



FORESTS OF Florida, 2012

This periodic resource update provides an overview of forest resources in Florida based on an inventory conducted by the U.S. Forest Service, Forest Inventory and Analysis (FIA) program at the Southern Research Station in cooperation with the Florida Forest Service. 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 2012, with comparisons made to data reported in 2007. The sample plot population in Florida consists of 7,082 plots distributed across the State, of which about 20 percent are collected annually. The 2012 estimates included 4 years of data collection that measured 5,674 plots, resulting in about 80 percent new data merged with the remaining 20 percent from 2007 to produce the updated estimates. Growth, removals, and mortality (GRM) estimates were derived from remeasurement data on 5,174 of the plots. The slightly smaller sample used for GRM estimates is due to a combination of new and/or lost plots.

The data used in this publication were accessed from the FIA database on March 20, 2014 at <http://www.fia.fs.fed.us/tools-data/>.

Overview

Florida was home to 17.4 million acres of forest land in 2012. Forested area had increased by about 3.2 percent (538,500 acres) since 2007 (table 1). Forest land includes areas designated as reserved, whereas timberland is that portion not restricted from commercial timber production, measured at 15.5 million acres in 2012. The majority of this report is focused on timberland. The number of live trees on Florida’s timberland was estimated at 7.0 billion trees, a decrease of 3.7 percent from 2007. Net volume increased about 7.0 percent to 20.4 billion cubic feet. Average annual net growth increased 12.1 percent to 0.8 billion cubic feet, whereas average annual removals increased by <1.0 percent since 2007 to remain near 0.6 billion cubic feet (table 1).

Table 1—Florida’s forest statistics, change between 2007 and 2012^a

Forest statistics	2007 estimate	Sampling error percent	2012 estimate	Sampling error percent	Change since 2007
Forest land					
Area (thousand acres)	16,897.1	0.86	17,435.7	0.84	538.5
Number of live trees ≥1.0 inch d.b.h. (million trees)	7,968.7	1.89	8,097.8	1.90	129.0
Net volume of live trees ≥5.0 inches d.b.h. (million cubic feet)	20,336.7	1.99	22,130.0	1.96	1,793.3
Live tree aboveground biomass (thousand oven-dry tons)	529,845.4	1.76	570,699.6	1.76	40,854.2
Net annual growth of live trees ≥5.0 inches d.b.h. (million cubic feet per year)	n/a	n/a	861.7	3.11	n/a
Annual removals of live trees ≥5.0 inches d.b.h. (million cubic feet per year)	n/a	n/a	531.2	5.80	n/a
Annual mortality of live trees ≥5.0 inches d.b.h. (million cubic feet per year)	n/a	n/a	294.4	5.52	n/a
Timberland					
Area (thousand acres)	15,609.7	0.94	15,502.6	0.95	-107.1
Number of live trees ≥1.0 inch d.b.h. (million trees)	7,300.0	1.93	7,031.6	1.96	-268.4
Net volume of live trees ≥5.0 inches d.b.h. (million cubic feet)	19,056.7	2.08	20,388.1	2.05	1,331.4
Live tree aboveground biomass (thousand oven-dry tons)	496,328.6	1.85	524,410.3	1.86	28,081.7
Net annual growth of live trees ≥5.0 inches d.b.h. (million cubic feet per year)	743.5	3.13	833.2	3.13	89.8
Annual removals of live trees ≥5.0 inches d.b.h. (million cubic feet per year)	563.6	4.87	563.9	6.52	0.3
Annual mortality of live trees ≥5.0 inches d.b.h. (million cubic feet per year)	226.8	4.83	271.7	5.84	44.9

^a Estimates for 2012 are comprised of 20 percent 2007 data and four panels (2009, 2010, 2011, 2012), or 80 percent 2012 data. Growth, removals, and mortality estimates for 2012 are comprised of only four panels of 2012 data, or 80 percent of a full sample. Growth, removals, and mortality data were not collected on forest land in 2007.



