



FORESTS OF Georgia, 2016

This resource update provides an overview of forest resources in Georgia based on an inventory conducted by the U.S. Forest Service, Forest Inventory and Analysis (FIA) program, the Southern Research Station (SRS) in cooperation with the Georgia Forestry Commission. Estimates are based on field data collected using the FIA annualized sample design and are updated yearly. The estimates presented in this update are for the measurement year 2016 with comparisons made to data reported in 2015 and prior years.

Data collected in 2016 consisted of 974 plots out of 4,907 forest plots, or about 20 percent of the sample population. Each year 20 percent of the sample plots are measured (one panel), in Georgia. These plots are measured by field crews, then the data is compiled, processed, and new estimates are produced. After 5 years of measurement, a full sample (a cycle) is complete and a new survey begins.

The full dataset represented in this update includes 2 panels of cycle 11 (2015 and 2016) combined with 3 panels of cycle 10. The data used in this publication were accessed from the FIA database in August, 2018 (<http://fia.fs.fed.us/tools-data/>).

Overview

Forest land area remained relatively constant in 2016, repeating findings from previous updates (Brandeis and others 2016). Forest area in 2016 totaled 24.6 million acres, a decrease of 70,124 acres (table 1). The number of live trees and net growth decreased by < 1 percent, while net volume, live biomass, removals and mortality, all increased by > 1 percent.

Nearly 98 percent of this forest is not specifically reserved by law and is therefore potentially available for timber harvest.

Table 1—Georgia forest statistics, change between 2015 and 2016

Forest statistics	2015 estimate	Sampling error (percent)	2016 estimate	Sampling error (percent)	Change since 2015
Forest land					
Area (<i>thousand acres</i>)	24,634.9	0.51	24,564.8	0.52	-70.1
Number of live trees ≥ 1 inch d.b.h. (<i>million trees</i>)	14,961.4	1.33	14,802.5	1.34	-159.0
Net volume live trees ≥ 5 inches d.b.h. (<i>million cubic feet</i>)	44,245.5	1.08	44,863.9	1.09	618.5
Live trees aboveground biomass (<i>thousand oven-dry tons</i>)	1,096,988.0	0.97	1,109,465.7	0.98	12,477.6
Net growth live trees ≥ 5 inches d.b.h. (<i>million cubic feet per year</i>)	1,988.9	1.66	1,976.6	1.67	-12.3
Annual removals of live trees ≥ 5 inches d.b.h. (<i>million cubic feet per year</i>)	1,374.7	3.99	1,376.2	4.00	1.5
Annual mortality of live trees ≥ 5 inches d.b.h. (<i>million cubic feet per year</i>)	451.1	4.07	473.4	3.96	22.2
Timberland					
Area (<i>thousand acres</i>)	24,061.0	0.54	23,990.8	0.54	-70.2
Number of live trees ≥ 1 inch d.b.h. (<i>million trees</i>)	14,670.6	1.34	14,511.3	1.35	-159.3
Net volume live trees ≥ 5 inches d.b.h. (<i>million cubic feet</i>)	43,254.5	1.12	43,865.4	1.12	610.9
Live trees aboveground biomass (<i>thousand oven-dry tons</i>)	1,071,837.3	1.00	1,084,079.6	1.01	12,242.3
Net growth live trees ≥ 5 inches d.b.h. (<i>million cubic feet per year</i>)	2,012.4	1.56	2,001.7	1.56	-10.7
Annual removals of live trees ≥ 5 inches d.b.h. (<i>million cubic feet per year</i>)	1,374.2	3.99	1,375.3	4.00	1.1
Annual mortality of live trees ≥ 5 inches d.b.h. (<i>million cubic feet per year</i>)	398.8	3.55	420.1	3.45	21.3



Forest Area

Georgia is divided into five survey units (subdivisions of the State based on a combination of ecological regions and political boundaries shown in figure 1). As of 2016, the Southeast and Central units hold the most forest land (fig. 2). The Southeast, Central and North survey units have the highest percent forest cover (74, 73 and 70 percent, respectively), while the Southwest and North Central survey units have the lowest (53 and 52 percent, respectively).



Figure 1—Counties and forest survey units in Georgia.

Between 2015 to 2016, very little change in forest land area has occurred (< 1 percent plus or minus, respectively) was detected in all units.

