



Virginia, 2010

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FOREST INVENTORY & ANALYSIS FACTSHEET



This science update is a brief look at some of the basic metrics that describe the status of forest resources in Virginia. Estimates presented here are for the measurement year 2010. Information for this factsheet is updated by means of the Forest Inventory and Analysis (FIA) annualized sample design. Virginia has about 4,600 sample plots across the State and each year 20 percent of these plots (one panel) are visited and measured by field crews, the data compiled, and new estimates produced. It is important that users keep in mind that in each year of new estimates, only 20 percent of the data are new, with the older data making up the remaining 80 percent of the sample. This may result in some spikes in estimates when comparing successive survey years, but in most instances the annualized design should give a reasonable indication of directional trends in the resource. After 5 years of measurements, the full sample complement (a cycle) is complete and a new survey cycle begins. The strongest and most reliable trend information (especially concerning magnitude of change) comes from comparing two full cycles of data.

This factsheet is based on data processed and posted on the FIA database (FIADB) on April 8, 2011 at <http://fia.fs.fed.us/tools-data/>. Definitions can be found in the FIADB users manual at <http://fia.fs.fed.us/tools-data/docs/default.asp>. Additional information concerning definitions and descriptive statistics can be found in the report Virginia's Forests, 2007 (RB-SRS-159) at <http://www.srs.fs.usda.gov/pubs/33513>.

Forest-Land Area

In 2010, about 15,867,900 acres, or 63 percent, of Virginia's land area was forested. This was a decrease of 220 acres since 2007, when forest-land area totaled 15,868,120 acres (table 1). At the survey unit level the Coastal Plain saw the biggest decrease (2.6 percent) and the Northern Mountains saw the biggest increase (1.8 percent).

Table 1—Area of forest land by survey unit and year, Virginia

Survey unit	2001	2007	2010	Change since 2007	
				acres	percent
Coastal Plain	3,820,412	3,784,039	3,683,973	-100,066	-2.64
Southern Piedmont	3,757,400	3,759,687	3,789,579	29,892	0.80
Northern Piedmont	2,507,124	2,518,897	2,510,034	-8,863	-0.35
Northern Mountains	2,725,635	2,728,903	2,777,568	48,665	1.78
Southern Mountains	3,098,922	3,076,594	3,106,745	30,151	0.98
All units	15,909,493	15,868,120	15,867,900	-220	0.00

Forest Distribution

The majority of counties in Virginia were at least 50 percent forested. The majority of the least forested counties were in the northern portion of the State, and along the coast (fig. 1).

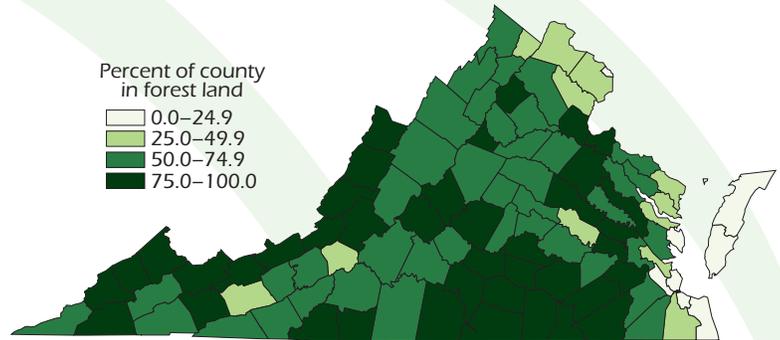
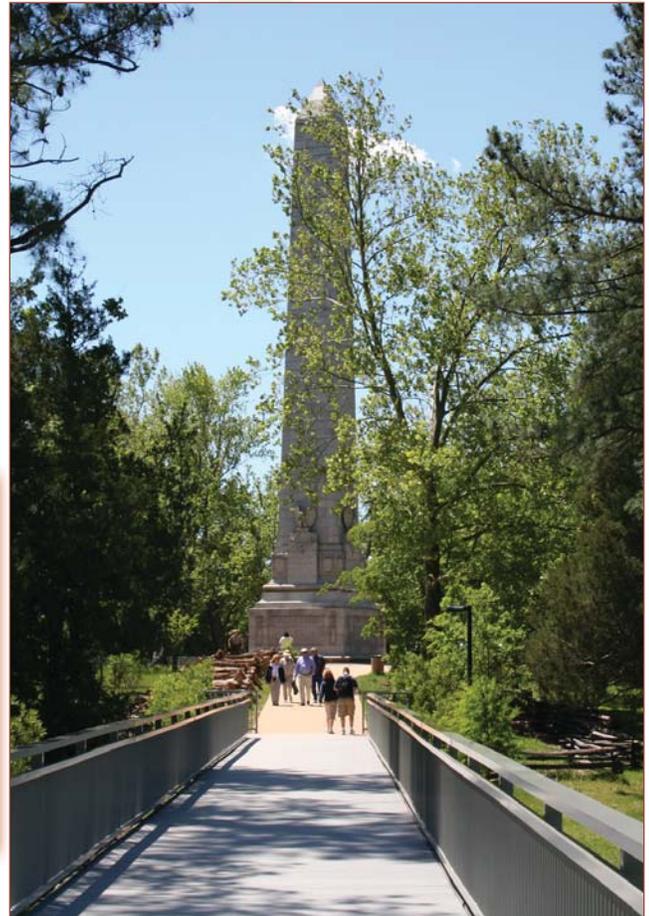


