



FORESTS OF Florida, 2015

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 2015, with comparisons made to data reported in 2013 (the latest 5-year cycle of plots completed). The sample plot population in Florida consists of 7,294 plots distributed across the State, of which about 20 percent are collected annually. The 2015 estimates included 5 years of data collection from 100 percent of the sample plots updated by 20 percent re-measured in 2015. Growth, removals, and mortality (GRM) estimates were derived from remeasurement data on 6,606 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 April 4, 2017 at <https://www.fia.fs.fed.us/tools-data/>.

Overview

Florida was home to 17.16 million acres of forest land in 2015. Forest land area decreased by 0.7 percent (115,400 acres) since 2013 (table 1). Forest land includes areas designated as reserved, whereas timberland is that portion not restricted from commercial timber production, measured at 15.28 million acres in 2015. The majority of this report is focused on timberland. The number of live trees on Florida’s timberland was estimated at 6.88 billion trees, a decrease of 1.8 percent from 2013. Net volume increased >6 percent to 22.14 billion cubic feet. Average annual net growth increased <7 percent to 0.93 billion cubic feet, whereas average annual removals decreased by >5 percent since 2013 to 0.54 billion cubic feet (table 1). The ecologically unique palm forest types are featured on page 4, where the various types are discussed collectively regarding area, but with focus on the State tree of cabbage palm (*Sabal palmetto*) concerning population and biomass.

Table 1—Florida's forest statistics, change between 2013 and 2015^a

Forest statistics	2013 estimate	Sampling error percent	2015 estimate	Sampling error percent	Change since 2013
Forest land					
Area (thousand acres)	17,271.8	0.84	17,156.4	0.85	-115.4
Number of live trees ≥1.0 inch d.b.h. (million trees)	8,016.7	1.90	7,985.5	1.86	-31.2
Net volume of live trees ≥5.0 inches d.b.h. (million cubic feet)	22,528.8	1.94	23,974.3	1.73	1,445.5
Live tree aboveground biomass (thousand oven-dry tons)	579,123.6	1.75	611,056.3	1.56	31,932.7
Net annual growth of live trees ≥5.0 inches d.b.h. (million cubic feet per year)	896.4	2.69	962.4	2.18	66.0
Annual removals of live trees ≥5.0 inches d.b.h. (million cubic feet per year)	535.6	5.29	533.0	5.37	-2.6
Annual mortality of live trees ≥5.0 inches d.b.h. (million cubic feet per year)	283.7	4.94	236.1	4.25	-47.6
Timberland					
Area (thousand acres)	15,392.7	0.95	15,276.3	0.95	-116.4
Number of live trees ≥1.0 inch d.b.h. (million trees)	7,005.3	1.97	6,877.4	1.89	-127.9
Net volume of live trees ≥5.0 inches d.b.h. (million cubic feet)	20,818.8	2.04	22,136.0	1.83	1,317.2
Live tree aboveground biomass (thousand oven-dry tons)	533,030.0	1.85	562,183.4	1.67	29,153.4
Net annual growth of live trees ≥5.0 inches d.b.h. (million cubic feet per year)	871.9	2.75	929.4	2.23	57.5
Annual removals of live trees ≥5.0 inches d.b.h. (million cubic feet per year)	570.5	5.74	541.5	5.33	-29.0
Annual mortality of live trees ≥5.0 inches d.b.h. (million cubic feet per year)	263.6	5.21	216.6	4.46	-47.0

^a Estimates for 2015 are comprised of five panels (2011, 2012, 2013, 2014, and 2015) constituting 40 percent new data. The 2013 estimates used were reported in Resource Update FS-73.



Forest Area

Florida is divided into four survey units (fig. 1). The total timberland in all survey units in 2015 was 15.28 million acres. The Northeast unit contained the most with 6.46 million acres, or 42 percent (table 2). The Northwest unit had 35 percent, the Central unit <17 percent, and the South unit >5 percent of the timberland.

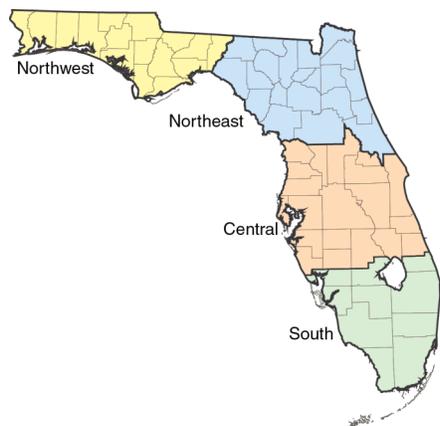


Figure 1—Forest survey regions in Florida.

Other corporate ownerships accounted for the most timberland with 6.40 million acres, or 42 percent (table 2). Private individual ownerships combined for 26 percent, State/local governments for 18 percent, national forest 7 percent, forest industry for >3 percent, and other Federal ownerships accounted for <4 percent.