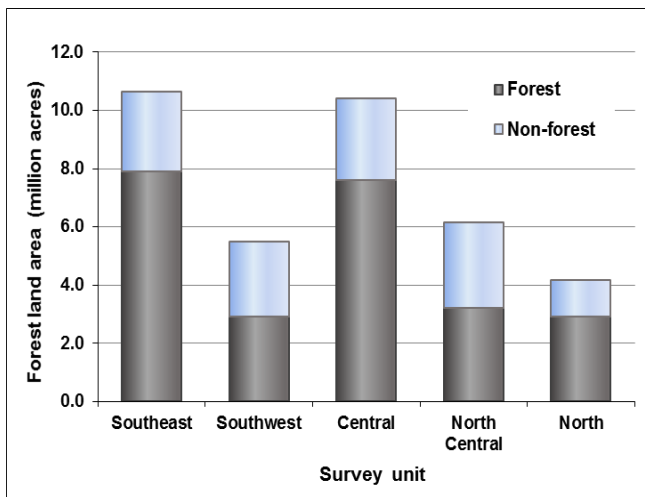


Figure 2—Forest land area (minus census water) and survey unit.

The area of large-diameter forest stands in Georgia are still increasing while the area of medium- and small-diameter stands has been decreasing (fig. 3). As stated in previous resource updates, this is primarily a reflection of the aging of stands that were planted in the 1980s and early 1990s as part of the Conservation Reserve Program and other efforts. Large-diameter stands now account for 41.2 percent, medium-diameter stands account for 28.7 percent, and small-diameter stands accounts for 30.1 percent of the land in Georgia. This is a slight increase from 2015.

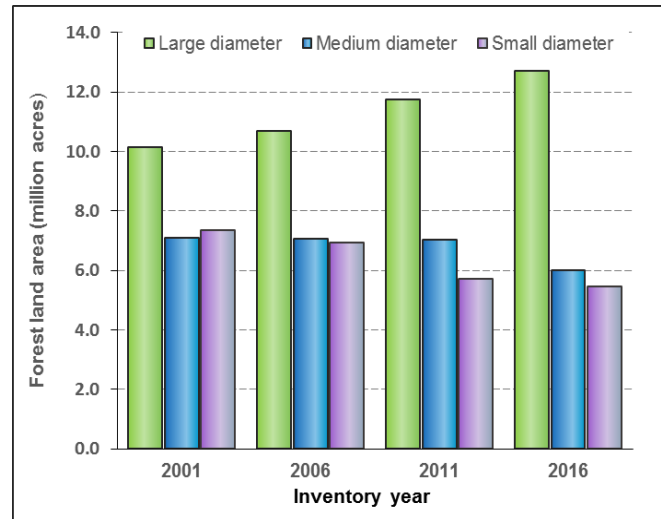


Figure 3—Forest land area by stand size class and inventory year, Georgia.

The forests of Georgia are getting older. Stands in the 1-5 year old class have decreased 32 percent over the last 15 years, while forests in the 31-35 year class have increased 49 percent over the same period (fig. 4).

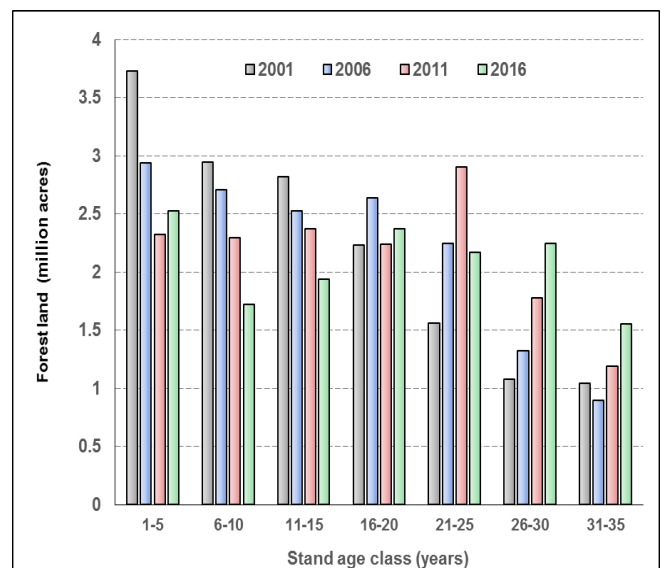


Figure 4—Forest land area by stand age class and inventory year, Georgia.