Figure 1—Percent of county in forest land, Virginia, 2010.

Jamestown Island Colonial National Historic Park. (photo by Anita Rose)





White Branch near Rose Hill, Virginia. (photo by Harold Jerrell, Lee County Virginia Cooperative Extension)

Forest-Type Group and Stand Size

The predominant forest-type group in Virginia was oak-hickory (table 2), occupying about 61 percent of the forest-land area. The loblolly-shortleaf pine group and the oak-pine group ranked second and third, respectively. Since 2007, the area of the oak-hickory and loblolly-shortleaf pine groups decreased by 1.4 and 1.6 percent, respectively, while that of the oak-pine group increased by 3.6 percent. Twenty-one percent of the loblolly-shortleaf pine group was in the small diameter stand-size class, while only 11 percent of the oak-hickory group was in this class (table 2). Overall the majority (63 percent) of forest land in Virginia was in the large diameter stand-sized class (table 2).

Table 2—Area of forest land by forest-type group and stand-size class, Virginia 2010

Forest-type group	All size classes	Stand-size class				Non-stocked
		Large diameter	Medium diameter	Small diameter		
<i>thousand acres</i>						
Softwood types						
White-red-jack pine	173.5	127.3	31.7	14.5	0.0	
Spruce-fir	7.6	7.6	0.0	0.0	0.0	
Loblolly-shortleaf pine	2,877.5	1,212.4	1,062.6	602.5	0.0	
Other eastern softwoods group	76.1	9.1	23.9	43.1	0.0	
Total softwoods	3,134.7	1,356.4	1,118.2	660.1	0.0	
Hardwood types						
Oak-pine	1,696.7	895.6	404.2	396.9	0.0	
Oak-hickory	9,726.2	6,836.6	1,790.4	1,099.2	0.0	
Oak-gum-cypress	381.8	292.0	42.2	47.6	0.0	
Elm-ash-cottonwood	394.4	270.5	75.9	48.1	0.0	
Maple-beech-birch	364.1	289.7	42.4	32.0	0.0	
Aspen-birch	4.3	0.0	4.3	0.0	0.0	
Other hardwoods group	28.9	15.3	13.6	0.0	0.0	
Exotic hardwood	41.2	0.0	9.1	32.1	0.0	
Total hardwoods	12,637.5	8,599.7	2,382.0	1,655.9	0.0	
Nonstocked	95.7	0.0	0.0	0.0	95.7	
All groups	15,867.9	9,956.1	3,500.2	2,316.0	95.7	

Numbers in rows and columns may not sum to totals due to rounding. 0.0 = no sample for the cell or a value of >0.0 but <0.05.

Ownership of the Forest

The majority (12,729,100 acres) of Virginia's forest land was in nonindustrial private forest ownership, an increase of 2.3 percent since 2007 (fig. 2). Public ownership ranked second with 2,873,100 acres. Forest industry owned 265,700 acres of forest land across the State, a decrease of 52 percent since 2007, and a decrease of 74 percent since the 2001 survey.

