



Forests of West Virginia, 2017

This publication provides an overview of the forest resources in West Virginia based upon 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 www.fia.fs.fed.us.

Since 2004, FIA has implemented an annual inventory measuring 14 percent of sample plots each year. For the 2017 inventory, estimates for current variables, such as area, volume, and biomass, are based on 2,424 (2,086 forested) plots inventoried from 2011–2017. Change variables, such as net growth, removals, and mortality, are based on 2,003 (1,676 forested) plots inventoried in 2009–2012 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/WV). A complete set of inventory tables is available at <https://doi.org/10.2737/FS-RU-174>.

Overview

West Virginia contains an estimated 12.1 million acres of forest land (Table 1) and covers 78.5 percent of the land area in the State. Most of the forest land, 97.1 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 West Virginia, there are an estimated 6.1 billion live trees that are at least 1 inch in diameter (Table 1). These trees have a total above ground biomass of 840.4 million tons and trees at least 5 inches in diameter have a total net volume of 29.1 billion ft³. The ratio of net growth to removals is 2.1:1.

Table 1.—West Virginia forest statistics, 2017 and 2012. Volumes are for trees 5 inches and larger in diameter. Number of trees and biomass are for trees 1 inch and larger in diameter. Sampling errors and error bars shown in tables and figures in this report represent 68 percent confidence intervals.

	2017 Estimate	Sampling error (percent)	2012 Estimate	Sampling error (percent)	Change since 2012 (percent)
Forest Land					
Area (thousand acres)	12,073	0.6	12,161	0.7	-0.7
Number of live trees (million trees)	6,131	1.6	6,328	1.7	-3.1
Aboveground biomass of live trees (thousand oven-dry tons)	840,367	1.1	814,461	1.1	3.2
Net volume of live trees (million ft ³)	29,070	1.2	28,122	1.2	3.4
Annual net growth of live trees (thousand ft ³ /yr)	470,218	3.8	610,894	4.3	-23.0
Annual mortality of trees (thousand ft ³ /yr)	297,672	4.5	259,696	5.9	14.6
Annual harvest removals of live trees (thousand ft ³ /yr)	217,702	10.9	231,445	14.0	-5.9
Timberland					
Area (thousand acres)	11,723	0.7	11,795	0.8	-0.6
Number of live trees (million trees)	5,948	1.7	6,124	1.8	-2.9
Aboveground biomass of live trees (thousand oven-dry tons)	810,994	1.2	784,203	1.2	3.4
Net volume of live trees (million ft ³)	27,989	1.2	27,030	1.3	3.5
Net volume of growing stock trees (million ft ³)	25,895	1.3	25,217	1.3	2.7
Annual net growth of growing stock trees (thousand ft ³ /yr)	416,764	3.3	547,956	3.9	-23.9
Annual mortality of growing stock trees (thousand ft ³ /yr)	214,262	5.1	185,302	6.7	15.6
Annual harvest removals of growing stock trees (thousand ft ³ /yr)	181,739	11.1	197,748	14.1	-8.1

Forest Area

West Virginia's forest land area has decreased slightly since 2012 (Fig. 1). An estimated 86.5 percent of the forest land is privately owned and 13.5 percent is publicly owned (Fig. 2).

Currently, 79.6, 14.5, and 5.7 percent of the timberland in West Virginia is in large, medium, and small stand sizes, respectively (Fig. 3).

The most common forest-type group is oak/hickory, representing 73.2 percent of West Virginia's forest land area (Fig. 4). The next most common forest-type groups are maple/beech/birch, oak/pine, and elm/ash/cottonwood.

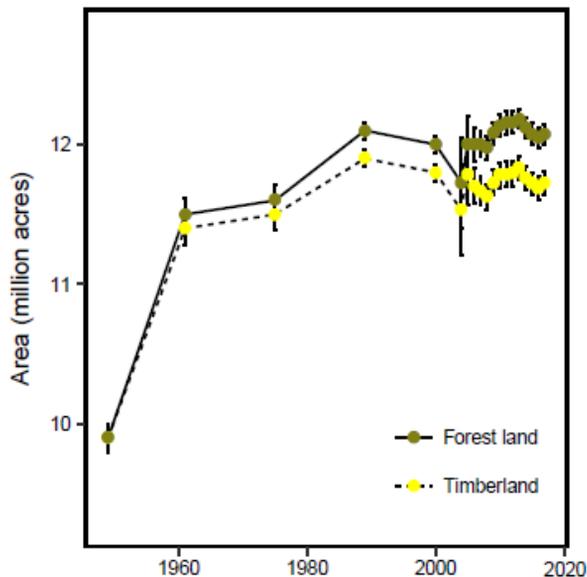


Figure 1.—Area of forest land and timberland, West Virginia.