Forest Area

Florida is divided into four survey units (fig. 1). The total timberland in all survey units in 2012 was 15.50 million acres. The Northeast unit contained the most with 6.5 million acres, or 42 percent (table 2). The Northwest unit had 35 percent, the Central unit 17 percent, and the South unit 6 percent of the timberland.

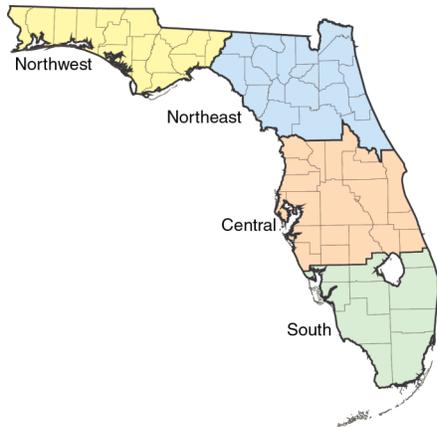


Figure 1—Forest survey regions in Florida.

Other corporate ownerships accounted for the most timberland with 6.05 million acres, or 39 percent (table 2). Private individual ownerships combined for >27 percent, State/local governments for >17 percent, national forest 7 percent, forest industry for 5 percent, and other Federal ownerships accounted for nearly 4 percent.

Most private individual ownerships, 41 percent, were located in the Northeast unit, which also contained 88 percent of the forest industry timberland. National forest timberland was split between the Northeast and Northwest units. Most other corporate timberland, 44 percent, was found in the Northeast unit, whereas most other Federal timberland, 78 percent, was located in the Northwest unit.

Table 2—Area of timberland by ownership and survey unit, Florida, 2012

Category	North-east	North-west	Central	South	State
	<i>million acres</i>				
National forest	0.53	0.52	0.07	0.00	1.12
Other Federal	0.01	0.45	0.11	0.00	0.58
State and local government	0.84	0.79	0.72	0.35	2.70
Forest industry	0.71	0.07	0.02	0.01	0.81
Individual	1.75	1.62	0.65	0.24	4.25
Other corporate	2.64	2.03	0.99	0.39	6.05
Total	6.48	5.48	2.56	0.98	15.50

The longleaf-slash pine forest-type group dominated with 5.46 million acres, or 35 percent, of all timberland (table 3). The oak-gum-cypress group covered 19 percent, the oak-hickory group 17 percent, the loblolly-shortleaf pine group 11 percent, and the oak-pine group 10 percent of the timberland.

The largest portion of the longleaf-slash pine group, 46 percent, was located in the Northeast unit. More of the oak-gum-cypress group, 41 percent, as well as more of the oak-hickory group, 42 percent, also occurred in the Northeast unit. The majority of the loblolly-shortleaf pine group, 56 percent, was found in the Northwest unit. The oak-pine group was largely split between the Northwest and Northeast units.

Table 3—Area of timberland by forest-type group and survey unit, Florida, 2012

Forest-type group	North-east	North-west	Central	South	State
	<i>million acres</i>				
Longleaf-slash pine	2.50	2.11	0.55	0.31	5.46
Loblolly-shortleaf pine ^a	0.65	0.93	0.07	0.01	1.65
Oak-pine	0.60	0.61	0.24	0.07	1.51
Oak-hickory	1.13	0.73	0.72	0.11	2.69
Oak-gum-cypress	1.23	0.93	0.66	0.17	3.00
Elm-ash-cottonwood	0.03	0.03	0.05	0.00	0.11
Other hardwoods	0.02	0.00	0.01	0.00	0.03
Tropical hardwoods	0.07	0.00	0.15	0.16	0.38
Exotic hardwoods	0.00	0.00	0.00	0.07	0.07
Nonstocked	0.27	0.14	0.12	0.08	0.62
Total	6.48	5.48	2.56	0.98	15.50

^a Includes other eastern softwoods.

Planted stands accounted for 32 percent, or 4.9 million acres, of the timberland (table 4). The Northeast unit contained 53 percent of the planted acres, the Northwest unit 41 percent, the Central unit 4 percent, and <2 percent were in the South unit.

