

West Virginia's Forest Resources, 2010

Research Note NRS-127

This publication provides an overview of forest resource attributes for West Virginia 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 and uncertainty.

	Estimate 2010	Sampling error (%)	Change since 2008 (%)
Forest Land Estimates			
Area (1,000 acres)	12,135	0.7	1.3
Number of live trees 1-inch diameter or larger (million trees)	6,305	1.7	1.8
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	799,215	1.1	1.7
Net volume in live trees (1,000,000 ft ³)	27,571	1.2	1.7
Annual net growth of live trees (1,000 ft ³ /year)	689,108	5.8	NA
Annual mortality of live trees (1,000 ft ³ /year)	218,579	9.5	NA
Annual harvest removals of live trees (1,000 ft ³ /year)	247,284	19.0	NA
Annual other removals of live trees (1,000 ft ³ /year)	10,400	87.2	NA
Timberland Estimates			
Area (1,000 acres)	11,853	0.7	1.1
Number of live trees 1-inch diameter or larger (million trees)	6,161	1.7	1.6
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	778,195	1.2	1.6
Net volume in live trees (1,000,000 ft ³)	26,813	1.2	1.5
Net volume of growing-stock trees (1,000,000 ft ³)	25,272	1.3	0.9
Annual net growth of growing-stock trees (1,000 ft ³ /year)	608,485	6.5	NA
Annual mortality of growing-stock trees (1,000 ft ³ /year)	159,106	11.0	NA
Annual harvest removals of growing-stock trees (1,000 ft ³ /year)	210,660	19.2	NA
Annual other removals of growing-stock trees (1,000 ft ³ /year)	37,413	48.4	NA

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

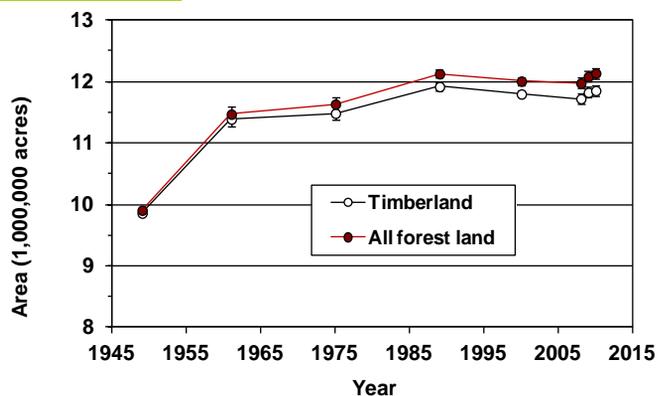


Figure 1. – Area of timberland and forest land by year.

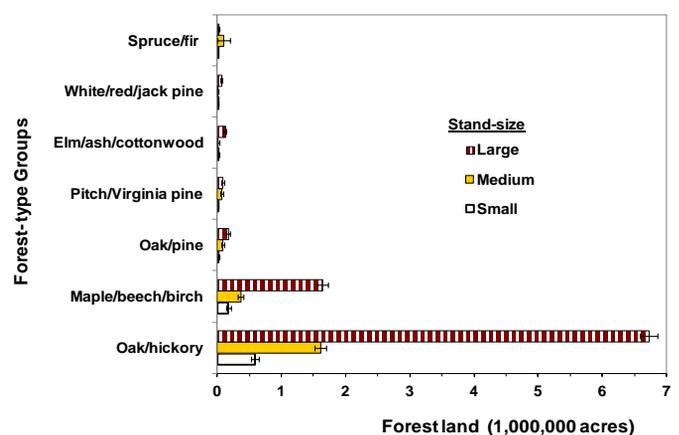


Figure 2. – Forest land area by stand-size class* top for seven forest type groups, 2010.

