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FOREWORD

The U.S. Department of Agriculture Forest Service, Southern Research Station's (SRS) Forest Inventory and Analysis (FIA) research work unit and cooperating State forestry agencies conduct annual forest inventories of resources in the 13 Southern States (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia), the Commonwealth of Puerto Rico, and the U.S. Virgin Islands. In order to provide more frequent and nationally consistent information on America's forest resources, all research stations and their respective FIA work units conduct annual surveys with a common sample design. These surveys are mandated by law through the Agricultural Research Extension and Education Reform Act of 1998 (Farm Bill).

The primary objective in conducting these inventories is to gather the multi-resource information needed to formulate sound forest policies, provide information for economic development, develop forest programs, and provide a scientific basis to monitor forest ecosystems. The inventory data are used to provide an overview of forest resources that may include, but is not limited to, forest area, forest ownership, forest type, stand structure, timber volume, growth, removals, mortality, management activity, down woody material, and invasive species. The information presented is applicable at the State and survey unit level; although it provides the background for more intensive studies of critical situations, it is not designed to reflect resource conditions at small scales.

More information about Forest Service resource inventories is available in "Forest Resource Inventories: An Overview" (U.S. Department of Agriculture Forest Service 1992). More detailed information about sampling methodologies used in the annual FIA inventories can be found in "The Enhanced Forest Inventory and Analysis Program—National Sampling Design and Estimation Procedures" (Bechtold and Patterson 2005).

Data tables included in FIA reports are designed to provide an array of forest resource estimates, but additional tables can be obtained at http://fia.fs.fed.us/tools-data/default.asp. Additional information about the FIA program can be obtained at http://fia.fs.fed.us/.

Additional information about any aspect of this survey may be obtained from:

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U.S. Department of Agriculture Forest Service
Southern Research Station
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Knoxville, TN 37919
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HIGHLIGHTS FROM THE 2013 FOREST INVENTORY OF FLORIDA

Area

• Total forest area increased >2 percent since 2007 to <17.3 million acres in 2013. Forests continue to occupy about 50 percent of the land area of Florida.

• Timberland area totaled 15.4 million acres, down from 15.6 million acres in 2007, but this change involved reclassification of some timberland to reserved status. Hardwood forest types accounted for 7.8 million acres (51 percent) of timberland, and softwood forest types accounted for 7.0 million acres (45 percent). The remaining 4 percent consisted of timberland classified as nonstocked.

• Longleaf-slash pine was the predominant forest-type group and occupied 5.3 million acres. Oak-gum-cypress forest-type group was second in prevalence with 3.0 million acres. The oak-hickory forest-type group was third with 2.7 million acres, followed by loblolly-shortleaf pine with <1.7 million acres.

• Artificially regenerated timberland totaled 4.7 million acres, down from 5.2 million acres in 2007.

Ownership

• Nonindustrial private forest (NIPF) ownerships controlled 10.2 million acres (66 percent) of the State's timberland, up from 10.1 million in 2007. Forest industry owned <0.8 million acres (5 percent), down from 1.4 million in 2007. Public ownerships held >4.4 million acres of timberland (<29 percent), up from >4.1 million acres in 2007.

• Within the NIPF group, the private individual category (all NIPF owner classes other than corporate) owned <4.1 million acres of the State's timberland, down from 5.0 million acres in 2007. Whereas, the other corporate category owned >6.1 million acres, up from 5.1 million acres in 2007.

Volume

• In 2013, total all-live merchantable volume on timberland in Florida amounted to >20.8 billion cubic feet, up from 19.1 billion cubic feet in 2007.

• In 2013, planted stands accounted for 22 percent, or >4.5 billion cubic feet, of total volume on timberland in Florida, up from <4.3 billion cubic feet in 2007, but almost the same percentage it represented in 2007.

• With <11.9 billion cubic feet, softwoods made up 57 percent of all-live volume in the State. Hardwood volume totaled <9.0 billion cubic feet.

• Longleaf and slash pines accounted for 6.70 billion cubic feet, cypress 2.53 billion cubic feet, and loblolly and shortleaf pines 1.68 billion cubic feet of the softwood volume. Red oaks collectively accounted for 2.14 billion cubic feet, and tupelo and blackgum 1.79 billion cubic feet of the hardwood volume.