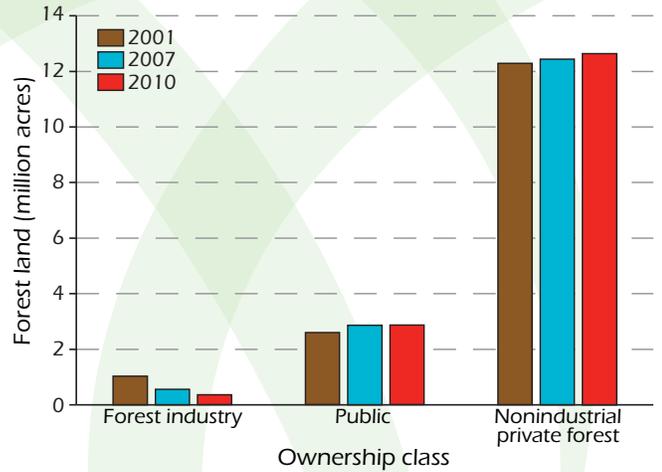


Figure 2—Area of forest land by ownership class and survey year, Virginia.

Tree Volume

Volume of live trees ≥ 5.0 inches diameter at breast height (d.b.h.) increased from 33.1 to 34.7 billion cubic feet, a 5-percent change since 2007 (fig. 3). Softwoods made-up 23 percent of the live volume and hardwoods 77 percent. Hardwoods saw a 5-percent increase in volume (25.5 to 26.8 billion cubic feet), and softwoods saw a 3.5-percent increase (7.6 to 7.9 billion cubic feet).



Dwarf crested iris in flower near Hardy's Creek, Lee County, Virginia. (photo by Harold Jerrell, Lee County Virginia Cooperative Extension)

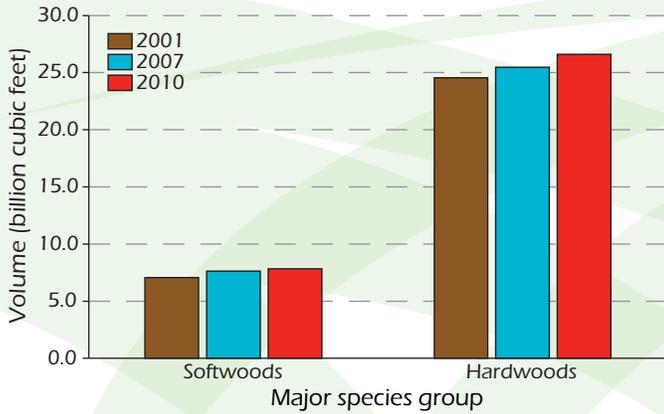


Figure 3—Volume of live trees ≥ 5.0 inches d.b.h. on forest land by major species group and survey year, Virginia.

Top Species for Number of Trees

Red maple continued to dominate in terms of number of live trees ≥ 1.0 inches d.b.h. with 1.4 billion stems, a decrease of 1 percent since 2007 (table 3). Loblolly pine was second, with 1.2 billion stems. Eight of the top 20 species saw a decrease in number of trees between 2007 and 2010. The most notable decrease in number of trees occurred in dogwoods, which declined by nearly 23 percent. This trend deserves watching, as number of dogwood trees decreased by 33 percent between 2001 and 2007. Loblolly pine and American holly saw the largest percent increases (10.4 and 11.4 percent, respectively) in number of trees. The top 20 species, 3 of which were oaks, accounted for 80 percent of the live trees.

Table 3—Top 20 tree species dominant for number of trees ≥ 1.0 -inch d.b.h. on forest land by survey year, Virginia

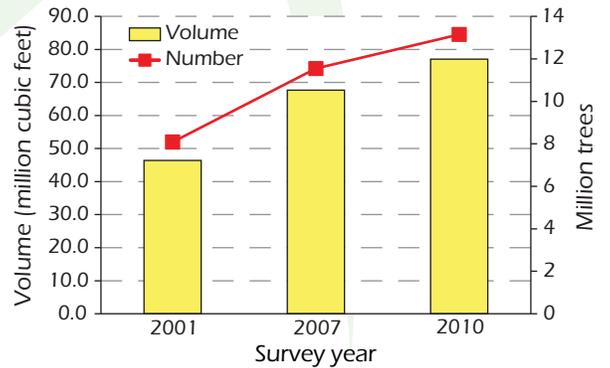
Species	2001	2007	Change from		2010	Change from
			2001	2010		
	-- million trees --		percent	million trees	percent	trees
Red maple	1,468.9	1,442.9	-1.8	1,429.7	-0.9	
Loblolly pine	978.1	1,053.5	7.7	1,162.9	10.4	
Yellow-poplar	766.2	856.2	11.7	891.6	4.1	
Sweetgum	755.7	694.8	-8.1	744.8	7.2	
Blackgum	643.2	631.9	-1.8	638.1	1.0	
Virginia pine	491.4	496.6	1.1	484.5	-2.4	
American holly	335.3	433.5	29.3	482.8	11.4	
White oak	463.9	444.1	-4.3	420.2	-5.4	
Chestnut oak	359.5	366.8	2.0	355.4	-3.1	
Sourwood	316.6	329.2	4.0	310.6	-5.7	
American hornbeam	246.7	290.3	17.7	298.2	2.7	
Eastern redcedar	232.7	253.3	8.8	265.5	4.8	
Flowering dogwood	500.2	333.4	-33.3	258.0	-22.6	
American beech	206.7	217.1	5.0	233.8	7.7	
Black cherry	219.0	208.0	-5.0	211.8	1.8	
Mockernut hickory	230.9	198.7	-14.0	198.7	0.0	
Pignut hickory	163.7	185.9	13.6	186.5	0.3	
Eastern white pine	178.8	172.9	-3.4	175.9	1.8	
Scarlet oak	156.9	163.9	4.5	159.8	-2.5	
Sugar maple	140.4	161.5	15.0	154.4	-4.4	
Total (top 20)	8,854.9	8,934.4	0.9	9,063.3	1.4	
Total all species	11,164.1	11,288.7	1.1	11,391.9	0.9	

