USDA
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RESOURCE UPDATE FS-226

Georgia's Forests, 2017: Annual Update

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 at 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 2017 with comparisons made to data reported in 2016 and prior years.

Data collected in 2017 consisted of 1,007 plots out of 4,903 forested plots, or about 21 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, data are compiled and 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 three panels of cycle 11 combined with two panels of cycle 10 for a moving average. The data used in this publication were accessed from the FIA database in May, 2019 (https://www.fia.fs.fed.us/tools-data/).

Overview

Forest land area remained relatively constant in 2017, repeating findings from previous updates in 2016. Forest area in 2017 totaled 24.5 million acres of a total land area of 37.1 million acres, a decrease of 44,252 forested acres (table 1). The number of live trees decreased by ±1 percent, while mortality decreased ±6 percent. Net volume and aboveground biomass increased by ±2 percent. Net growth increased by ±3 percent. Removals increased by <1 percent.

In Georgia, nearly 98 percent of this forest is potentially available for timber harvest because it is not specifically reserved by law. Reserved forest land in Georgia is forest land where management for the production of wood products is prohibited through statute or administrative designation. Examples include some national forest, wilderness areas, and national parks and monuments.

Table 1—Georgia forest statistics, change between 2016 and 2017

	2016 estimate	Sampling error percent	2017 estimate	Sampling error percent	Change since 2016
Forest land					
Area of forest land *(thousand acres)*	24,564.8	0.52	24,520.5	0.52	-44.3
Number of live trees (at least 1 inch d.b.h./d.r.c.) *(million trees)*	14,802.5	1.34	14,647.0	1.33	-155.5
Net merchantable bole volume of live trees (at least 5 inches d.b.h./d.r.c.) *(million cubic feet)*	44,863.9	1.09	45,840.0	1.09	976.1
Aboveground biomass of live trees (at least 1 inch d.b.h./d.r.c) *(thousand oven-dry short tons)*	1,109,465.7	0.98	1,129,826.6	0.99	20,360.9
Average annual net growth of live trees (at least 5 inches d.b.h./d.r.c.) *(million cubic feet per year)*	1,976.6	1.67	2,043.3	1.52	66.8
Average annual removals of live trees (at least 5 inches d.b.h./d.r.c.) *(million cubic feet per year)*	1,376.2	4.00	1,377.1	3.92	0.8
Average annual mortality of trees (at least 5 inches d.b.h./d.r.c.) *(million cubic feet per year)*	473.4	3.96	442.9	3.18	-30.5
Timberland					
Area of timberland *(thousand acres)*	23,990.8	0.54	23,934.3	0.55	-56.6
Number of live trees (at least 1 inch d.b.h./d.r.c.) *(million trees)*	14,511.3	1.35	14,372.1	1.35	-139.3
Net merchantable bole volume of live trees (at least 5 inches d.b.h./d.r.c.) *(million cubic feet)*	43,865.4	1.12	44,826.9	1.12	961.5
Aboveground biomass of live trees (at least 1 inch d.b.h./d.r.c) *(thousand oven-dry short tons)*	1,084,079.6	1.01	1,104,202.9	1.02	20,123.3
Average annual net growth of live trees (at least 5 inches d.b.h./d.r.c.) *(million cubic feet per year)*	2,001.7	1.56	2,032.7	1.52	31.0
Average annual removals of live trees (at least 5 inches d.b.h./d.r.c.) *(million cubic feet per year)*	1,375.3	4.00	1,378.1	3.92	2.7
Average annual mortality of trees (at least 5 inches d.b.h./d.r.c.) *(million cubic feet per year)*	420.1	3.45	426.8	3.24	6.7

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 2017, the Southeast and Central units hold the most forest land which is <1 percent from 2016 (fig. 2). The Southeast, Central, and North survey units have the highest forest cover (73, 72, and 69 percent, respectively), while the Southwest and North Central survey units have the lowest (52 and 51 percent, respectively). These percentages represent total forest land area less census water.

