



Virginia, 2007

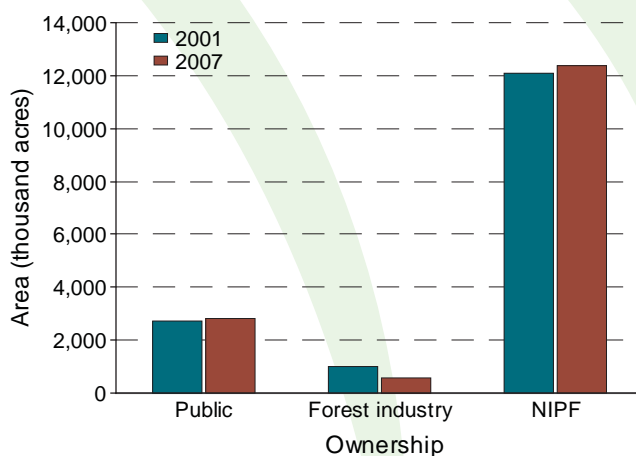
FOREST INVENTORY & ANALYSIS FACTSHEET



Forest Ownership

The majority (12,375,300 acres) of Virginia's forest land was in nonindustrial private forest (NIPF) ownership, an increase of 2.3% since 2001. Public ownership ranked second with 2,798,400 acres. Forest industry owned 551,200 of forest land across the State, a decrease of 46%.

Ownership of forest land



Forest Land Area

In 2007, about 15,724,800 acres, or 62%, of Virginia's land area was forested. This was a slight decrease since 2001 when forest land area totaled 15,844,000 acres.

Area of forest land by survey unit and year

| Survey unit | 2001 | 2007 | Change percent |
|--------------------|----------------|----------|-------------------|
| | thousand acres | | |
| Coastal Plain | 3,817.7 | 3,701.0 | -3.1 |
| Southern Piedmont | 3,784.1 | 3,741.7 | -1.1 |
| Northern Piedmont | 2,405.1 | 2,502.9 | 4.1 |
| Northern Mountains | 2,744.3 | 2,713.5 | -1.1 |
| Southern Mountains | 3,092.9 | 3,065.6 | -0.9 |
| All units | 15,844.0 | 15,724.8 | -0.8 |

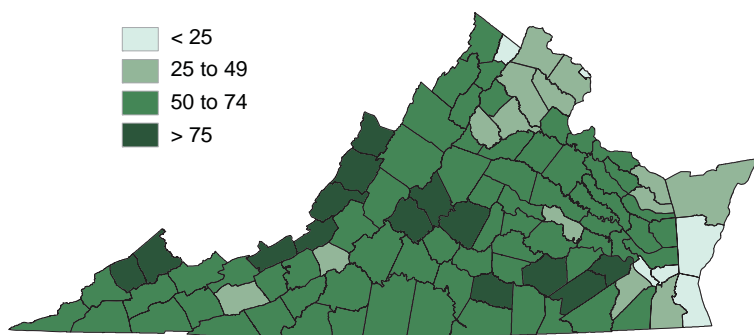
Tree Volume

Volume of live trees ≥ 5.0 inches d.b.h. increased from 31.5 to 32.8 billion cubic feet. Softwoods made up 23% of the live volume and hardwoods 77%. Thirty-four percent of the volume of hardwoods was in trees > 16.9 inches d.b.h., while only 14% of the volume of softwoods was in trees of that size. Nearly 70% of the volume of softwoods was in the Coastal Plain and Southern Piedmont.

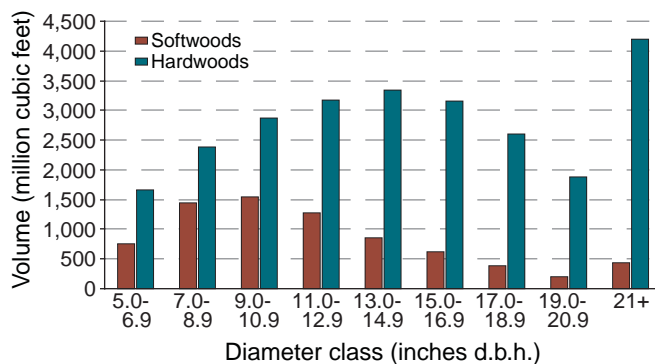
Forest Distribution

Over 49 percent of the land area in the majority of counties was forested.