d.b.h. = diameter at breast height.

Invasive Plants

Tree-of-heaven (or *Ailanthus*) continued to be the most commonly occurring invasive tree in Virginia. Since 2007, the number of trees and the volume of this species have increased by 14.0 and 14.8 percent, respectively (fig. 4). Paulownia, another invasive tree, also had increases in number of trees ≥ 5.0 inches d.b.h. (from 1.4 to 2.0 million) and volume (9.8 to 14.1 million cubic feet).

(A) *Ailanthus*



(B) Paulownia

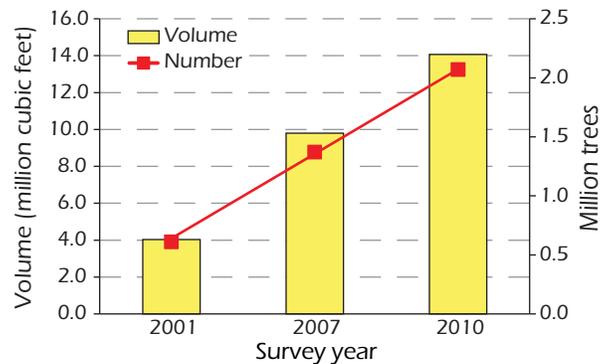


Figure 4—Volume and number of trees (≥ 5.0 inches d.b.h.) of (A) *ailanthus* and (B) *paulownia* on forest land by survey year, Virginia.

Number of Trees by Diameter Class

Sixty percent of the live trees in Virginia were in the 2-inch size class and 17 percent in the 4-inch size class (table 4). Planted stands had a higher number of trees per acre in the four smallest size classes than were in the naturally regenerated stands (table 5). Number of trees per acre in planted stands increased in all size classes with the exception of the 6- and 8-inch classes.

Table 4—Total number of live trees on forest land by survey year and diameter class, Virginia

Survey year	Diameter class (inches)											Total
	2	4	6	8	10	12	14	16	18	20	22+	
	<i>million trees</i>											
2001	6,683.0	1,936.9	940.7	614.6	380.0	234.4	152.8	92.4	57.3	31.1	41.1	11,164.1
2007	6,797.6	1,930.6	910.9	618.6	386.5	244.0	156.2	101.9	61.3	34.4	46.5	11,288.7
2010	6,878.2	1,938.5	901.8	607.0	387.5	253.7	161.6	106.8	66.1	38.4	52.2	11,391.9

Table 5—Number of live trees per acre on forest land by stand origin, survey year, and diameter class, Virginia

Stand origin and survey year	Diameter class (inches)							Total
	2	4	6	8	10	12	13+	
	<i>trees per acre</i>							
Natural								
2001	384.7	113.9	53.4	35.4	23.4	15.4	26.1	652.4
2007	393.0	116.6	52.3	34.9	23.3	15.9	28.4	664.5
2010	389.0	115.9	51.9	34.3	23.3	16.3	30.2	660.9
Planted								
2001	650.3	172.8	96.3	59.6	27.2	10.2	7.1	1,023.4
2007	627.8	150.1	86.3	61.8	30.3	12.5	7.5	976.2
2010	674.1	155.9	83.5	59.8	30.4	14.3	8.5	1,026.6

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Powell River, as seen here at Beech Grove, flows through Lee and Wise County Virginia (photo by Harold Jerrell, Lee County Virginia Cooperative Extension)

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