Most private individual ownerships, 41 percent, were located in the Northeast unit, which also contained 87 percent of the forest industry timberland. Most National forest timberland was split between the Northeast and Northwest units. Most other corporate timberland, 47 percent, was found in the Northeast unit, whereas most other Federal timberland, 79 percent, was located in the Northwest unit.

Table 2—Area^a of timberland by ownership and survey unit, Florida, 2015

Category	North-east	North-west	Central	South	State
<i>million acres</i>					
National forest	0.51	0.52	0.08	0.00	1.11
Other Federal	0.01	0.44	0.11	0.00	0.56
State and local government	0.88	0.80	0.76	0.32	2.75
Forest industry	0.45	0.04	0.02	0.01	0.52
Individual	1.63	1.51	0.60	0.20	3.93
Other corporate	2.98	2.12	0.99	0.31	6.40
Total	6.46	5.42	2.55	0.84	15.28

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

The longleaf-slash pine forest-type group dominated with 5.25 million acres, or 34 percent, of all timberland (table 3). The oak-gum-cypress group covered 20 percent, the oak-hickory group 17 percent, the loblolly-shortleaf pine group 12 percent, and the oak-pine group >9 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, <42 percent, also occurred in the Northeast unit. The majority of the loblolly-shortleaf pine group, 55 percent, was found in the Northwest unit. More of the oak-pine group, 41 percent, occurred in the Northwest unit, followed by 39 percent in the Northeast unit.

Table 3—Area^a of timberland by forest-type group and survey unit, Florida, 2015

Forest-type group	North-east	North-west	Central	South	State
<i>million acres</i>					
Longleaf-slash pine	2.38	2.07	0.55	0.25	5.25
Loblolly-shortleaf pine ^b	0.72	0.99	0.07	0.00	1.79
Oak-pine	0.57	0.59	0.23	0.05	1.45
Oak-hickory	1.10	0.72	0.72	0.10	2.65
Oak-gum-cypress	1.30	0.92	0.69	0.16	3.07
Elm-ash-cottonwood	0.02	0.02	0.04	0.00	0.08
Other hardwoods	0.01	0.00	0.00	0.00	0.02
Tropical hardwoods	0.06	0.00	0.16	0.14	0.36
Exotic hardwoods	0.01	0.00	0.00	0.05	0.06
Nonstocked	0.30	0.10	0.08	0.07	0.55
Total	6.46	5.42	2.55	0.84	15.28

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

^b Includes other eastern softwoods.

Planted stands accounted for 30 percent, or 4.60 million acres, of the timberland (table 4), down from 4.74 in 2013. The Northeast unit contained 53 percent of the planted acres, the Northwest unit 42 percent, the Central unit >3 percent, and <2 percent were in the South unit.

Table 4—Area^a of timberland by stand origin and survey unit, Florida, 2015

Stand origin	North-east	North-west	Central	South	State
<i>million acres</i>					
Planted	2.43	1.94	0.16	0.08	4.60
Natural	4.03	3.49	2.40	0.76	10.67
Total	6.46	5.42	2.55	0.84	15.28

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

Volume, Biomass, and Trends

Florida timberland contained 22.14 billion cubic feet of total wood volume in 2015. Softwood species made up 12.69 billion cubic feet, or 57 percent, of total inventory (table 5). Hardwood species made up 9.45 billion cubic feet, or 43 percent, of the total volume in the State. Total softwood inventory was highest (40 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 (>3 percent) in the South unit.

Statewide, net growth of softwoods averaged 707.02 million cubic feet annually (table 5). Most of the softwood net growth, 48 percent, occurred in the Northeast unit. Nearly 40 percent occurred in the Northwest unit. In addition, 56 percent of the State’s average annual 459.02 million cubic feet of softwood removals came from the Northeast alone. Most of the remainder (39 percent) came from the Northwest unit. However, the softwood growth-to-removals ratio was higher (1.57) in the Northwest unit than it was in the Northeast unit (1.33). The highest softwood growth-to-removals ratio in the State (3.85) occurred in the Central unit, although its softwood resource was just 16 percent of the State total.

The State’s net growth of hardwoods averaged 222.34 million cubic feet annually. Slightly more of the hardwood net growth, 41 percent, occurred in the Northeast unit. Another 34 percent

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, 2015

Category	North-east	North-west	Central	South	State
<i>million cubic feet</i>					
Softwood					
Net growth	338.86	279.94	67.40	20.82	707.02
Removals	255.69	178.50	17.51	7.31	459.02
G/R ratio ^b	1.33	1.57	3.85	2.85	1.54
Total inventory	4,979.71	5,111.60	1,973.83	625.34	12,690.47
Hardwood					
Net growth	90.54	75.91	43.14	12.75	222.34
Removals	38.76	21.19	14.64	7.89	82.48
G/R ratio ^b	2.34	3.58	2.95	1.62	2.70
Total inventory	3,819.95	3,199.38	2,104.03	322.15	9,445.50
All species					
Net growth	429.40	355.85	110.55	33.57	929.36
Removals	294.45	199.69	32.15	15.20	541.49
G/R ratio ^b	1.46	1.78	3.44	2.21	1.72
Total inventory	8,799.66	8,310.98	4,077.85	947.48	22,135.97

^a Sums and totals may differ due to rounding.