Net Growth and Removals

• Total net annual growth of all-live trees on timberland averaged 870 million cubic feet per year between 2007 and 2013, and removals averaged 570 million cubic feet during the same period.

• Net growth of softwood trees on timberland averaged 655 million cubic feet

per year in 2013, up from 567 million cubic feet in 2007. Removals of softwood trees averaged 467 million cubic feet per year in 2013, up from 444 million cubic feet in 2007.

• Net growth of hardwood trees averaged 215 million cubic feet per year in 2013, up from 176 million cubic feet in 2007. Removals of hardwood trees averaged 103 million cubic feet per year in 2013, down from 120 million cubic feet in 2007.

Forest Health

• Total mortality of live trees on Florida's timberland averaged 264 million cubic feet per year between 2007 and 2013. Hardwood species represented 141 million cubic feet (53 percent) and softwoods represented 123 million cubic feet (47 percent) of total mortality compared to 134 and 92 million cubic feet, respectively, in the previous survey period.

• Standing dead trees totaled 101 million on Florida's timberland, equivalent to 1.4 percent of the total all-live tree population. The leading identifiable causes of death to these snags, in descending order of prevalence, were disease, weather, fire, and competing vegetation.

• Chinese tallow was the most commonly detected invasive tree on Florida's forest land. Brazillian pepper was the most common shrub detected. Japanese honeysuckle was the most frequent vine, and cogongrass was the most frequently detected invasive grass. Some type of invasive plant was found on <34 percent of Florida's forested plots.

INTRODUCTION

The 1998 Farm Bill mandates forest inventory reporting every 5 years. Field measurements for the ninth inventory cycle of Florida's forests began in December of 2008 and the 5 years' worth that are used in this report were completed in December of 2013. In Florida, the strategy involves rotating measurements of five systematic samples (or panels), each of which represents about 20 percent of all plots in the State. A panel may take more or less than 1 year to complete. This bulletin provides inventory statistics and discusses the principal findings from the measurement of five panels from cycle 9 of annual inventory data. This dataset represented 100 percent of the sample plot population. Forest and timberland estimates, inventory volume, growth, removals, and mortality statistics are summarized from the data collected.

The eight previous inventories and State analytical reports were completed in 1936 (Southern Forest Experiment Station 1948), 1949 (Larson 1952), 1959 (Larson and Goforth 1961), 1970 (Knight and McClure 1971), 1980 (Bechtold and Knight 1982), 1987 (Bechtold and others 1990), 1995 (Brown 1999), and 2007 (Brown and others 2012). Tabular summaries of the 2013 resource statistics for Florida used in this report are available in Appendix D of this report. Continually updated or nonstatic "moving average" tabular summaries of the data can be obtained at http://srsfia2.fs.fed.us/states/florida.shtml. Click on the 2013 survey year and select "Tables". Tabular data for many of the previous surveys are also available at that Web site. However, caution is advised when making comparisons to previous surveys, as changes have occurred in plot design, collection procedures, and data processing algorithms. Methods have continued to evolve as changing technologies are adapted and implemented over time to improve Forest Inventory and Analysis (FIA) surveys. It is recommended to review the inventory methods section (appendix A) prior to any trend analysis.

Florida stretches 650 miles from Pensacola in the northwest to Miami at the southeast, and then another 150 miles across the Keys to Key West, the southernmost point in the United States. With elevations ranging from sea level to 345 feet, Florida's physiography is entirely classified as Coastal Plain (Fenneman 1938). However, Florida's Coastal Plain differs significantly from Coastal Plain regions in other Southern States. Surrounded by oceans and the warm Gulf Stream, the State's relatively mild winters moderate to near subtropical at the lower latitudes along the peninsula. This climate range creates conditions that support a great variety of tree species, more than any other State in the United States other than Hawaii (Florida Department of Agriculture and Consumer Services 1999). Wetlands, both the depressional and floodplain type, exist throughout the State. The riverine systems include blackwater, aquifer fed, and red river bottoms (which originate in Georgia and Alabama). Areas of sand hills and flatwoods are common. South Florida's shallow limestone substrate supports the Everglades, palm hammocks, and its coastal fringes harbor dense mangroves.

