USDA
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RESOURCE UPDATE FS-73

FORESTS OF Florida, 2013

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 2013, with comparisons made to data reported in 2007. The sample plot population in Florida consists of 7,089 plots distributed across the State, of which about 20 percent are collected annually. The 2013 estimates included 5 years of data collection that measured 100 percent of the plots to produce the updated estimates. Growth, removals, and mortality (GRM) estimates were derived from remeasurement data on 6,474 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 May 1, 2015 at http://www.fia.fs.fed.us/tools-data/.

Overview

Florida was home to 17.27 million acres of forest land in 2013. Forested area increased by >2 percent (374,700 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 15.39 million acres in 2013. The majority of this report is focused on timberland. The number of live trees on Florida's timberland was estimated at 7.01 billion trees, a decrease of 4 percent from 2007. Net volume increased > 9 percent to 20.82 billion cubic feet. Average annual net growth increased >17 percent to 0.87 billion cubic feet, whereas average annual removals increased by >1 percent since 2007 to 0.57 billion cubic feet (table 1). The ecologically and commercially important cypress is featured on page 4. Like overall trends, cypress forest land increased while its timberland decreased. Reclassification to reserved status influenced these changes.

Table 1—Florida's forest statistics, change between 2007 and 2013[a]

Forest statistics	2007 estimate	Sampling error	2013 estimate	Sampling error	Change since 2007
		percent		*percent*	
Forest land					
Area *(thousand acres)*	16,897.1	0.86	17,271.8	0.84	374.7
Number of live trees ≥1.0 inch d.b.h. *(million trees)*	7,968.7	1.89	8,016.7	1.90	48.0
Net volume of live trees ≥5.0 inches d.b.h. *(million cubic feet)*	20,336.7	1.99	22,528.8	1.94	2,192.1
Live tree aboveground biomass *(thousand oven-dry tons)*	529,845.4	1.76	579,123.6	1.75	49,278.2
Net annual growth of live trees ≥5.0 inches d.b.h. *(million cubic feet per year)*	n/a	n/a	896.4	2.69	n/a
Annual removals of live trees ≥5.0 inches d.b.h. *(million cubic feet per year)*	n/a	n/a	535.6	5.29	n/a
Annual mortality of live trees ≥5.0 inches d.b.h. *(million cubic feet per year)*	n/a	n/a	283.7	4.94	n/a
Timberland					
Area *(thousand acres)*	15,609.7	0.94	15,392.7	0.95	-217.0
Number of live trees ≥1.0 inch d.b.h. *(million trees)*	7,300.0	1.93	7,005.3	1.97	-294.7
Net volume of live trees ≥5.0 inches d.b.h. *(million cubic feet)*	19,056.7	2.08	20,818.8	2.04	1,762.1
Live tree aboveground biomass *(thousand oven-dry tons)*	496,328.6	1.85	533,030.0	1.85	36,701.4
Net annual growth of live trees ≥5.0 inches d.b.h. *(million cubic feet per year)*	743.5	3.13	871.9	2.75	128.4
Annual removals of live trees ≥5.0 inches d.b.h. *(million cubic feet per year)*	563.6	4.87	570.5	5.74	6.9
Annual mortality of live trees ≥5.0 inches d.b.h. *(million cubic feet per year)*	226.8	4.83	263.6	5.21	36.8

[a] Estimates for 2013 are comprised of five panels (2009, 2010, 2011, 2012, 2013) constituting 100 percent new data. Growth, removals, and mortality estimates were not collected on forest land in 2007. The 2007 estimates used were reported in Resource Update FS-27.

Forest Area

Florida is divided into four survey units (fig. 1). The total timberland in all survey units in 2013 was 15.39 million acres. The Northeast unit contained the most with 6.40 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.

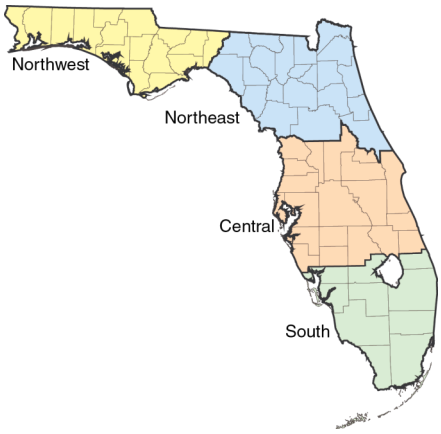


Figure 1—Forest survey regions in Florida.

Other corporate ownerships accounted for the most timberland with 6.12 million acres, or 40 percent (table 2). Private individual ownerships combined for <27 percent, State/local governments for >18 percent, national forest 7 percent, forest industry for 5 percent, and other Federal ownerships accounted for <4 percent.

Most private individual ownerships, 40 percent, were located in the Northeast unit, which also contained 87 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, 79 percent, was located in the Northwest unit.