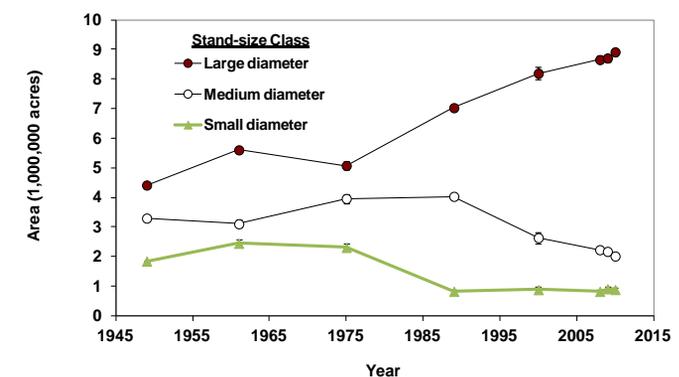


Figure 3. – Area of timberland by stand-size class* and year.

* 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, 2010.

Species	Volume of live trees on forest land (million ft ³)	Sampling error (%)	Change since 2008 (%)	Volume of sawtimber trees on timberland (million bdf ^t)	Sampling error (%)	Change since 2008 (%)
Yellow-poplar	3,960	4.2	1.6	16,050	4.7	2.0
Red maple	2,467	3.8	1.1	5,949	5.3	2.2
Chestnut oak	2,455	4.6	2.0	7,900	5.4	3.8
White oak	2,409	4.4	2.5	8,783	5.2	2.9
Northern red oak	2,171	5.1	1.4	9,304	6.0	1.6
Sugar maple	1,954	4.6	3.2	5,253	6.4	1.9
Black oak	1,203	5.6	-3.6	4,780	6.8	-5.0
American beech	1,105	6.4	4.0	3,699	8.6	6.9
Black cherry	1,024	7.7	0.1	3,258	10.1	-0.3
Pignut hickory	808	6.1	2.6	2,392	7.9	2.1
Other softwoods	1,462	6.3	3.4	4,256	8.0	2.0
Other hardwoods	6,553	2.3	1.8	17,994	3.4	2.0
All Species	27,571	1.2	1.7	89,616	1.7	1.9