Table 4—Area^a of timberland by stand origin and survey unit, Florida, 2012

Stand origin	North-east	North-west	Central	South	State
	<i>million acres</i>				
Planted	2.59	2.02	0.19	0.09	4.89
Natural	3.89	3.46	2.37	0.89	10.61
Total	6.48	5.48	2.56	0.98	15.50

^a Sum of components and totals may differ due to rounding.

Volume, Biomass, and Trends

Florida timberland contained 20.4 billion cubic feet of total wood volume in 2012. Softwood species made up 11.6 billion cubic feet, or 57 percent, of total inventory (table 5). Hardwood species made up 8.8 billion cubic feet, or 43 percent, of the total volume in the State. Total softwood inventory was highest (41 percent) in the Northwest unit and lowest (5 percent) in the South unit. Total hardwood inventory was highest (40 percent) in the Northeast unit and lowest (4 percent) in the South unit.

Statewide, net growth of softwoods averaged 611 million cubic feet annually (table 5). Most of the softwood net growth, 48 percent, came from the Northeast unit. Another 43 percent came from the Northwest unit. In addition, 63 percent of the State’s average annual 453 million cubic feet of softwood removals came from the Northeast alone. Most of the remainder (33 percent) came from the Northwest unit. However, the softwood growth-to-removals ratio was higher (1.76) in the Northwest unit than it was in the Northeast unit (1.04). The highest softwood growth-to-removals ratio in the State (3.36) occurred in the Central unit, although the softwood resource there was just 15 percent of the State total.

The State’s net growth of hardwoods averaged 223 million cubic feet annually. Most of the hardwood net growth, 42 percent, came from the Northeast unit. Another 41 percent came from the

Table 5—All-live (trees ≥ 5 inches d.b.h.) volume of net growth, removals, and total inventory^a on timberland for softwoods and hardwoods by survey unit, Florida, 2012

Category	North-east	North-west	Central	South	State
<i>million cubic feet</i>					
Softwood					
Net growth	293.85	260.48	41.76	14.63	610.71
Removals	283.28	148.30	12.44	8.76	452.78
G/R ratio ^a	1.04	1.76	3.36	1.67	1.35
Total inventory	4,399.36	4,815.07	1,796.39	593.62	11,604.43
Hardwood					
Net growth	93.46	91.53	28.62	8.91	222.52
Removals	47.47	24.18	32.41	7.08	111.13
G/R ratio ^b	1.97	3.79	0.88	1.26	2.00
Total inventory	3,534.40	3,042.14	1,872.03	335.09	8,783.66
All species					
Net growth	387.31	352.01	70.38	23.54	833.23
Removals	330.75	172.48	44.85	15.84	563.91
G/R ratio ^b	1.17	2.04	1.57	1.49	1.48
Total inventory	7,933.76	7,857.21	3,668.42	928.71	20,388.09

^a Sums and totals may differ due to rounding.

^b Net growth/removals ratio.

Northwest unit. The State’s hardwood removals averaged 111 million cubic feet annually. Most of the hardwood removals, 43 percent, came from the Northeast unit, and another 29 percent came from the Central unit. The hardwood growth-to-removals ratio was highest (3.79) in the Northwest unit and lowest in the Central unit (0.88).

Aboveground biomass totaled 524 million dry weight tons in Florida. Softwood species made up 275 million tons, or 52 percent, of the total biomass (table 6). Hardwood species made up 250 million tons, or 48 percent, of total biomass.

The Northwest unit contained the largest portion (41 percent) of the softwood biomass. The Northeast unit contained the largest portion (41 percent) of the hardwood biomass.