Table 2—Area of timberland by ownership and survey unit, Florida, 2013

Category	North-east	North-west	Central	South	State
			million acres		
National forest	0.53	0.52	0.07	0.00	1.12
Other Federal	0.02	0.44	0.11	0.00	0.56
State and local government	0.82	0.80	0.76	0.36	2.74
Forest industry	0.67	0.06	0.02	0.01	0.77
Individual	1.65	1.57	0.63	0.22	4.08
Other corporate	2.70	2.05	1.00	0.36	6.12
Total	6.40	5.44	2.59	0.96	15.39

The longleaf-slash pine forest-type group dominated with 5.32 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, 45 percent, was located in the Northeast unit. More of the oak-gum-cypress group, 42 percent, as well as more of the oak-hickory group, 41 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, 2013

Forest-type group	North-east	North-west	Central	South	State
			million acres		
Longleaf-slash pine	2.40	2.07	0.56	0.29	5.32
Loblolly-shortleaf pine[a]	0.66	0.93	0.06	0.00	1.65
Oak-pine	0.60	0.62	0.24	0.07	1.53
Oak-hickory	1.11	0.73	0.74	0.12	2.69
Oak-gum-cypress	1.25	0.92	0.66	0.17	3.00
Elm-ash-cottonwood	0.02	0.03	0.04	0.00	0.09
Other hardwoods	0.02	0.00	0.01	0.00	0.03
Tropical hardwoods	0.06	0.00	0.17	0.16	0.38
Exotic hardwoods	0.00	0.00	0.00	0.07	0.07
Nonstocked	0.28	0.14	0.12	0.08	0.62
Total	6.40	5.44	2.59	0.96	15.39

[a] Includes other eastern softwoods.

Planted stands accounted for 31 percent, or 4.74 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, 2013

Stand origin	North-east	North-west	Central	South	State
			million acres		
Planted	2.49	1.96	0.20	0.09	4.74
Natural	3.91	3.48	2.39	0.87	10.66
Total	6.40	5.44	2.59	0.96	15.39

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

Volume, Biomass, and Trends

Florida timberland contained 20.82 billion cubic feet of total wood volume in 2013. Softwood species made up 11.86 billion cubic feet, or 57 percent, of total inventory (table 5). Hardwood species made up 8.96 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 654.55 million cubic feet annually (table 5). Most of the softwood net growth, 48 percent, occurred in the Northeast unit. Another 42 percent occurred in the Northwest unit. In addition, 57 percent of the State's average annual 467.17 million cubic feet of softwood removals came from the Northeast alone. Most of the remainder (38 percent) came from the Northwest unit. However, the softwood growth-to-removals ratio was higher (1.54) in the Northwest unit than it was in the Northeast unit (1.17). The highest softwood growth-to-removals ratio in the State (3.43) occurred in the Central unit, although its softwood resource was just 15 percent of the State total.

The State's net growth of hardwoods averaged 217.32 million cubic feet annually. Slightly more of the hardwood net growth, 40 percent, occurred in the Northwest unit. Another 39 percent occurred in the Northeast unit. The State's hardwood removals averaged 103.37 million cubic feet annually. Most of the hardwood removals, 46 percent, came from the Northeast unit, and another 28 percent came from the Central unit. The hardwood growth-to-removals ratio was highest (4.27) in the Northwest unit and lowest in the Central unit (1.15).

Aboveground biomass totaled 533.03 million dry weight tons in Florida. Softwood species made up 278.11 million tons, or 52 percent, of the total biomass (table 6). Hardwood species made up 254.92 million tons, or 48 percent, of total biomass.

The Northeast and Northwest units each contained 40 percent of the softwood biomass. The Northeast unit contained the largest portion (41 percent) of the hardwood biomass.

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, 2013

Category	North-east	North-west	Central	South	State
			million cubic feet		
Softwood					
Net growth	311.27	273.96	48.58	20.73	654.55
Removals	266.98	177.87	14.18	8.14	467.17
G/R ratio[a]	1.17	1.54	3.43	2.55	1.40
Total inventory	4,582.97	4,813.57	1,826.32	635.75	11,858.61
Hardwood					
Net growth	85.08	86.46	32.86	12.92	217.32
Removals	47.43	20.25	28.49	7.20	103.37
G/R ratio[b]	1.79	4.27	1.15	1.79	2.10
Total inventory	3,554.91	3,134.02	1,918.55	352.70	8,960.17
All species					
Net growth	396.35	360.42	81.44	33.65	871.87
Removals	314.41	198.12	42.67	15.34	570.54
G/R ratio[b]	1.26	1.82	1.91	2.19	1.53
Total inventory	8,137.88	7,947.59	3,744.48	988.44	20,818.78

[a] Sums and totals may differ due to rounding.
[b] Net growth/removals ratio.