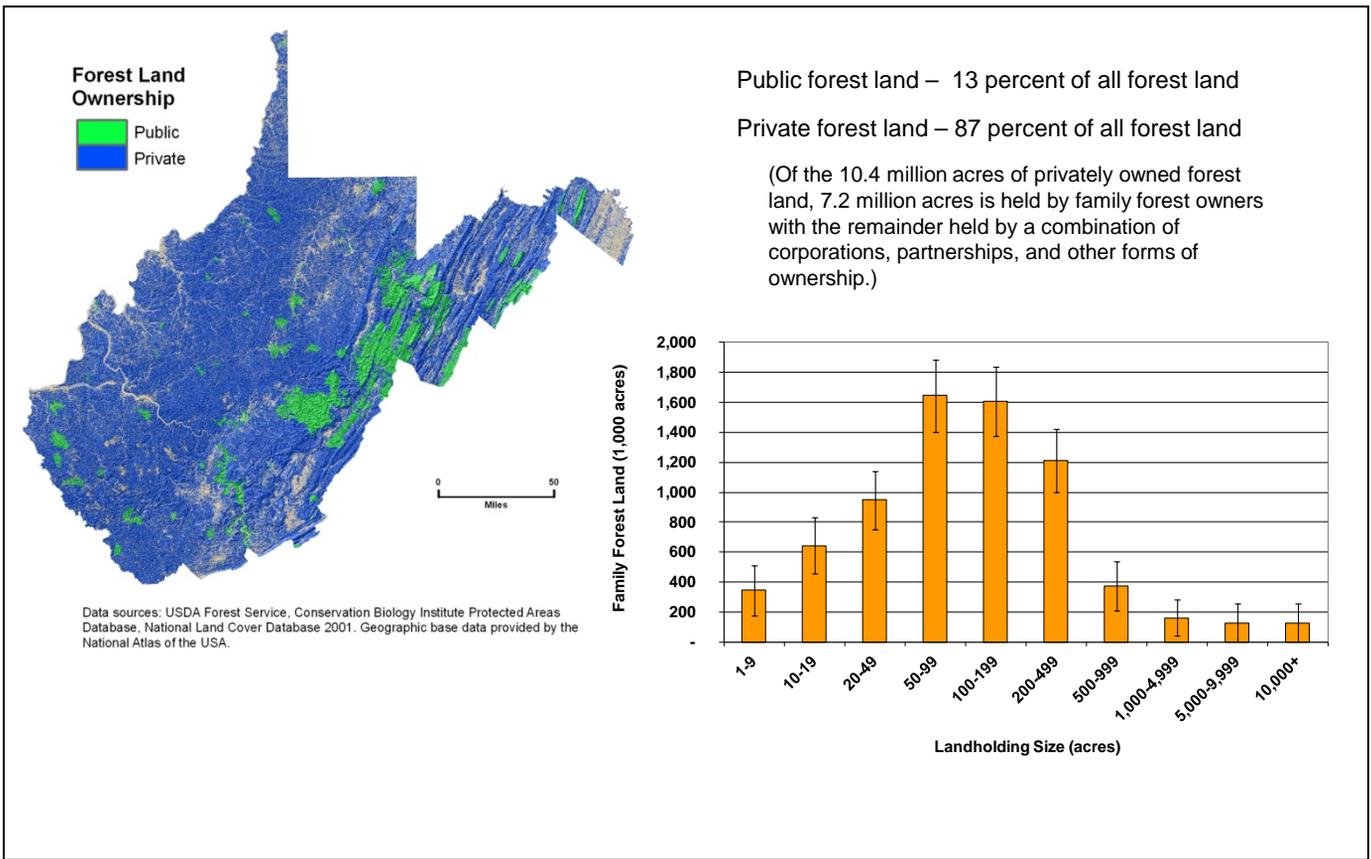


Figure 4. – Area of forest land by major owner group (2010) and size of private family forest landholding (2006). Error bars represent 68 percent confidence intervals.

Are West Virginia's forests being managed sustainably?

Changes in timber volume (growing stock) can be explained by examining growth, removals and mortality of trees. Comparing net growth to removals addresses one aspect of forest sustainability: when net growth exceeds removals, total growing stock volume increases. Removals include trees harvested on land that remains in timberland, trees on timberland that has been reclassified to reserved forest land, and trees lost because the forest was developed for a nonforest use. The volume of trees that die from natural causes such as insects, diseases, wind, and suppression from other trees is reported as mortality. The data presented in Figures 5-7 are estimates of annual change in growing-stock volume on private land and unreserved public timberland in West Virginia. These data are based on remeasurement of plots first measure during 2004-2006 and represent 40 percent of a full measurement cycle. Analysis of these individual components can help us better understand what is influencing net change in volume.

The growth of trees has greatly outpaced their mortality and removals. The most recent inventory revealed that as a percentage of the total current inventory, gross growth was 3.0 percent; mortality: -0.6 percent; net growth: +2.4 percent; and removals: -1.0 percent. This results in an overall net change of 1.4 percent annually.

Total growth outpace removals by a ratio of 2.5:1. Individually, growth for all major species also exceeded removals. Yellow-poplar had the largest amount of growth followed by red, and sugar maple. Yellow-poplar also had the largest amount of removals. Red maple is increasing at an annual rate of 2.4 percent, exceeding the State average for all species. Of the major species American beech had the lowest annual increase in volume.

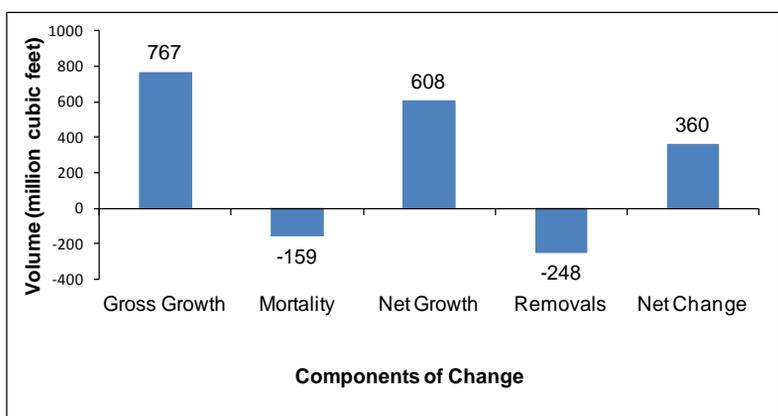


Figure 5. – Average annual components of change in growing-stock volume on timberland, West Virginia, 2010.