LAND USE

Area and condition of Florida's forest land are determined in many respects by trends in ownership and by land use changes. Change in forest land ownership often results in a change in the reasons for owning the land. Traditional timber harvesting or other forest-product-based uses may be replaced by desires to develop and manage habitat for wildlife or provide another recreational opportunity. Ownership change can also lead to land use change, particularly if plans are to convert forest land to new cropland, pasture, or urban use. Loss of forest land to urbanization continues to be a concern. These losses are considered diversions from forest land to nonforest uses. Owner decisions can also increase forest land, either through planting efforts or by allowing idle cropland or pasture to revert naturally to forest. These increases are considered additions to forest land from nonforest sources.

The 2010 Census (U.S. Department of Commerce, Bureau of the Census 2012) reported that nearly 18.8 million people lived in Florida, or about 348 people per square mile. Florida ranked eighth in population density behind seven northeastern coastal states. At the time of the 2000 Census, the population was approaching 16.0 million people, or about 300 people per square mile (U.S. Department of Commerce, Bureau of the Census 2002). The additional 2.8 million people living in the State, mostly from net migration, made Florida one of the fastest growing States in the country. Increased population can bring increased pressure on finite natural resources, including the State's forest land.

Table 1 summarizes the broad category distribution of land in Florida by land use since 2007. Some general trends are apparent. Total land area of Florida is almost 34.6 million acres, including 268,000 acres of noncensus water defined by the U.S. Bureau of the Census as land. Forests occupy almost 50 percent of the State's land area, or almost 17.3 million acres. The remaining 17.3 million acres of land reflect a variety of nonforest uses such as cropland, pasture, urban, and the aforementioned noncensus water. Total nonforest land decreased by about 185,000 acres between 2007 and 2013. However, this can be misleading because it involved fluctuations in the noncensus water figures between the 2000 census and the 2010 census, which was probably related to wet/dry cycles affecting the estimates. Disregarding the noncensus water changes, land used for cropland has declined by 4 percent since 2007 and pasture has decreased by

Table 1—Land area by land use and survey year, Florida

Land use	Survey year 2007[a]	2013[b]
	thousand acres	
Forest land		
Timberland	15,597.8	15,392.7
Reserved	1,131.8	1,570.0
Other forest[c]	167.5	309.1
Total	16,897.1	17,271.8
Nonforest land		
Cropland	2,661.3	2,551.5
Pasture	3,733.4	3,618.0
Other nonforest[d]	10,601.6	10,856.8
Noncensus water[e]	482.9	268.2
Total	17,479.2	17,294.5
All land[f]	34,376.3	34,566.3
Census water	7,706.5	7,518.4
Total area	42,082.8	42,084.7
Percent land area forested	49.2	50.0

Numbers in rows and columns may not sum to totals due to rounding.

[a] From FIADB 12/15/2016.

[b] From FIADB 5/1/2015.

[c] Unproductive lands incapable of producing 20 cubic feet of wood per acre per year due to adverse site conditions.

[d] Includes areas classified as urban, industrial, swampland, and other nonforest, etc.

[e] Areas classed as water by FIA standards, but defined by U.S. Bureau of Census as land.

[f] From the U.S. Bureau of Census (2000, 2010).

3 percent since 2007. Another trend in land use is the increase in other nonforest land (which includes urban, industrial, and other developed areas), which has risen by more than 2 percent since 2007 to almost 10.9 million acres in 2013. Realistically, the losses in agricultural nonforest uses were offset by gains in urban nonforest uses and the actual overall change was a <1 percent net increase in nonwater related nonforest uses. Tracking these trends is important because shifts in agriculture and urban land uses often directly impact the extent and condition of Florida's forest land. Historically, clearing land for agriculture was the primary reason for loss of forest. Although conversions to agriculture still occur, the principal threat to forest land in recent decades has been urbanization, as evidenced by the increase in area of other nonforest land (table 1). The loss of forest land due to urbanization is permanent, whereas clearing of forest land for crops or pasture can be reversed in many instances. In fact, idle cropland and pasture continue to be the primary source for new acres of forest land, either from planting or from natural reversion.