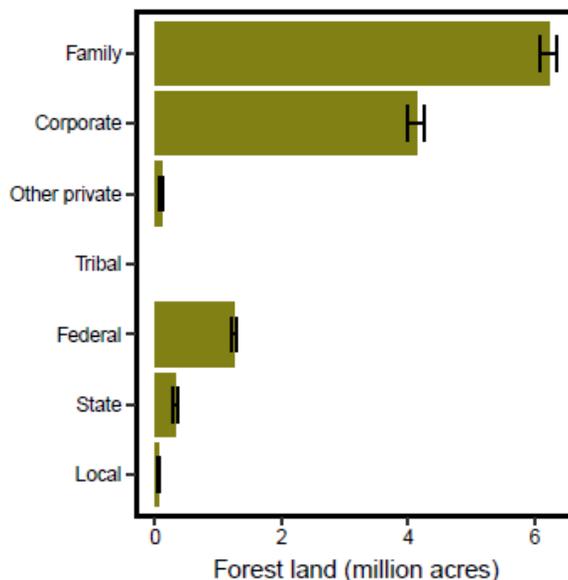


Figure 2.—Area of forest land by ownership group, West Virginia, 2017.

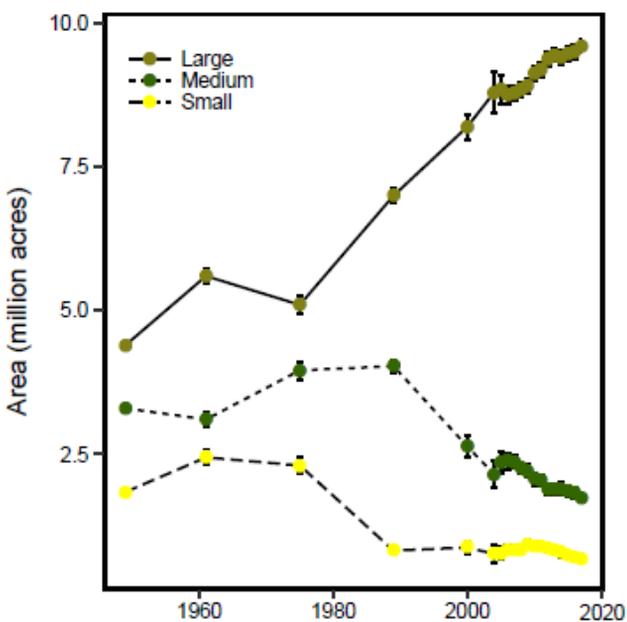


Figure 3.—Area of timberland by stand-size class, West Virginia.

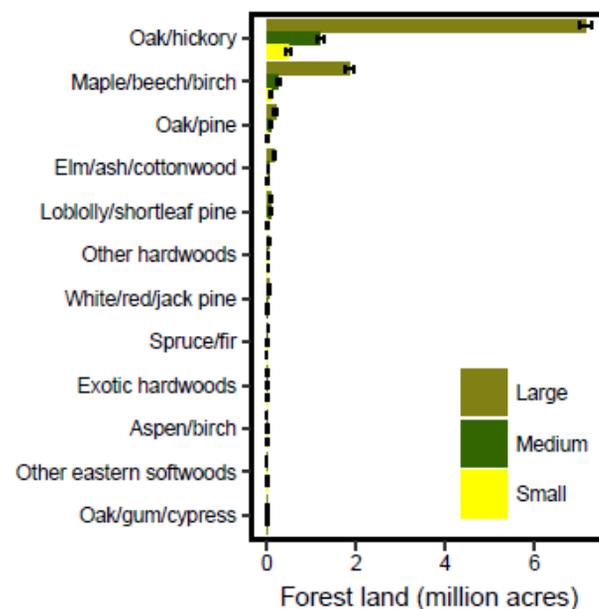


Figure 4.—Area of forest land by forest-type group, West Virginia, 2017.