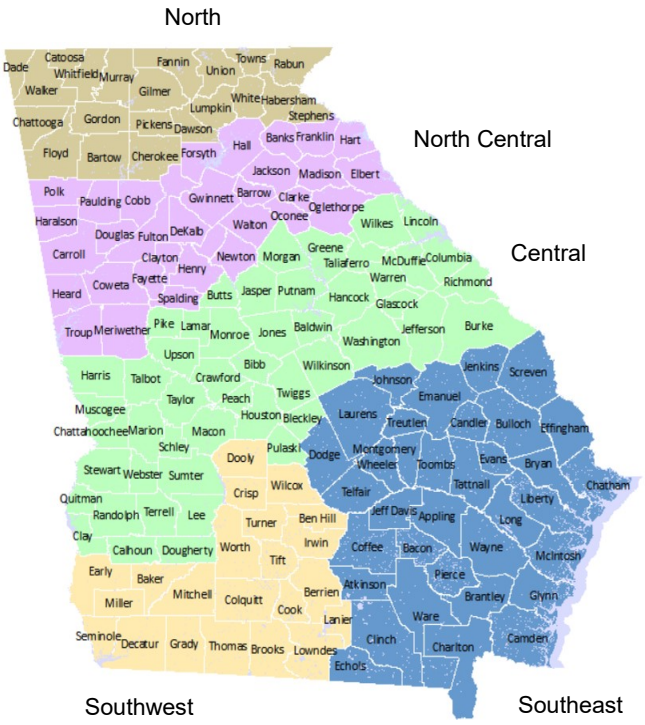

Figure 1—Counties and forest survey units in Georgia, 2017.

Between 2016 to 2017, very little change in forest land area has occurred in all units. This has stayed consistent for the last 5 years (<1 percent plus or minus, respectively).

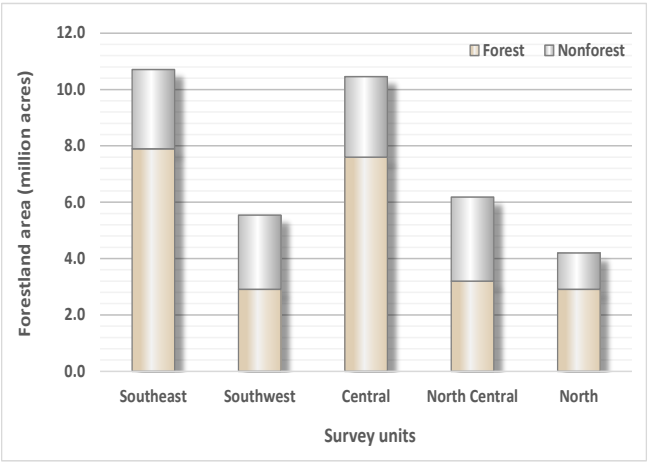

Figure 2—Forest land area (minus census water) and survey unit, Georgia, 2017.

The area of large-diameter forest stands in Georgia is 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. In 2017, large-diameter stands accounted for 53.0 percent, medium-diameter stands accounted for 23.6 percent, and small-diameter stands accounted for 22.0 percent of the forest land in Georgia. Also, 1.4 percent of forest land acres is non-stocked.

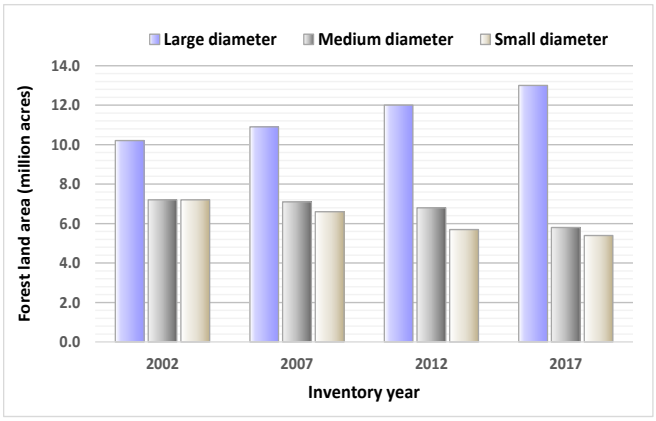

Figure 3—Forest land area by stand size class and inventory, Georgia, 2002–2017.

The majority of Georgia's forest land in 2017 (fig. 4) was in nonindustrial private forest (NIPF), with over 20.6 million acres (84 percent). Forest industry ownership ranked second with 1.2 million acres (5 percent), followed by Forest Service at 871,000 acres (4 percent), other Federal at 959,000 acres (4 percent), and State and local at 843,000 acres (3 percent).

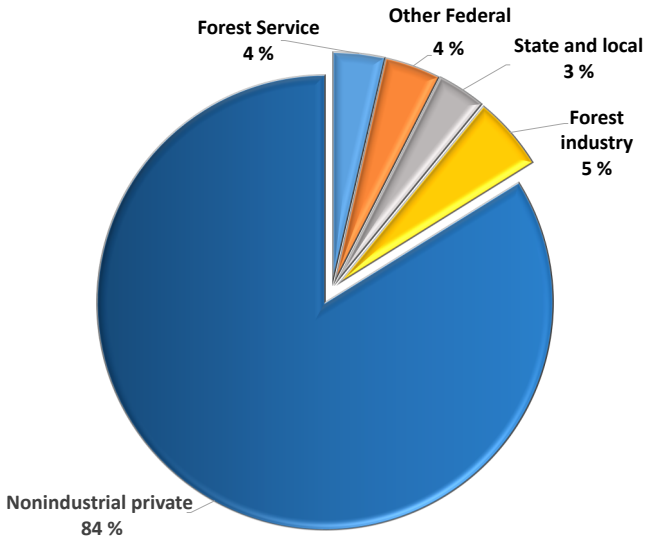

Figure 4—Forest land by ownership group, Georgia, 2017.

