports/CT). A complete set of inventory tables is available at https://doi.org/10.2737/FS-RU-159.

Overview

Connecticut contains an estimated 1.8 million acres of forest land (Table 1) and covers 57.8 percent of the land area in the State. Most of the forest land, 98.3 percent, is classified as timberland, meaning that it exceeds a minimum level of productivity and is not legislatively reserved from timber harvesting.

On the forest land in Connecticut, there are an estimated 0.8 billion live trees ≥1 in d.b.h. (Table 1). These trees have a total above ground biomass of 135.5 million tons and, looking at trees ≥5 in d.b.h., a total net volume of 4.7 billion ft^3. The ratio of net growth to removals is 5.1:1. Selected statistics are also provided in Table 1 for growing-stock trees, which are a subset of all live trees ≥5 in d.b.h. and meet specific merchantability requirements.

Table 1.—Connecticut forest statistics, 2017 and 2012. Volume estimates are for trees ≥5 in diameter at breast height (d.b.h.). Number of trees and biomass estimates are for trees ≥1 in d.b.h. Sampling errors and error bars shown in tables and figures in this report represent 68-percent confidence intervals.

	2017 estimate	Sampling error (%)	2012 estimate	Sampling error (%)	Change since 2012 (%)
Forest Land					
Area (thousand acres)	1,790	2.3	1,736	2.6	3.1
Number of live trees ≥1 in d.b.h. (million trees)	782	4.9	791	4.8	-1.1
Live tree aboveground biomass (thousand oven-dry tons)	135,495	2.9	127,480	3.2	6.3
Net volume of live trees ≥5 in d.b.h. (million ft^3)	4,680	3.2	4,387	3.4	6.7
Annual net growth of live trees ≥5 in d.b.h. (thousand ft^3/yr)	111,554	9.8	103,048	7.2	8.3
Annual mortality of live trees ≥5 in d.b.h. (thousand ft^3/yr)	31,706	12.6	27,329	14.7	16.0
Annual harvest removals of live trees ≥5 in d.b.h. (thousand ft^3/yr)	18,406	27.8	19,453	31.3	-5.4
Annual other removals of live trees ≥5 in d.b.h. (thousand ft^3/yr)	3,460	62.7	4,032	60.1	-14.2
Timberland					
Area of timberland (thousand acres)	1,760	2.4	1,710	2.7	2.9
Number of live trees ≥1 in d.b.h. (million trees)	768	5.1	778	5.0	-1.3
Live tree aboveground biomass (thousand oven-dry tons)	133,148	3.1	125,303	3.4	6.3
Net volume of live trees ≥5 in d.b.h. (million ft^3)	4,600	3.3	4,314	3.6	6.6
Net volume of growing-stock trees ≥5 in d.b.h. (million ft^3)	4,198	3.5	3,981	3.7	5.5
Annual net growth of growing-stock trees ≥5 in d.b.h. (thousand ft^3/yr)	91,558	9.7	90,447	7.2	1.2
Annual mortality of growing-stock trees ≥5 in d.b.h. (thousand ft^3/yr)	20,789	15.7	18,033	17.7	15.3
Annual harvest removals of growing-stock trees ≥5 in d.b.h. (thousand ft^3/yr)	13,821	29.7	15,544	33.0	-11.1
Annual other removals of growing-stock trees ≥5 in d.b.h. (thousand ft^3/yr)	2,861	64.9	3,179	60.4	-10.0

Forest Area

Connecticut's forest land area has not substantially changed since 2012 (Fig. 1). An estimated 71.2 percent of the forest land is privately owned, 28.1 percent is publicly owned, and the remainder is owned by Native American tribes (Fig. 2).

Currently, 85, 8.8, and 5.1 percent of the timberland in Connecticut is in large, medium, and small stand sizes, respectively (Fig. 3).

The most common forest-type group is oak/hickory, representing 69.9 percent of Connecticut's forest land area (Fig. 4). The next most common forest-type groups are elm/ash/cottonwood, maple/beech/birch, and other hardwoods.