Percentage of land in forest by county



Live volume of softwoods and hardwoods on forest land by diameter class

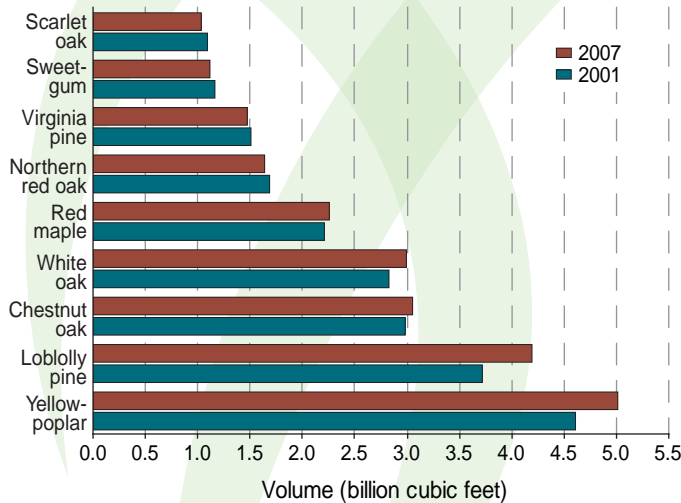


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Top 10 Species for Volume

Yellow-poplar continued to dominate the State's live-tree volume with 5.0 billion cubic feet, an increase of 9% since 2001. Loblolly pine was second, with 4.2 billion cubic feet. The top 10 species, 4 of which were oaks, accounted for 69% of the live-tree volume.

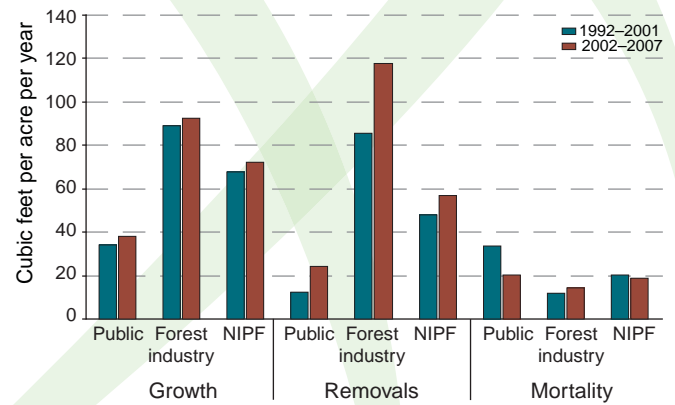
Top 10 species for volume on forest land



Average Annual Net Growth, Removals, and Mortality

At 92.4 ft³/acre/year net growth was highest on forest industry land. Net growth increased on NIPF land from 67.7 to 72.1 ft³/acre/year, and on public land increased from 34.0 to 38.0 ft³/acre/year. Rates of removals were highest on forest industry lands, where they increased by 38% to 117.9 ft³/acre/year. Removals doubled on public lands, and increased by 19% on NIPF land. Per-acre mortality decreased on public land by 39%. On forest industry land mortality increased by 20% and on NIPF land, mortality decreased by 7%. Growth exceeded removals in all units except for the Coastal Plain, the area most heavily impacted by Hurricane Isabel.

Growth, removals, and mortality by owner

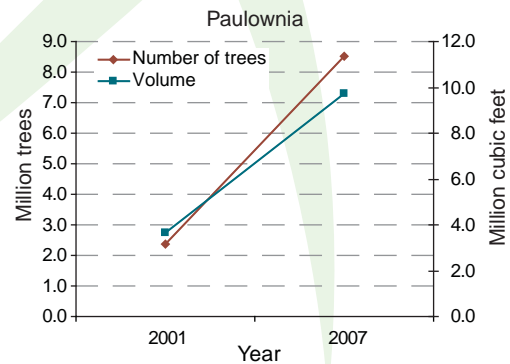
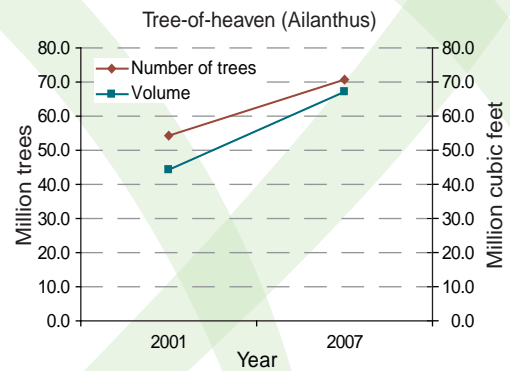


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Invasive Plants

Tree-of-heaven (or *Ailanthus*), the most commonly occurring invasive tree in Virginia, occurred predominately along the western edge of the Northern Piedmont. Since the last survey, the number of trees of this species has increased by 30%, and the volume has increased by 52%. Paulownia, another invasive tree, also had increases in number of trees (from 2.4 million to 8.5 million) and volume (3.6 mcf to 9.7 mcf).