Volume, Biomass, and Trends

Estimated aboveground live-tree biomass on forest land increased nearly 2 percent between 2016 and 2017 to 1.1 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 2017 reached an estimated 46 billion cubic feet, a 2-percent increase compared to 2016 estimates (table 1).

Based on total number of trees with d.b.h. ≥5 inches, loblolly pine was the most common tree species in 2017, accounting for 39 percent of all-live trees on forest land (table 2). Loblolly pine also ranked first in terms of standing volume representing 32 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, 2017

Species	Number	Volume
	million trees	*million cubic feet*
Loblolly pine	1,135	14,467
Slash pine	464	4,734
Sweetgum	219	2,870
Swamp tupelo	119	1,665
Yellow-poplar	110	2,830
Water oak	96	2,016
Red maple	73	1,505
White oak	72	1,969
Longleaf pine	70	771
Pond cypress	52	630
Other	517	12,383
Total	2,927	45,840

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 2008 to 2017, while volume in the medium-diameter stand-size class decreased slightly. Volume in the small-diameter stand-size class also decreased for both species groups, with softwood and hardwood volumes close to 7.8 percent and 24.1 percent lower in 2017 compared to 2008 estimates, respectively.

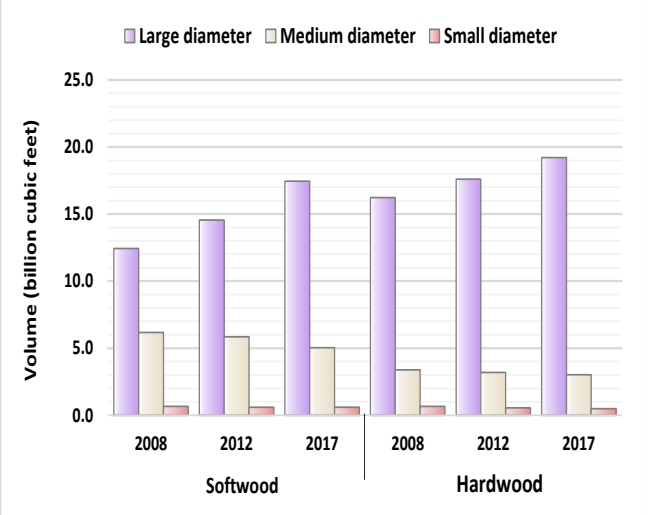

Figure 5—Volume for softwoods and hardwoods, by stand-size class and inventory year, Georgia, 2008–2017.

Growth, removals, and mortality estimates provide a measure of inventory change. Softwoods species average annual net growth trended upwards (fig. 6), with removals slightly increasing between 2008 and 2017. Hardwoods species show a slight decrease (<1 percent) in annual net growth with removals decreasing from 2008 to 2017 by almost 8 percent. Average annual mortality trended upwards in both species groups.

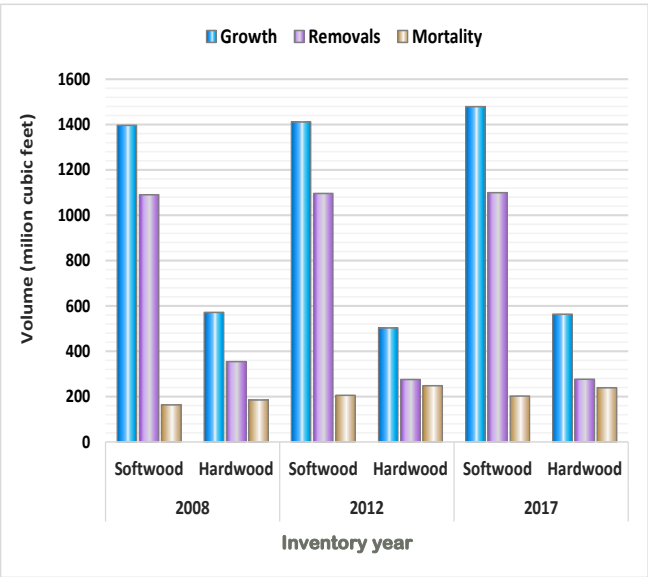

Figure 6—Average annual volume net growth, removals, and mortality (mortality has been subtracted from net growth) on forest land by species group and inventory year, Georgia, 2008–2017.