Table 6—Aboveground biomass (trees ≥1 inch d.b.h.) and carbon estimates on timberland for softwoods and hardwoods by survey unit, Florida, 2013

Category	North-east	North-west	Central	South	State
			million tons		
Softwood					
Biomass	111.49	111.28	40.50	14.84	278.11
Carbon	55.74	55.64	20.25	7.42	139.05
Hardwood					
Biomass	103.57	85.92	54.86	10.57	254.92
Carbon	51.78	42.96	27.43	5.28	127.46
Total					
Biomass	215.06	197.21	95.36	25.41	533.03
Carbon	107.53	98.60	47.68	12.70	266.51

Black bear in sand pine scrub of Ocala National Forest, Florida. (photo by Florida Fish and Wildlife Conservation Commission)

Cypress Trends in Florida

In 2013, cypress forest type covered 0.96 million acres in Florida, down from the 1.40 million acres it occupied at the time of the 1987 Florida FIA inventory. From 1987 to 1995, acreage of cypress type decreased 19 percent to 1.13 million acres. The downward trend continued to 2007 with a 6 percent drop to 1.06 million acres. From 2007 to 2013, cypress type decreased another 9 percent to 0.96 million acres (table 7).

The total number of cypress trees decreased by 18 percent from 808.02 million trees in 1987 to 660.44 million trees in 1995. That number decreased by 13 percent to 573.87 million trees in 2007. In 2013, the decrease in total number of cypress trees slowed to just 1 percent at 568.28 million trees.

The decline in net volume of cypress trees has halted. Between 1987 and 1995, volume of cypress decreased by 13 percent, from 2.76 to 2.40 billion cubic feet (table 7). From 1995 to 2007, volume of cypress decreased by >1 percent to 2.37 billion cubic feet. From 2007 to 2013, volume of cypress increased by <7 percent to 2.53 billion cubic feet.

The number of cypress trees by diameter class distribution changed as well. From 1987 to 1995, cypress tree diameter classes decreased in tree numbers for all diameters below 12 inches (fig. 2). From 1995 to 2007, similar reductions in all cypress diameter classes below 12 inches occurred but to a lesser extent. Since 2007, the losses within diameter classes have generally become limited to the 4- to 6- inch classes. The 2013 cypress diameter class distribution actually increased slightly in the 2-inch diameter class.

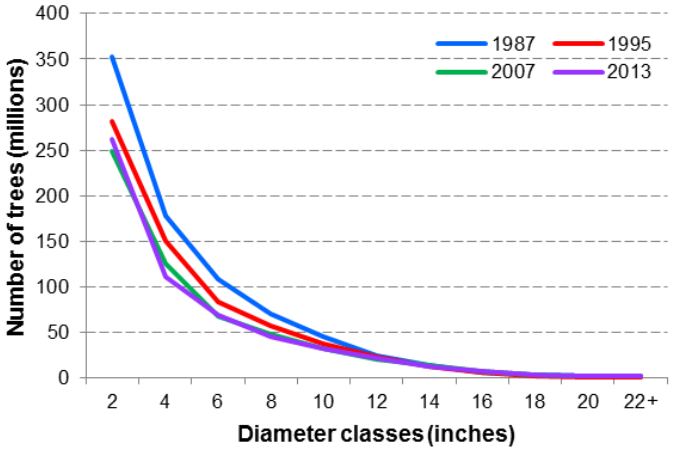
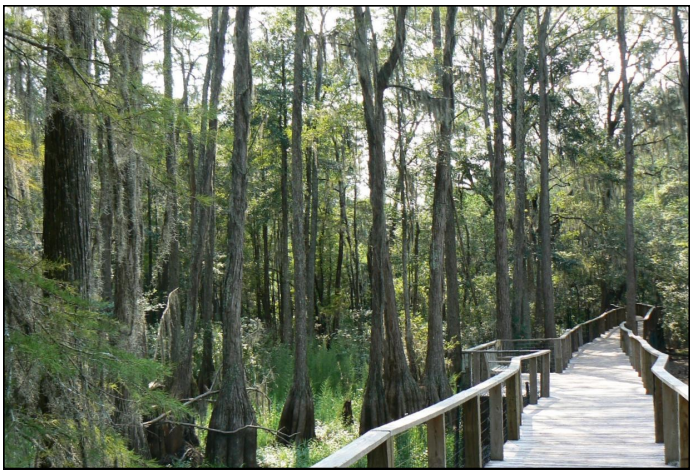


Figure 2—Number of cypress trees ≥1 inch diameter class on timberland, Florida, 1987–2013.

Table 7—Changes in cypress on timberland by year, Florida, 1987–2013

Year	Area of cypress forest type	Number of live trees ≥1 inch d.b.h.	Net volume of live trees ≥5 inches d.b.h.
	million acres	*- million -*	*- billion ft³ -*
1987	1.40	808.02	2.76
1995	1.13	660.44	2.40
2007	1.06	573.87	2.37
2013	0.96	568.28	2.53

Source: Evalidator, accessed online May 1, 2015.



Cypress along boardwalk at Tallahassee, FL. (photo by Tim Ross, Wikimedia.org)

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