^b Net growth/removals ratio.

occurred in the Northwest unit. The State’s hardwood removals averaged 82.48 million cubic feet annually. Most of the hardwood removals, 47 percent, came from the Northeast unit, and another 26 percent came from the Northwest unit. The hardwood growth-to-removals ratio was highest (3.58) in the Northwest unit and lowest in the South unit (1.62).

Aboveground biomass totaled 562.18 million dry weight tons in Florida. Softwood species made up 295.12 million tons, or >52 percent, of the total biomass (table 6). Hardwood species made up 267.06 million tons, or <48 percent, of total biomass.

The Northeast unit contained >40 percent of the softwood biomass, and the Northwest unit <40 percent. The Northeast unit contained most, 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, 2015

Category	North-east	North-west	Central	South	State
<i>Million dry weight tons</i>					
Softwood					
Biomass	119.14	116.99	44.17	14.81	295.12
Carbon	59.57	58.49	22.08	7.40	147.56
Hardwood					
Biomass	110.09	87.46	59.77	9.75	267.06
Carbon	55.04	43.73	29.88	4.87	133.53
Total					
Biomass	229.23	204.45	103.94	24.56	562.18
Carbon	114.61	102.22	51.97	12.28	281.09



Oak/Sabal Palm hammock. (photo by Tony Pernas, Bugwood.org)

Palm Trends in Florida

In 2015, palm forest type (all palms) classified as timberland covered 352.27 thousand acres in Florida (table 7), more than triple the 99.67 thousand acres it occupied at the time of the 1980 inventory. However, changes differed in the interim. From 1980 to 2007, area of palm type quadrupled to a peak of 401.61 thousand acres. A potential result of fire suppression and/or grazing reduction. A downward trend has occurred since 2007 with a 12 percent decrease to 352.27 thousand acres by 2015. The decrease correlates well with the identification of Texas Phoenix palm decline (TPPD) disease around 2006 (Harrison and Elliott 2009). The disease is also termed Lethal Bronzing.

The total number of cabbage palm trees increased by 25 percent from 86.66 million trees in 1980 to 108.34 million trees in 2015. However, that number had decreased by 16 percent to a low of 72.54 million trees from 1980 to 1995. Since 1995, the total number of cabbage palm trees has increased.

The biomass of cabbage palm trees decreased by half from 1980 to 1987 and has somewhat plateaued since with 14.28 million dry weight tons in 2015. The large decrease in number of cabbage palm trees > 40 feet tall between 1980 and 1987 contributed to the drop in biomass (fig. 2).

While the number of tall cabbage palm trees has decreased since 1980, the opposite has occurred regarding those < 40 feet tall (fig. 2). The number of shorter cabbage palms has accelerated

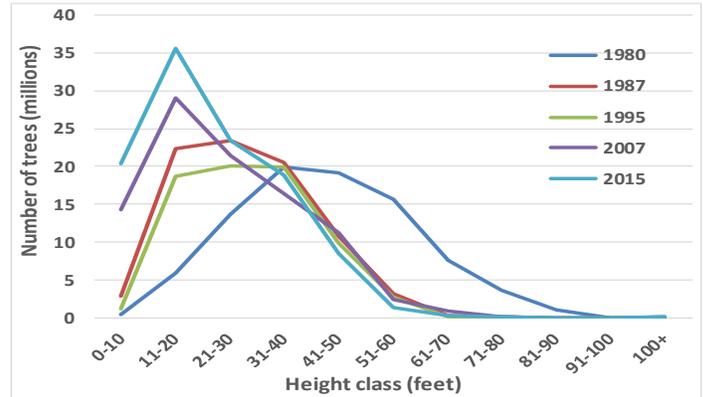


Figure 2—Number of cabbage palm trees by height class on timberland, Florida, 1980–2015.

since 1980 to a peak around 20 feet tall in 2015 of 36 million that was six times the 6 million that size in 1980. Again, fire suppression and/or grazing reduction could be the change agents.

Literature Cited

Harrison, N.A.; and Elliott, M.L. 2009. Texas Phoenix palm decline. Circular PP243. Institute of Food and Agricultural Sciences, University of Florida. 6 p.



Cabbage palm (*Sabal palmetto*). (photo by Rebekah D. Wallace, Bugwood.org)

Table 7—Changes in palms on timberland by year, Florida, 1980–2015

Year	Area of palm forest type <i>thousand acres</i>	Number of live trees ≥1 inch d.b.h. <i>million trees</i>	Biomass of live trees ≥1 inch d.b.h. <i>million dry weight tons</i>
1980	99.67	86.66	32.81
1987	122.45	83.37	15.96
1995	201.64	72.54	14.18
2007	401.61	95.57	13.75
2015	352.27	108.34	14.28

Source: Evaluator, accessed online April 4, 2017.

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