Forest Composition

West Virginia’s forests contain a wide variety of tree species with over 111 species sampled in 2017. This composition looks different depending on whether the number or volume of trees are examined.

In terms of volume, yellow-poplar (*Liriodendron tulipifera*) is the most common tree in West Virginia followed by chestnut oak (*Quercus prinus*) and red maple (*Acer rubrum*) (Table 2). Collectively, the 10 most voluminous tree species account for 72.1 percent of the total volume of live trees on forest land in West Virginia. Of these species, black cherry (*Prunus serotina*), chestnut oak, and sugar maple (*Acer saccharum*) showed the most substantial increases in volume since 2012.

In terms of number of trees, red maple is the most numerous species in West Virginia with 14.3 percent of the tree stems in the State (Fig. 5). Other common species include sugar maple, American beech (*Fagus grandifolia*), yellow-poplar, and blackgum (*Nyssa sylvatica*). The ten most common species, in terms of numbers of stems, account for 58.9 percent of the trees in the State.

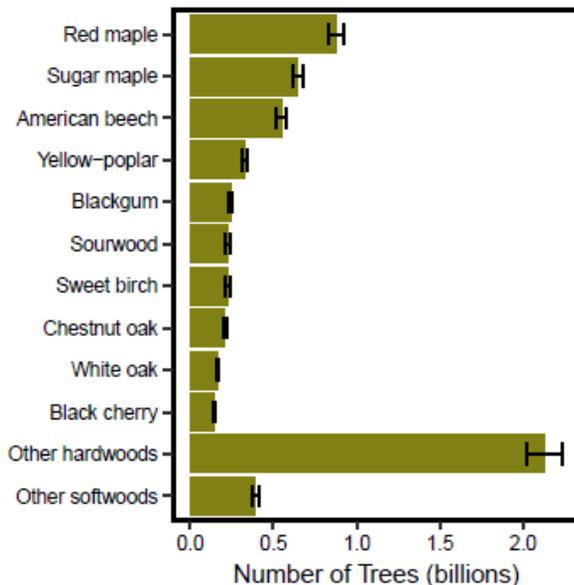


Figure 5.—Number of trees at least 1 inch in diameter by species, West Virginia, 2017.

Table 2.—Net volume and percent change in net volume on forest land; sawtimber volume and percent change on timberland, West Virginia, 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	Yellow-poplar	4,337.4	4.3	4.5	18,114.0	4.9	8.1
2	Chestnut oak	2,724.0	4.8	6.8	8,714.9	5.8	7.0
3	Red maple	2,714.3	3.6	4.0	6,682.5	5.2	4.6
4	White oak	2,405.1	4.9	1.0	9,199.4	5.7	4.9
5	Northern red oak	2,352.8	5.1	3.9	10,162.4	6.0	4.9
6	Sugar maple	2,060.6	4.6	4.7	5,550.3	6.6	4.1
7	Black cherry	1,255.5	7.0	15.1	4,035.5	9.3	18.8
8	Black oak	1,174.3	6.5	1.4	4,765.7	7.9	5.5
9	American beech	1,099.7	7.0	0.8	3,369.4	10.0	-5.6
10	Pignut hickory	822.2	6.7	3.7	2,567.9	8.3	7.5
	Other softwood	1,529.6	5.6	0.5	4,305.0	7.0	-1.6
	Other hardwood	6,594.6	2.4	0.8	18,538.1	3.6	5.1
	All species	29,070.1	1.4	3.4	96,005.1	1.8	5.5

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. **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

Morin, Randall S. 2018. **Forests of West Virginia, 2017**. Resource Update FS-174. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 3 p. <https://doi.org/10.2737/FS-RU-174>.

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

Contact Information

Randall S. Morin, Research Forester
USDA Forest Service, Northern Research Station
11 Campus Blvd., Ste. 200
Newtown Square, PA 19073
Ph: 610-557-4054 / Fax: 610-557-4250
rsmorin@fs.fed.us