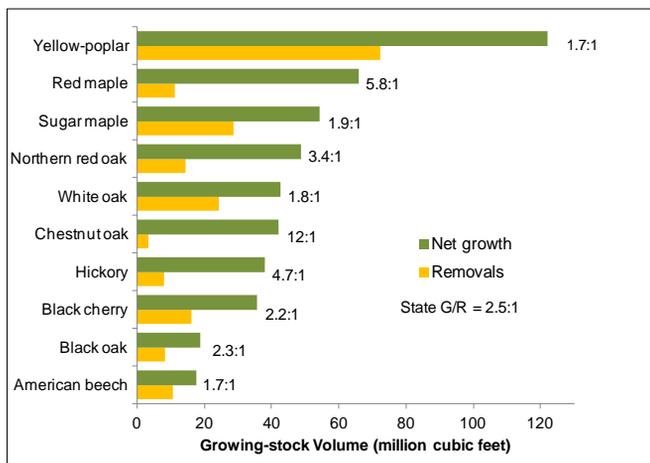


Figure 6. – Average annual net growth and removals of growing-stock, and growth-to-removals (G/R) ratio for major species on timberland, West Virginia, 2010.

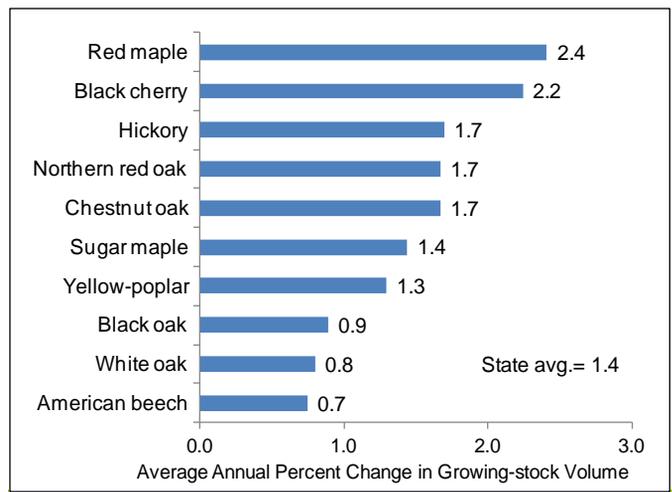


Figure 7. – Average annual net change, in growing-stock volume, as a percent of current inventory, by major species on timberland, West Virginia, 2010.

Citation for this Publication

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FIA Program Information

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.

Smith, W.B. 2002. Forest Inventory and Analysis: a national inventory and monitoring program. Environmental Pollution. 116: 233-242.

USDA Forest Service. 2005. Forest Inventory and Analysis national core field guide, Vol. 1, field data collection procedures for phase 2 plots, Ver. 3.0. Washington, DC: U.S. Department of Agriculture, Forest Service. Available at http://www.fia.fs.fed.us/library/field-guides-methods-proc/ (verified Aug. 1, 2008).

Additional West Virginia Inventory Information

Bones, J.T. 1978. The forest resources of West Virginia. Resour. Bull. NE-56. Broomall, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station. 105 p.

DiGiovanni, D.M. 1990. Forest statistics for West Virginia—1975 and 1989, Resour. Bull. NE-114. Radnor, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station. 172 p.

Ferguson, R.H. 1964. The timber resources of West Virginia. Resour. Bull. NE-2. Upper Darby, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station. 123 p.

Griffith, D.M.; Widmann, R.H. 2003. Forest statistics for West Virginia: 1989 and 2000. Resour. Bull. NE-157. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station. 119 p.

Widmann, R.H.; Dye, C.R.; Cook, G.W. 2007. Forests of the Mountain State. Resour. Bull. NRS-17. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 28 p.

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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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