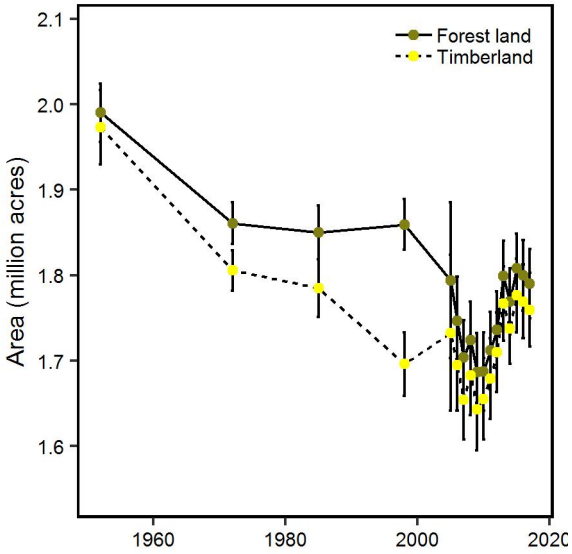

Figure 1.—Area of forest land and timberland, Connecticut.

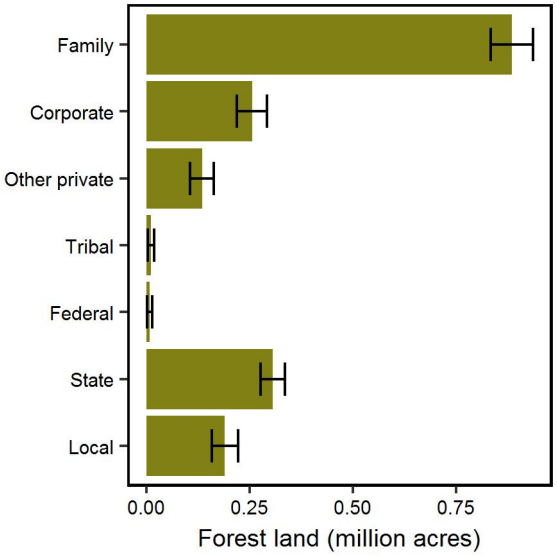

Figure 2.—Area of forest land by ownership group, Connecticut, 2017.

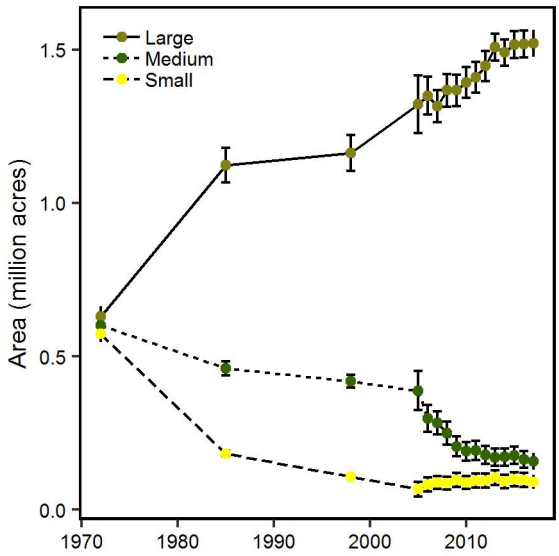

Figure 3.—Area of timberland by stand-size class, Connecticut.

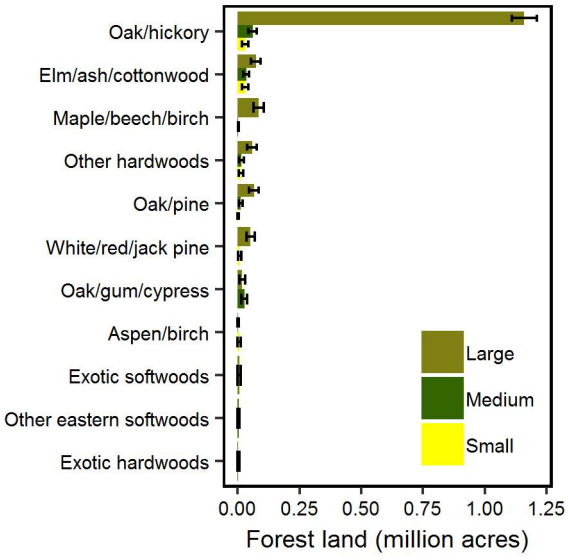

Figure 4.—Area of forest land by forest-type group and stand-size class, Connecticut, 2017.
Stand-size classes: Small-dominated by trees <5.0 in d.b.h.; Medium-dominated by trees 5.0 to 8.9 in d.b.h. for softwoods and 5.0 to 10.9 inches d.b.h. for hardwoods; Large-dominated by trees ≥9.0 in for softwoods and 11.0 in d.b.h. for hardwoods.