Georgia's Private Land Ownership

For more than 50 years, SRS-FIA has reported ownership into four major groups: (1) Forest Service, (2) other Federal, (3) State and local which collectively represents public ownership, and (4) private ownership which is composed of NIPF and forest industry lands. Because SRS-FIA is mandated by Congress to protect private land ownership, these two categories are combined under one group, private.

In the last decade, forest industry acreage has decreased in Georgia by 58 percent, from 3,051,000 to 1,285,000 acres (fig. 7). Even with the merger of Plum Creek Timber and Weyerhaeuser in 2016, forest industry acres are decreasing. Plum Creek is considered NIPF as it does not operate a mill,

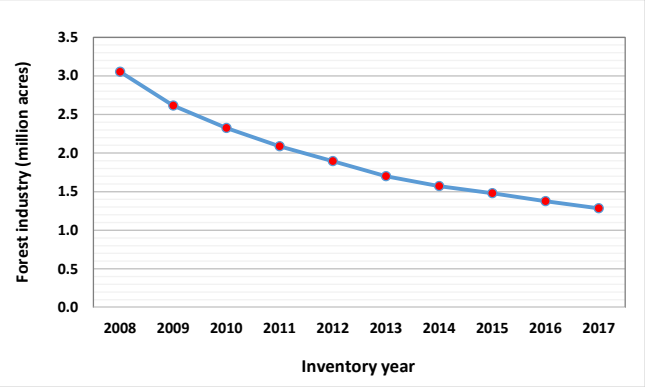

Figure 7—Forest industry acres in Georgia, 2008–2017.

while Weyerhaeuser, which does have milling operations, is considered forest industry.

SRS-FIA divides forest industry (mill-owned) into two categories [(1) corporate and (2) individual], while NIPF ownership (no mill) is divided into four categories [(1) corporate, (2) conservation/natural resource organizations, (3) unincorporated local partnerships/clubs, and (4) individuals]. Acres in the NIPF corporate category are unclear and hard for field crews to identify (fig. 8). Other factors may be contributing to the difficulty in identifying NIPF corporate entities.

Since the late 1990s, two specific investment organizations have taken a leading role in land ownership: the timberland investment management organizations (TIMO) and the real estate investment trusts (REIT).

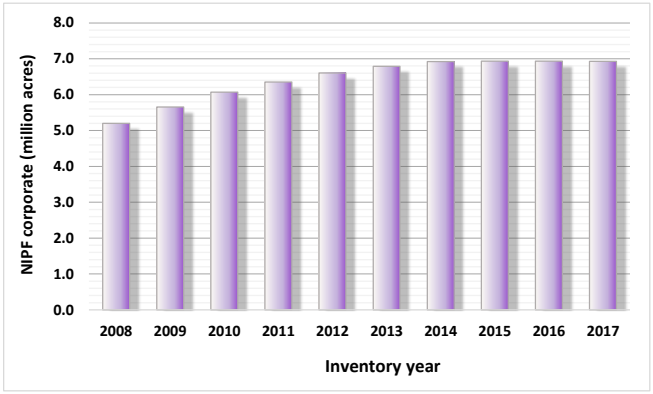

Figure 8—NIPF corporate acres in Georgia, 2008–2017.

Currently, some of the TIMO and REIT acreage may still be in either the NIPF or forest industry categories, as a forest industry entity may retain its ownership designation even when under a REIT structure (Hickman 2007).

In order to track the impact of these changes of ownerships on forest resources, it is essential that all ownerships are identified to their correct private category. During data collection for SRS-FIA surveys, the TIMO and REIT investment groups have not been specifically identified as an ownership class and therefore are not listed and reported in the tables as an ownership category.

Due to the many different ways that ownership information is recorded and stored in courthouses across the State, TIMO and REIT ownerships are often not readily identifiable in available public courthouse records, which further complicates the identification of these ownerships. Hopefully, future refinements in the collection of FIA ownership information will differentiate these two important categories and provide more insight into their role in forest ownership (Rosson and Rose 2015).

Literature Cited

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Contact Information

Samuel Lambert, Forester
Forest Inventory and Analysis
Southern Research Station,
USDA Forest Service
4700 Old Kingston Pike
Knoxville, TN 37919
Phone: 865-862-2097 / Fax: 865-862-0262
Email: samuel.lambert@usda.gov
Southern FIA: https://srs.fs.usda.gov
National FIA: https://fia.fs.fed.us

David Dickinson, FIA Coordinator
Georgia Forestry Commission
5645 Riggins Mill Road
Dry Branch, GA 31210
Phone: 770-238-7685
Email: ddickinson@gfc.state.ga.us
http://www.gfc.state.ga.us/

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