Volume, Biomass, and Trends

Estimated aboveground live-tree biomass on forest land increased over 1 percent between 2015 and 2016 to 1.0 billion dry tons (table 1). Volume of all-live trees with a diameter at breast height (d.b.h.) ≥ 5 inches on forest land in 2016 reached an estimated 45 billion cubic feet, a 1 percent increase compared to 2015 estimates (table 1).

Based on total number of trees with d.b.h. ≥ 5 inches, loblolly pine was the most common tree species in 2016, accounting for 33 percent of all-live trees on forest land (table 2). Loblolly pine also ranked first in terms of standing volume representing 31 percent of the total volume from all-live trees on forest land. Slash pine ranked second in standing volume and number of trees, followed by sweetgum.

Table 2—Number and volume of all-live trees on forest land with d.b.h. ≥ 5 inches, Georgia 2016

Species	Number	Volume
	<i>million trees</i>	<i>million cubic feet</i>
Loblolly pine	1,213	14,125
Slash pine	486	4,586
Sweetgum	263	2,818
Swamp tupelo	170	2,746
Yellow-poplar	120	1,939
Water oak	159	1,927
White oak	86	1,649
Red maple	164	1,481
Laurel oak	72	1,197
Chestnut oak	57	1,126
Other	898	11,271
Total	3,687	44,864

Overall, volume was distributed almost equally across softwood and hardwood species groups. Standing volume, for both softwoods and hardwoods, is found primarily in the large diameter stand-size class (fig. 5). Volume in the large diameter stand-size class trended upwards from 2006 to 2016, while volume in the medium diameter stand-size class decreased slightly. Volume in the small diameter stand-size also decreased for both species groups, with softwood and hardwood volumes close to 13 percent and 27 percent lower in 2016 compared to 2006 estimates, respectively.

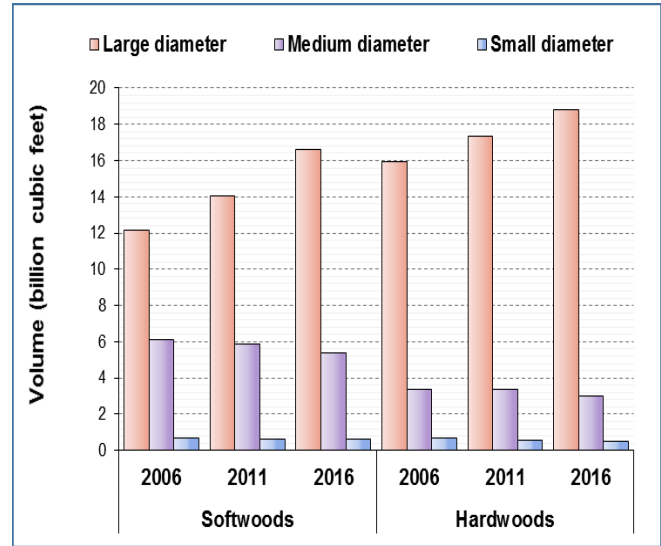


Figure 5—Volume for softwoods and hardwoods, by stand-size, class, and inventory year, Georgia.

Growth, removals, and mortality estimates provide a measure of inventory change. Softwoods species average annual net growth trended upwards, with removals increasing between 2006 and 2011 and decreasing from 2011 to 2016 (fig. 6). Hardwoods species display a drop in annual net growth with removals decreasing from 2006 to 2011 and continue slightly between 2011 and 2016. Average annual mortality trended upwards in both species groups.

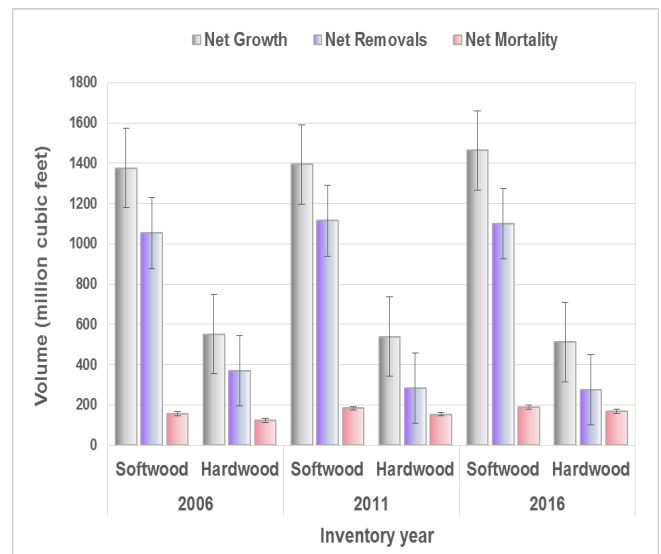


Figure 6—Average annual volume net growth, removals and mortality (mortality has been subtracted from net growth) on forest land by species group and inventory year, Georgia.

