Virginia, 2009

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FOREST INVENTORY & ANALYSIS FACTSHEET

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This science update is a brief look at some of the basic metrics that describe forest resources in Virginia. Estimates presented here are for the measurement year 2009. Information for the 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. Users should 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, such as increasing, decreasing, or no change. 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 that 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 January 28, 2011, and updated on April 8, 2011, at http://fia.fs.fed.us/tools-data/. Definitions can be found in the FIADB user's 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 2009, about 15,858,483 acres, or 63 percent, of Virginia's land area (not including census water) was forested. This was a slight decrease since 2007 when forest land area totaled 15,868,120 acres (table 1). Not all survey units saw a loss of forest land, however. The Northern Piedmont and both the Northern and Southern Mountains saw small increases in forest land.

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

Survey unit	2001	2007	2009	Change since 2007
		acres		*percent*
Coastal Plain	3,820,412	3,784,039	3,730,332	-1.42
Southern Piedmont	3,757,400	3,759,687	3,747,004	-0.34
Northern Piedmont	2,507,124	2,518,897	2,522,992	0.16
Northern Mountains	2,725,635	2,728,903	2,756,828	1.02
Southern Mountains	3,098,922	3,076,594	3,101,327	0.80
All units	15,909,493	15,868,120	15,858,483	-0.06

Forest Distribution

The majority of counties 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).

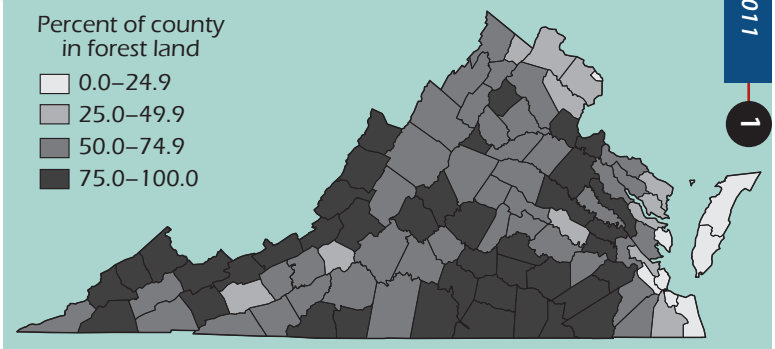

Figure 1—Percent of county area in forest land, Virginia, 2009.

Big Cedar Creek near confluence with Clinch River, Pinnacle Natural Area Preserve, Russell County, VA. (photo by Anita Rose)

Forest-Type Group

The predominant forest-type group in Virginia was oak-hickory (fig. 2). It occupied about 62 percent of the forest land area. The loblolly-shortleaf pine group and the oak-pine group ranked second and third. These figures represent only very small changes since 2007.

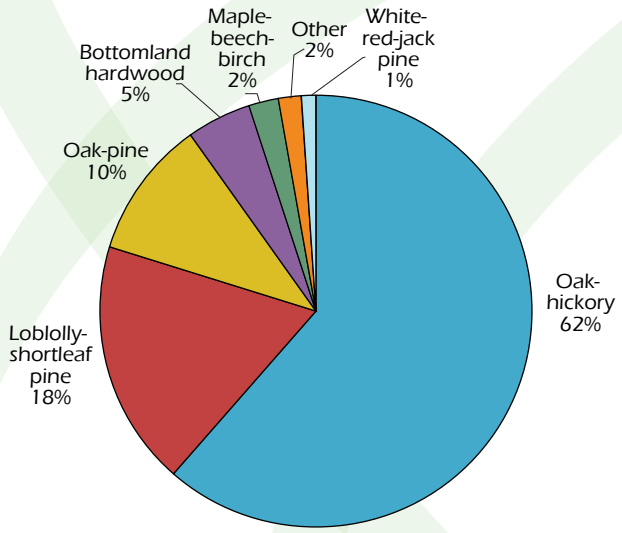

Figure 2—Percentage of forest land by forest-type group, Virginia, 2009.

Maidenhair fern. (photo by Anita Rose)

Ownership of the Forest

The majority (12,639,637 acres) of Virginia's forest land was in nonindustrial private forest ownership, an increase of 1.6 percent since 2007 (fig. 3). Public ownership ranked second with 2,866,332 acres. Forest industry owned 352,514 of forest land across the State, a decrease of 37 percent.

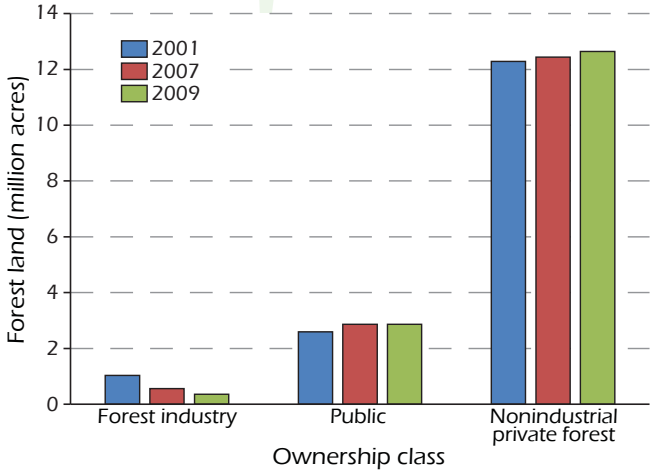

Figure 3—Area of forest land by ownership class and survey year, Virginia.