Timberland Classification

As shown in table 1, 15.4 million acres (89 percent) of Florida's 17.3 million acres in forest were classified as timberland. These 15.4 million acres were defined as capable of producing at least 20 cubic feet of industrial wood per acre per year and not classified as reserved and withdrawn from timber production. The area of timberland in 2013 was down >1 percent from 15.6 million acres in 2007. However, this change largely resulted from national-level decisions to standardize classification of certain timberlands as reserved based on ownership criteria established in FIA field manual version 6.0 (U.S. Department of Agriculture Forest Service 2012). In Florida, this change increased reserved timberland from >1.1 million acres in 2007 to <1.6 million acres in 2013. These acres classified as reserved timberland are generally under public ownership and primarily located in the national forest wilderness areas, national wildlife refuges and preserves, and the national parks. The remaining other forest land consisted largely of unproductive or adverse sites. The area of other forest land has increased from 2007 levels. Reasons for this change are unclear and could be related to the reclassification decision involving reserved acres. Since the acres classified as timberland are the ones subject to viable forest management activities and thus are most apt to influence forest economics of the State, the remainder of this report will concentrate on timberland.

Timberland Distribution

FIA surveys divide Florida into four units or regions (fig. 1). The Northwest unit is that portion along the Gulf of Mexico bordering both Alabama and Georgia, it is commonly referred to as the panhandle of the State. The Northeast unit is that portion of the State bordering only Georgia while fronting on both the Gulf of Mexico and the

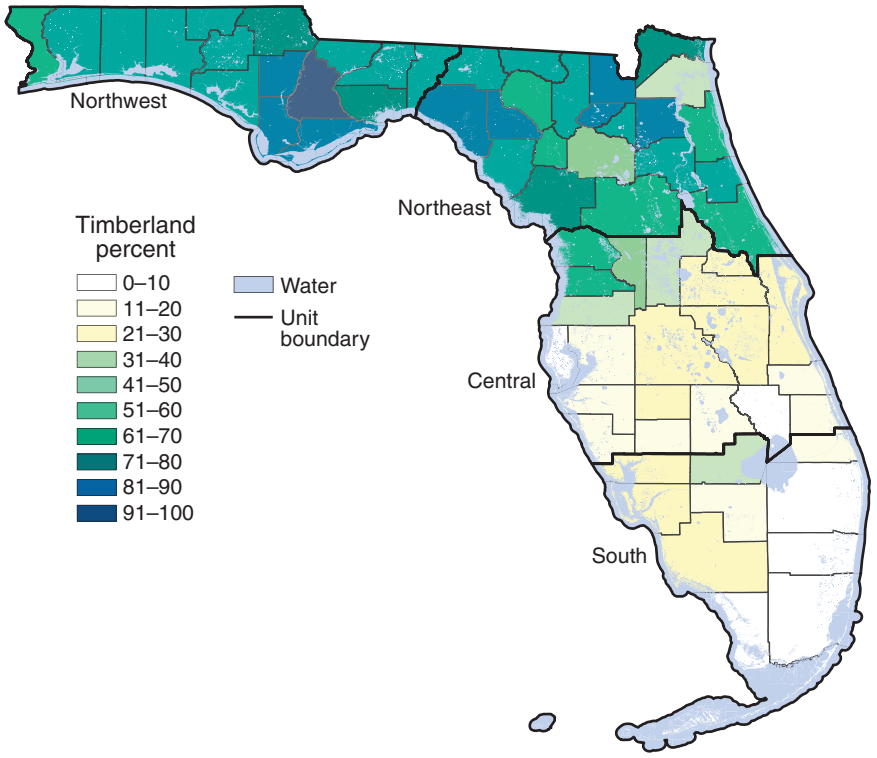

Figure 1—Timberland as a percentage of all land by county, Florida, 2013.

Atlantic Ocean. The Central unit is roughly the center one-fourth of the State and borders only the Northeast unit above while fronting both the Gulf of Mexico and the Atlantic Ocean. The South unit is the entire southern end of the State, only bordering the Central unit to its north while otherwise surrounded by ocean.

Since 2007, area of cropland decreased in three of the four survey units (tables 1A, 1B, 1C, and 1D). Only the Northeast unit showed an increase in cropland. Area in pasture decreased in three of the four units as well. Only the Northwest unit showed an increase in pasture. The area of other nonforest land (primarily urban) increased in three of the four units, although the only decrease was <1 percent in the Central unit. Sixty-five percent of the State's total increase in area of other nonforest land occurred in the Northeast unit.