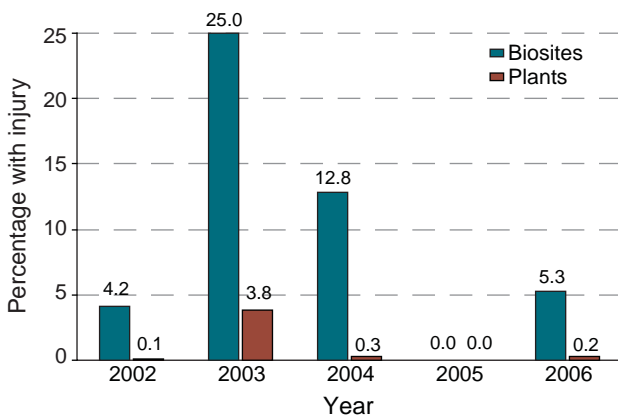
Change in number of trees and volume



Ozone-Induced Foliar Injury

During the 2007 survey, 15,016 plants from various locations in Virginia (biosites) were evaluated. The majority of injury occurred in 2003, when 3.8% of plants on 25.0% of biosites had injury. No injury was detected in 2005.

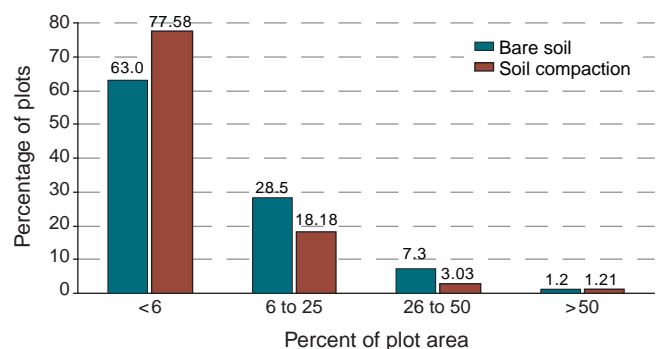
Percentage of biosites and ozone bioindicator plants with ozone-induced foliar injury, by year



Soils

Only 22% of forest health (P3) plots in Virginia had soil compaction on more than 5% of the plot area. More than 5% of the plot area was bare soil on just over one-third of the plots.

Distribution of bare soil and compaction on forest health plots by percent of plot area



Down Woody Debris

Biomass of coarse woody debris and fine woody debris on P3 plots averaged 2.9 tons per acre and 3.5 tons per acre, respectively, for the State. The Coastal Plain had both the highest average amount of fine woody debris and the lowest average amount of coarse woody debris.

Fuel loadings on P3 plots by survey unit and fuel class, Virginia, 2007

| Survey unit | Plots <i>n</i> | FWD | | | Total | CWD |
|--------------------|-------------------|--------------------|------------|-------------|-------|---------------|
| | | 1- hr. | 10- hr. | 100- hr. | | 1,000- hr. |
| | | ----- tons/acre | | | ----- | |
| Coastal Plain | 38 | 0.2 | 0.9 | 3.0 | 4.1 | 2.4 |
| Southern Piedmont | 41 | 0.2 | 0.8 | 2.0 | 3.0 | 2.7 |
| Northern Piedmont | 27 | 0.1 | 0.7 | 2.5 | 3.3 | 2.6 |
| Northern Mountains | 28 | 0.2 | 0.8 | 2.5 | 3.4 | 3.5 |
| Southern Mountains | 27 | 0.2 | 0.7 | 2.7 | 3.7 | 3.4 |
| All | 161 | 0.2 | 0.8 | 2.5 | 3.5 | 2.9 |

FWD = fine woody debris; CWD = coarse woody debris.

Sampling Error

Sampling error is associated with the natural and expected deviation of the sample from the true population mean. Sampling errors for State totals are based on one standard deviation. That is, there is a 68.27% probability that the confidence interval given for each sample estimate will cover the true population mean. For specific post-defined strata the sampling error can be calculated using the following formula. Sampling errors obtained by this method are only approximations of reliability because this process assumes constant variance across all subdivisions of totals.

$$SE_s = SE_t \frac{\sqrt{X_t}}{\sqrt{X_s}}$$

where

SE_s = sampling error for subdivision of survey unit or State total

SE_t = sampling error for survey unit or State total

X_s = sum of values for the variable of interest (area or volume) for subdivision of survey unit or State

X_t = total area or volume for survey unit or State

Statistical reliability for Virginia, 2007

| Item | Sample estimate and 68.27 percent confidence interval | Sampling error percent |
|---------------------------------------------|-------------------------------------------------------------|------------------------------|
| Forest land (1,000 acres) | 15,724.8 ± 105.4 | 0.7 |
| All live volume on forest land ^a | 32,812.1 ± 436.4 | 1.3 |
| All live volume on timberland ^a | 31,698.7 ± 440.6 | 1.4 |
| Net annual growth | 1,030.4 ± 30.6 | 3.0 |
| Annual removals | 827.5 ± 59.7 | 7.2 |
| Annual mortality | 286.0 ± 13.1 | 4.6 |

^a Million cubic feet.



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