Tree Volume

Volume of live trees ≥ 5.0 inches diameter at breast height (d.b.h.) on forest land increased from 33.1 to 34.3 billion cubic feet, a 4-percent increase since 2007 (fig. 4). Softwoods made up 22 percent of the live volume and hardwoods 78 percent. While hardwoods saw a 4-percent increase in volume (from 25.5 to 26.6 billion cubic feet), softwoods only saw a 1-percent increase (from 7.6 to 7.7 billion cubic feet). Thirty-six percent of the volume of hardwoods was in trees >16.9 inches d.b.h., while only 15 percent of the volume of softwoods was in trees of that size.

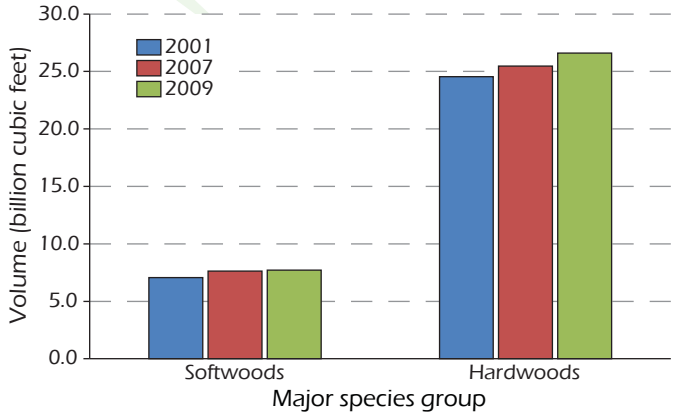

Figure 4—Volume of live trees ≥ 5.0 inches d.b.h. on forest land by major species group and survey year, Virginia.

Top Species for Volume

Yellow-poplar continued to dominate the State's live-tree volume with 5.4 billion cubic feet, an increase of 6 percent since 2007 (table 2). Loblolly pine was second, with 4.4 billion cubic feet. Only 2 of the top 20 species (Virginia pine and shortleaf pine) saw a decrease in volume between 2007 and 2009. The top 20 species, 6 of which were oaks, accounted for 88 percent of the live-tree volume.

Table 2—Top 20 tree species dominant for volume (≥ 5.0 inches d.b.h.) on forest land by survey year, Virginia

Species	2001	2007	Change from 2001	2009	Change from 2007
	million cubic feet		*percent*	*million cubic feet*	*percent*
Yellow-poplar	4,581.3	5,045.7	10.1	5,364.0	6.3
Loblolly pine	3,653.1	4,261.3	16.6	4,448.9	4.4
Chestnut oak	2,954.0	3,103.5	5.1	3,243.9	4.5
White oak	2,877.0	2,996.1	4.1	3,084.9	3.0
Red maple	2,202.7	2,270.2	3.1	2,332.1	2.7
Northern red oak	1,732.3	1,649.0	-4.8	1,734.8	5.2
Virginia pine	1,534.1	1,488.2	-3.0	1,363.9	-8.4
Sweetgum	1,122.1	1,137.1	1.3	1,174.1	3.2
Scarlet oak	1,083.7	1,043.2	-3.7	1,073.7	2.9
Black oak	972.9	1,024.5	5.3	1,037.9	1.3
Eastern white pine	707.8	774.9	9.5	840.0	8.4
Pignut hickory	669.1	669.6	0.1	696.6	4.0
Mockernut hickory	636.4	614.3	-3.5	629.5	2.5
Southern red oak	523.6	577.1	10.2	610.1	5.7
American beech	540.2	576.8	6.8	609.8	5.7
White ash	386.9	377.6	-2.4	419.4	11.1
Sugar maple	357.7	378.4	5.8	408.5	7.9
Blackgum	376.2	390.5	3.8	399.8	2.4
Sweet birch	285.8	281.4	-1.5	298.9	6.2
Shortleaf pine	376.1	308.0	-18.1	278.2	-9.7
Total (top 20)	27,573.3	28,967.4	5.1	30,049.0	3.7
Total all species	31,602.5	33,095.8	4.7	34,317.0	3.7

Invasive Plants

Tree-of-heaven (or Ailanthus) continued to be the most commonly occurring invasive tree in Virginia. Since 2007, both the number of trees and the volume of this species have increased by 14 percent (fig. 5). 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 (from 9.8 to 13.8 million cubic feet).