Table 1A—Land area by land use and survey year, Northwest unit, Florida

Land use	Survey year 2007[a]	2013[b]
	thousand acres	
Forest land		
Timberland	5,469.0	5,443.5
Reserved	87.1	92.6
Other forest[c]	51.7	53.3
Total	5,607.8	5,589.4
Nonforest land		
Cropland	322.0	291.7
Pasture	249.2	269.2
Other nonforest[d]	1,003.1	1,069.8
Noncensus water[e]	41.7	28.1
Total	1,616.0	1,658.8
All land[f]	7,223.8	7,248.2
Census water	1,264.9	1,241.4
Total area	8,488.7	8,489.6
Percent land area forested	77.6	77.1

Numbers in rows and columns may not sum to totals due to rounding.

[a] From FIADB 12/15/2016.

[b] From FIADB 5/1/2015.

[c] Unproductive lands incapable of producing 20 cubic feet of wood per acre per year due to adverse site conditions.

[d] Includes areas classified as urban, industrial, swampland, and other nonforest, etc.

[e] Areas classed as water by FIA standards, but defined by U.S. Bureau of Census as land.

[f] From the U.S. Bureau of Census (2000, 2010).

Table 1B—Land area by land use and survey year, Northeast unit, Florida

Land use	Survey year 2007[a]	2013[b]
	thousand acres	
Forest land		
Timberland	6,558.9	6,397.1
Reserved	124.6	172.3
Other forest[c]	18.1	12.0
Total	6,701.6	6,581.4
Nonforest land		
Cropland	334.7	342.6
Pasture	766.6	737.0
Other nonforest[d]	1,822.8	1,988.2
Noncensus water[e]	73.4	50.1
Total	2,997.5	3,117.9
All land[f]	9,699.1	9,699.3
Census water	1,084.8	1,084.9
Total area	10,783.9	10,784.2
Percent land area forested	69.1	67.9

Numbers in rows and columns may not sum to totals due to rounding.

[a] From FIADB 12/15/2016.

[b] From FIADB 5/1/2015.

[c] Unproductive lands incapable of producing 20 cubic feet of wood per acre per year due to adverse site conditions.

[d] Includes areas classified as urban, industrial, swampland, and other nonforest, etc.

[e] Areas classed as water by FIA standards, but defined by U.S. Bureau of Census as land.

[f] From the U.S. Bureau of Census (2000, 2010).

Table 1C—Land area by land use and survey year, Central unit, Florida

Land use	Survey year 2007[a]	2013[b]
	thousand acres	
Forest land		
Timberland	2,514.2	2,592.5
Reserved	236.9	245.6
Other forest[c]	30.6	85.9
Total	2,781.7	2,924.0
Nonforest land		
Cropland	924.3	891.5
Pasture	2,222.5	2,131.3
Other nonforest[d]	3,916.3	3,899.9
Noncensus water[e]	79.4	120.1
Total	7,142.5	7,042.8
All land[f]	9,924.2	9,966.8
Census water	1,891.3	1,849.2
Total area	11,815.5	11,816.0
Percent land area forested	28.0	29.3

Numbers in rows and columns may not sum to totals due to rounding.

[a] From FIADB 12/15/2016.

[b] From FIADB 5/1/2015.

[c] Unproductive lands incapable of producing 20 cubic feet of wood per acre per year due to adverse site conditions.

[d] Includes areas classified as urban, industrial, swampland, and other nonforest, etc.

[e] Areas classed as water by FIA standards, but defined by U.S. Bureau of Census as land.

[f] From the U.S. Bureau of Census (2000, 2010).

Table 1D—Land area by land use and survey year, South unit, Florida

Land use	Survey year 2007[a]	2013[b]
	thousand acres	
Forest land		
Timberland	1,055.6	959.5
Reserved	683.1	1,059.6
Other forest[c]	67.2	157.9
Total	1,805.9	2,177.0
Nonforest land		
Cropland	1,080.4	1,025.8
Pasture	495.2	480.6
Other nonforest[d]	3,859.4	3,898.9
Noncensus water[e]	288.4	69.9
Total	5,723.4	5,475.2
All land[f]	7,529.3	7,652.2
Census water	3,465.5	3,342.9
Total area	10,994.8	10,995.1
Percent land area forested	24.0	28.4

Numbers in rows and columns may not sum to totals due to rounding.