Special Topic: Thousand Cankers Disease Potential Impact on Georgia Forests

Thousand cankers disease (TCD) is a disease complex that quickly kills eastern black walnut (*Juglans nigra* L.). Until the year 2010, TCD had been limited to the Western United States; however, TCD poses a serious threat in the Eastern United States (fig. 7).

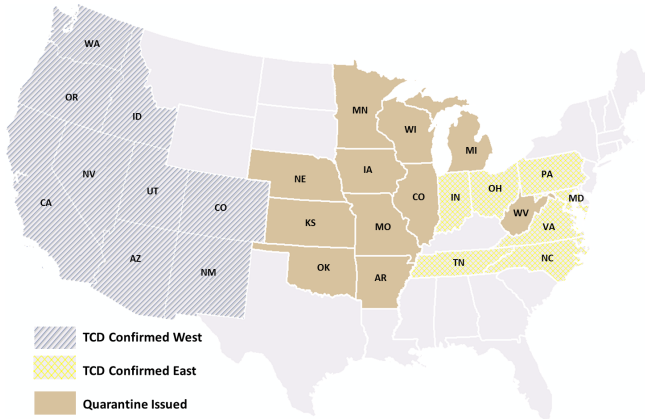


Figure 7—Distribution of thousand cankers disease, April 2016.

Native to the Southwestern United States, TCD is spread by the walnut twig borer (WTB), a tiny insect (*Pityophthorus juglandis*) that carries a fungus (*Geosmithia morbida*) that causes numerous cankers that develop under the bark of the host tree.

Early symptoms of TCD include leaf yellowing, wilting, dieback at the top of the crown, and branch mortality (fig. 8). Once infected, black walnut trees typically die within 2 to 3 years. WTB/TCD has not been found in Georgia yet, but recent discoveries in the Eastern United States suggest that its establishment in Georgia is possible.

Currently, the USDA, Animal and Plant Health Inspection Service (APHIS), Forest Service, and others, have been setting traps in many States including Georgia (fig. 9). You can access this website to view the current progress of this effort (<https://www.fs.fed.us/foresthealth/applied-sciences/mapping-reporting/gis-spatial-analysis/tcd-survey-maps.shtml>). To assist in the early detection of the disease, citizen's and individual landowners are encouraged to track the condition of black walnuts on their property or public lands. If you think there is a possible TCD infestation,



Figure 8—Yellowing foliage is symptomatic of the TCD disease complex spread by the walnut twig borer (inset left) and resulting in numerous cankers underneath the bark (inset right). (photo courtesy of www.thousandcankers.com).

please contact your local Georgia Forestry Commission office immediately (<http://www.gatrees.org/ContactUs.cfm>) or the USDA-APHIS office immediately (<https://www.aphis.usda.gov/aphis/home/>).

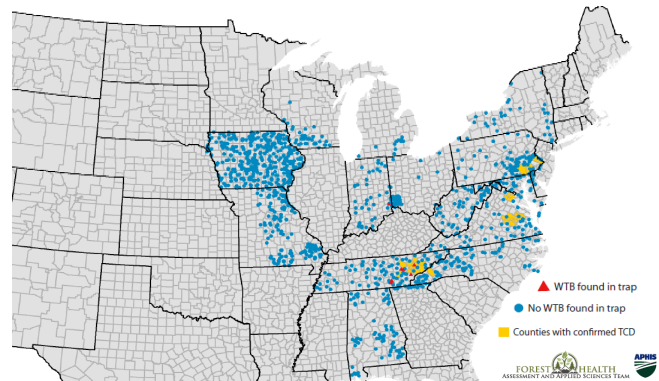


Figure 9—Map of WTB traps and findings as of April 25, 2016. (photo courtesy of USDA-APHIS).

Literature Cited

Brandeis, T.J. 2016. Forests of Georgia, 2015. Resource Update FS-103. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 4 p.

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