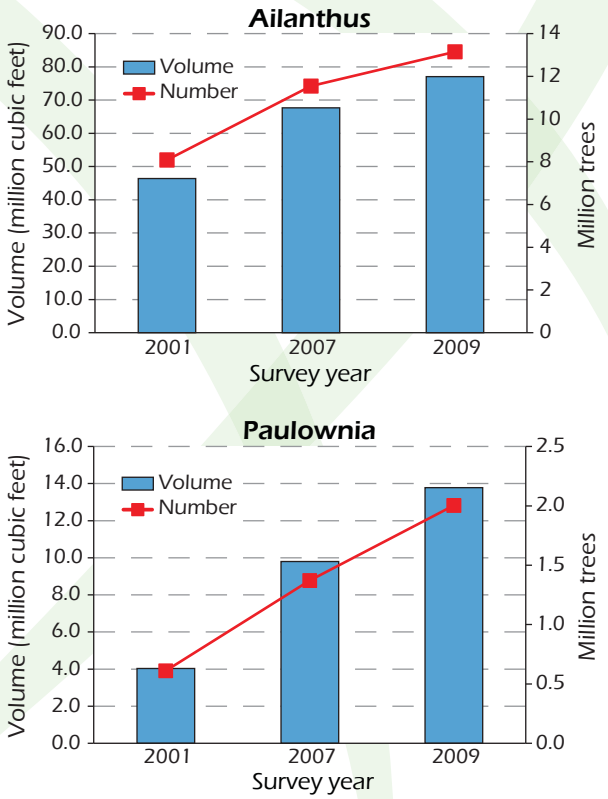

Figure 5—Volume and number of trees (≥ 5.0 inches d.b.h.) of ailanthus and paulownia on forest land by survey year, Virginia.

Christmas tree plantation along the Virginia Creeper Trail in southwest Virginia. (photo by Anita Rose)

Average Annual Net Growth, Removals, and Mortality

Overall, net growth on timberland increased slightly between 2007 and 2009 (table 3). At the unit-level, growth increased by 67 and 24 percent in the Northern and Southern Mountains, respectively. The Southern Piedmont saw the largest decrease in net growth, falling from 293.3 to 239.2 million cubic feet per year. This was a continuation of the drop in growth in hardwoods in this unit that occurred between 2001 and 2007. For softwoods, even with the drop from 131.35 to 110.65 million cubic feet per year, growth was still more than what it was in 2001, when it was 106.0 million cubic feet per year. This unit was the only one where removals exceeded net growth.

Table 3—Average net annual growth, removals, and mortality of all-live trees on timberland by inventory year, survey unit, and major species group, Virginia

Inventory year and survey unit	Net growth			Removals			Mortality		
	Soft-woods	Hard-woods	Total	Soft-woods	Hard-woods	Total	Soft-woods	Hard-woods	Total
	million cubic feet								
2001									
Coastal Plain	176.05	149.97	326.02	135.31	112.09	247.40	29.09	33.72	62.81
Southern Piedmont	105.95	165.39	271.34	91.67	120.67	212.34	31.20	35.57	66.77
Northern Piedmont	32.72	117.38	150.10	44.41	49.38	93.79	19.52	45.29	64.81
Northern Mountains	-1.96	80.16	78.20	7.84	37.53	45.37	25.77	45.57	71.34
Southern Mountains	14.17	150.66	164.83	19.51	79.55	99.06	14.21	54.01	68.22
Total	326.93	663.56	990.50	298.73	399.23	697.96	119.79	214.17	333.96
2007									
Coastal Plain	176.53	121.56	298.09	178.12	138.36	316.47	38.25	55.01	93.25
Southern Piedmont	131.35	161.95	293.30	92.21	95.61	187.82	23.22	30.86	54.07
Northern Piedmont	42.69	114.86	157.55	31.45	90.39	121.84	9.95	36.58	46.52
Northern Mountains	15.41	65.01	80.41	6.08	52.94	59.02	10.60	33.25	43.85
Southern Mountains	10.87	150.00	160.86	11.82	81.96	93.78	16.74	31.82	48.56
Total	376.84	613.37	990.21	319.67	459.27	778.93	98.74	187.51	286.26
2009									
Coastal Plain	169.07	129.22	298.28	153.13	91.04	244.17	45.12	59.82	104.94
Southern Piedmont	110.65	128.57	239.22	114.28	91.31	205.59	23.56	33.92	57.48
Northern Piedmont	36.15	118.68	154.83	26.15	57.44	83.59	17.56	35.11	52.68
Northern Mountains	18.69	114.55	133.24	4.56	28.48	33.05	10.24	26.60	36.83
Southern Mountains	19.43	179.59	199.02	16.33	69.16	85.50	9.20	31.50	40.70
Total	353.99	670.61	1,024.60	314.45	337.44	651.89	105.69	186.94	292.63

How to Cite This Publication

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Big Creek near confluence with Clinch River, Pinnacle Natural Area Preserve, Russell County, VA. (photo by Anita Rose)

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