[a] From FIADB 12/15/2016.

[b] From FIADB 5/1/2015.

[c] Unproductive lands incapable of producing 20 cubic feet of wood per acre per year due to adverse site conditions.

[d] Includes areas classified as urban, industrial, swampland, and other nonforest, etc.

[e] Areas classed as water by FIA standards, but defined by U.S. Bureau of Census as land.

[f] From the U.S. Bureau of Census (2000, 2010).

Timberland as a percentage of land area by county (fig. 1) shows the most heavily forested part of the State to be the Northwest unit followed by the Northeast unit. Forests covered 77 percent of the land area in the Northwest unit, and 68 percent in the Northeast unit. The Central unit had 29 percent forest coverage and the South unit had 28 percent. Liberty County was the most forested in the State with 95 percent coverage. Another eight counties had more than 80 percent forest coverage, all in the two northern units of the State. Only two counties in the southern half of the State (Citrus and Hernando) had at least 50 percent forest coverage, largely because the Withlacoochee State forest is located there.

TIMBERLAND STATISTICS: AREA

Trends

The 15.4 million acres of timberland recorded for Florida in 2013 appeared to rekindle a downward trend in area of timberland for the State (fig. 2A) which existed from 1970 to 1995. However, a nationally instituted change by FIA in the definition of reserved timberland was responsible for many of the timberland acres moving to the reserved category. The 200,000-acre decrease represented a >1 percent drop from the 15.6 million acres reported for the 2007 survey. Appendix D contains 36 tables with information describing this resource. In addition to the definition-induced change in timberland, the expansion of the major metropolitan areas found across the State increased the area of the "other nonforest land" category (table 1), often at the expense of previously forested areas. This urbanization was the leading cause of any real loss of timberland in the State.

Occurrence

The State's overall decrease in timberland did not occur across all four survey units of the State. The Northwest unit (fig. 2B), the Northeast unit (fig. 2C), and the South unit (fig. 2E) each declined. However, the Central unit (fig. 2D) actually increased slightly in timberland area since 2007. The Central unit (fig. 2D) continued the increase in area of timberland established in the 2007 survey period, where it was thought that the loss of citrus acreage and altered fire and grazing regimes contributed. However, caution is advised regarding detailed analysis of the timberland loss because of the aforementioned reclassification of certain timberland areas into a reserved status under FIA field manual 6.0 guidelines. These changes potentially complicate accurate assessment of true timberland change at scales smaller than State level, particularly when the changes are nominal.

Area of timberland in the Northeast unit (fig. 2C) decreased by >2 percent, or 162,000 acres since 2007. This represented the largest acreage decrease of the State's four survey units. The Northwest unit (fig. 2B) decreased by 0.5 percent, or 26,000 acres. This represented the smallest acreage decrease of the four units. The South unit (fig. 2E) decreased by >9 percent, or by 96,000 acres. This represented the largest percentage decrease. In contrast, the Central unit (fig. 2D) increased by >3 percent, or 78,000 acres. This represented the only increase of the four units.

Ownership

The "other corporate" category (all corporate-owned timberland other than forest industry) with >6.1 million acres continued to control most (40 percent) of Florida's timberland in 2013 (fig. 3A). The "private individual" category (all NIPF owner classes other than corporate) with 4.0 million acres, was second at 26 percent. The "State and local" category of public ownerships was third with >2.7 million acres, or 18 percent of total timberland. National forest was fourth with <1.2 million acres (7 percent), and forest industry was next with 0.8 million acres (5 percent). Other federal lands accounted for <0.6 million acres, or <4 percent.