Forest Composition

Connecticut's forests contain a wide variety of tree species with over 58 species sampled in 2017. This composition looks different depending on whether the number or volume of trees are examined.

In terms of volume, red maple is the most common tree in Connecticut followed by northern red oak and black oak (Table 2). Collectively, the 10 most voluminous tree species account for 81.1 percent of the total volume of live trees on forest land in Connecticut. Of these species, eastern white pine, northern red oak, and red maple showed the most substantial increases in volume since 2012.

In terms of number of trees, red maple is the most numerous species in Connecticut with 24.5 percent of the tree stems in the State (Fig. 5). Other common species include sweet birch, American beech, sugar maple, and eastern white pine. The ten most common species, in terms of numbers of stems, account for 75.1 percent of the trees in the State.

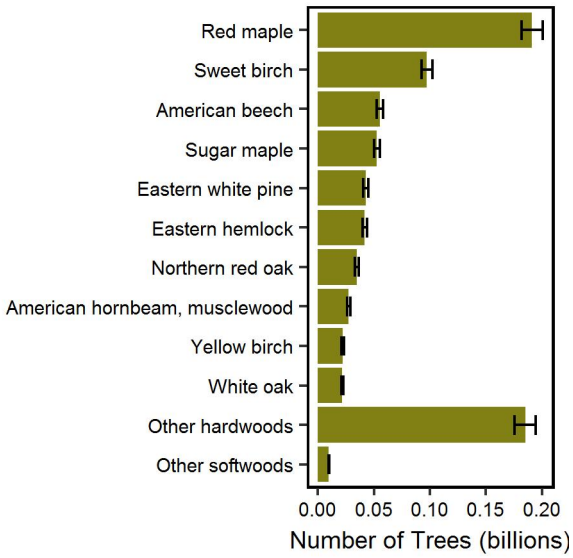

Figure 5.—Number of trees ≥ 1 in d.b.h. by species, Connecticut, 2017.

Table 2.—Net volume and percent change in net volume on forest land; sawtimber volume and percent change on timberland, Connecticut, 2017 (top 10 species by net volume).

Rank	Species	Volume of live trees on forest land (million ft^3)	Sampling error (%)	Change since 2012 (%)	Volume of sawtimber trees on timberland (million board ft)	Sampling error (%)	Change since 2012 (%)
1	Red maple	973.6	8.0	8.3	2,602.7	10.3	10.5
2	Northern red oak	659.2	9.7	9.4	2,670.5	10.3	13.4
3	Black oak	425.1	11.9	3.9	1,820.2	13.2	6.6
4	Eastern white pine	346.7	19.4	17.8	1,481.7	24.4	21.2
5	Sweet birch	335.5	9.5	5.8	785.1	13.6	4.7
6	White oak	274.6	10.9	-1.9	1,030.3	12.6	-2.3
7	Eastern hemlock	219.7	20.3	-0.2	624.0	23.4	-0.8
8	White ash	212.7	17.6	5.3	781.6	21.9	1.6
9	Sugar maple	191.6	16.8	0.2	550.5	22.5	-2.7
10	Scarlet oak	159.2	15.8	1.3	614.4	16.7	10.9
	Other softwood	38.6	43.2	-2.5	107.7	57.9	-2.7
	Other hardwood	844.5	9.2	8.9	2,853.8	13.6	11.5
	All species	4,681.0	3.7	6.7	15,922.5	4.8	8.8

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. https://doi.org/10.2737/SRS-GTR-80.

O'Connell, B.M.; Conkling, B.L.; Wilson, A.M. [et al.]. 2017. **The Forest Inventory and Analysis database: Database description and user guide for Phase 2 (version 7.0).** Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 830 p. https://www.fia.fs.fed.us/library/database-documentation (accessed May 26, 2017).

How to Cite This Publication

Butler, Brett J. 2018. **Forests of Connecticut, 2017.** Resource Update FS-159. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 3 p. https://doi.org/10.2737/FS-RU-159.

Northern FIA: http://nrs.fs.fed.us/fia/
National FIA: http://fia.fs.fed.us

Contact Information

Brett J. Butler, Research Forester
USDA Forest Service, Northern Research Station
160 Holdsworth Way
Amherst, MA 01003
Phone: 413-545-1387 | Email: bbutler01@fs.fed.us

The published report is available online at https://doi.org/10.2737/FS-RU-159