Table 6—Aboveground biomass (trees ≥ 1 inch d.b.h.) and carbon estimates on timberland for softwoods and hardwoods by survey unit, Florida, 2012

Category	North-east	North-west	Central	South	State
<i>million tons</i>					
Softwood					
Biomass	108.10	111.93	40.35	14.26	274.64
Carbon	54.05	55.97	20.18	7.13	137.32
Hardwood					
Biomass	102.15	83.70	53.52	10.40	249.77
Carbon	51.07	41.85	26.76	5.20	124.89
Total					
Biomass	210.24	195.63	93.87	24.66	524.41
Carbon	105.12	97.82	46.94	12.33	262.21

Longleaf pine stand in the Apalachicola National Forest. (photo courtesy of wikimedia.org)



Longleaf Pine Trends in Florida

In 2012, longleaf pine forest type covered 0.9 million acres in Florida, only 9.3 percent of the 9.7 million acres the species occupied in 1936 at the time of the first Florida FIA inventory. By the fourth (1970) Florida FIA inventory, acreage of longleaf pine had decreased to 1.3 million acres, an 87-percent decline in 34 years. The downward trend continued until 1995, when the area of longleaf pine forest type covered only 0.7 million acres, just 7.2 percent of its extent in 1936 (table 7).

Losses of longleaf pine forest-type acreage were accompanied by rapid changes in longleaf pine volume and its diameter class distribution. In 1970, longleaf pine diameter classes extended from 2 to 32 inches diameter at breast height (d.b.h.) (fig. 2). Only 10 years later, the largest tree diameters dropped to the 24-inch d.b.h. class. Since 1995, the diameter classes have become more evenly distributed. The 2012 diameter class distribution statewide assumed a smoother, decreasing exponential curve expected of well-balanced uneven aged stands; however, tree diameters ranged only from 2- to 20-inch d.b.h. classes, a reduced range from earlier inventories.

The positive changes in Florida’s longleaf pine resource reflect deliberate management actions by foresters, natural resource professionals, and public policymakers starting in the 1990s to

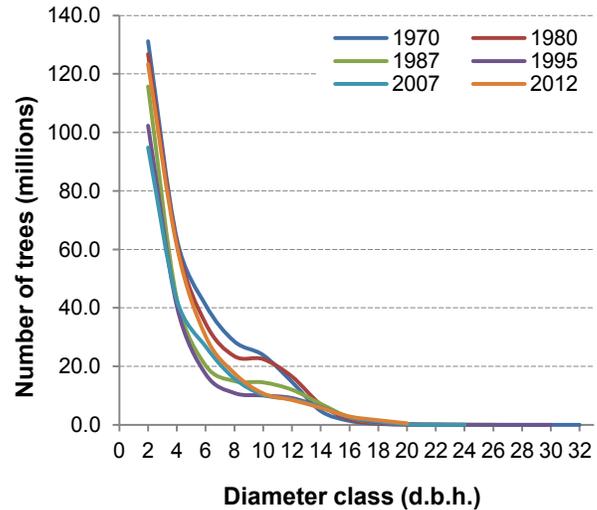


Figure 2—Number of longleaf pine trees ≥1 inch d.b.h. on timberland, Florida, 1970-2012.

restore longleaf pine forests. Silvicultural techniques, including prescribed fire and planting of longleaf pine seedlings, have been key to the restoration process. The area of planted longleaf pine in Florida increased from 70,000 acres, or 5.3 percent of total longleaf area, in the 1970 FIA inventory to nearly 210,000 acres, or 22.8 percent of total, in the 2012 inventory. Florida’s area of longleaf pine, number of longleaf pine trees, and cubic-foot volume have been on a rebound since 1995 (table 7). In 2012, Florida’s longleaf pine resource exceeded 0.9 million acres, 262 million trees, and 902 million cubic feet in volume.

Table 7—Changes in longleaf pine on timberland by year, Florida, 1970–2012

Year	Area of longleaf pine forest type <i>thousand acres</i>	Number of live trees ≥1 inch d.b.h. <i>- million -</i>	Net volume of live trees ≥5 inches d.b.h. <i>- million ft³-</i>
1970	1,331.6	309.4	1,007.6
1980	1,121.0	295.9	1,069.8
1987	856.3	231.4	930.4
1995	715.6	200.1	781.8
2007	835.5	209.4	823.1
2012	919.3	262.6	902.2

Source: Evaluator, accessed online September 11-12, 2014.



Longleaf pine in Jay B. Starkey Wilderness Park, Florida. (photo by Daniel Oines, flickr.com)

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