Area of timberland owned by the "other corporate" category dominated each of the four survey units. However, some differences existed by survey unit. In the Northwest unit (fig. 3B), "other corporate" owned 38 percent, "private individual" owned 28 percent, "State and local" owned 15 percent, and "forest industry" owned just 1 percent. In the Northeast unit (fig. 3C), "other corporate" owned 42 percent, "private individual" owned 26 percent, "State and local" owned 13 percent, and "forest industry" owned 10 percent. In the Central unit (fig. 3D), "other corporate" owned 39 percent, "State and local" owned 28 percent, "private individual" owned 24 percent, and "forest industry" owned <1 percent. In the South unit (fig. 3E),

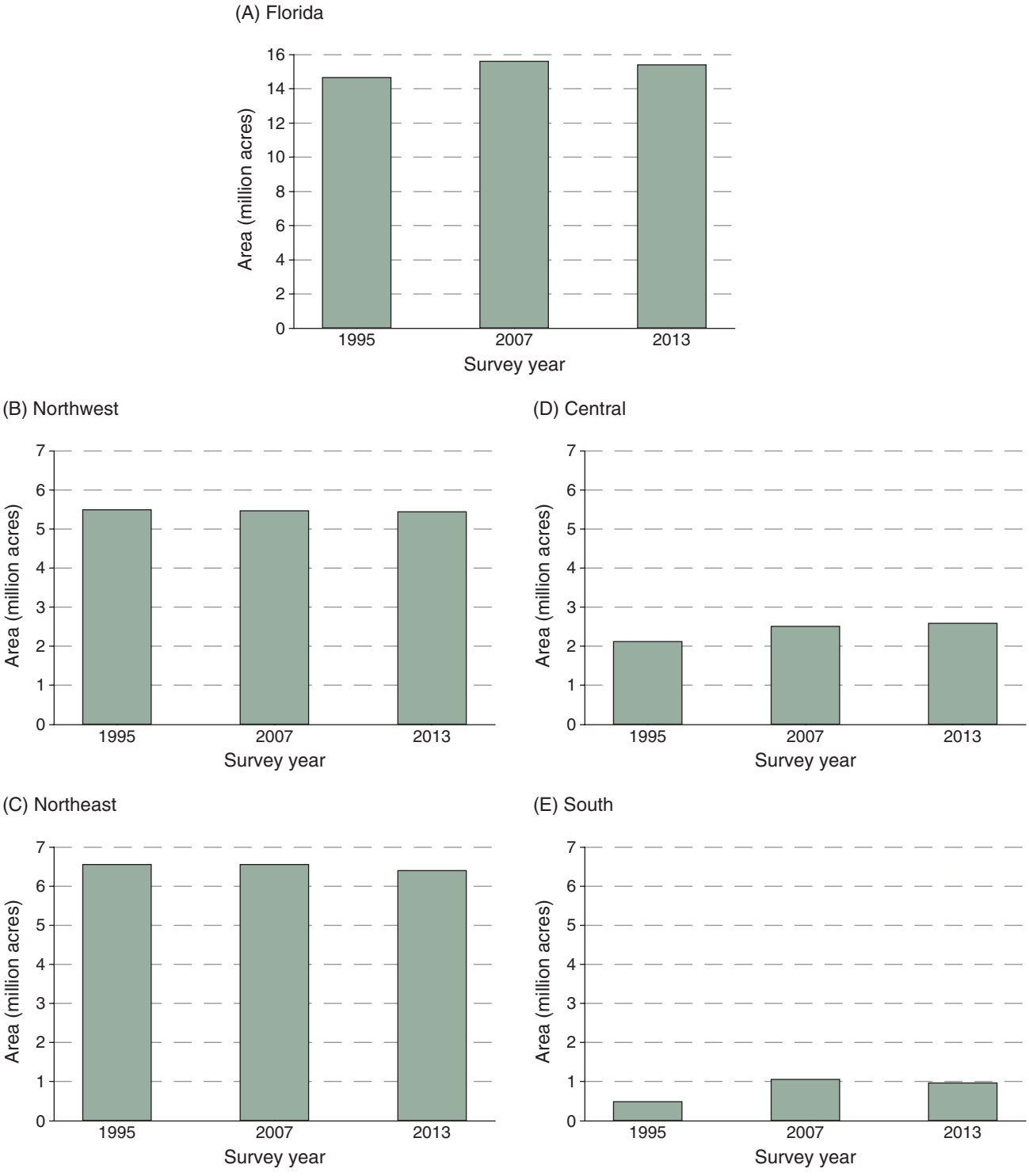

Figure 2—Area of timberland in (A) Florida by survey year and survey unit (B) Northwest, (C) Northeast, (D) Central, and (E) South. Data for 1995 from Brown (1999), 2007 from FIADB 12/15/16, and 2013 from FIADB 5/1/2015.

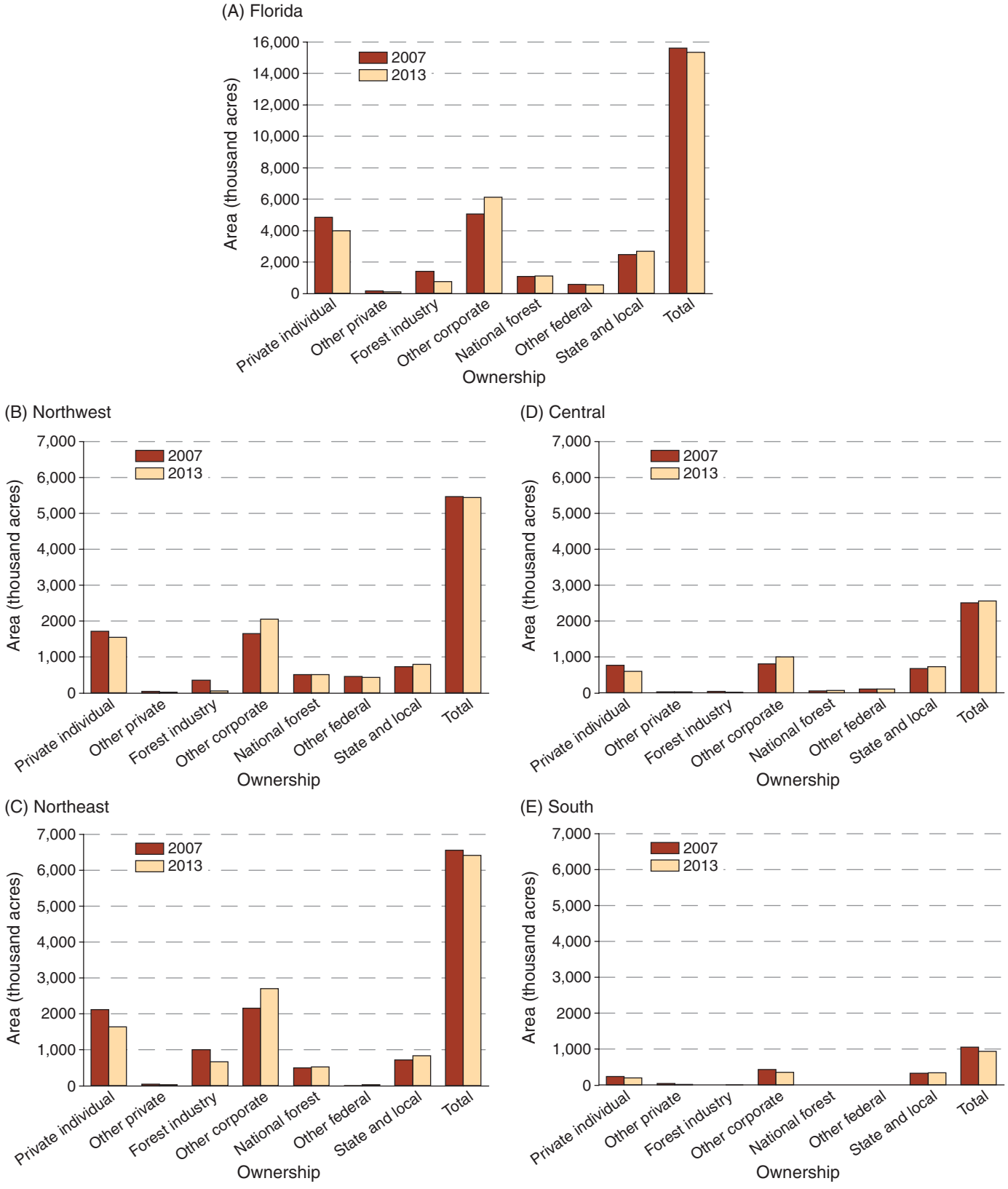

Figure 3—Area of timberland in (A) Florida by ownership, survey year, and survey unit (B) Northwest, (C) Northeast, (D) Central, and (E) South. Data for 2007 from FIADB 12/15/2016 and for 2013 from FIADB 5/1/2015.

"other corporate" owned 39 percent, "State and local" owned 36 percent, "private individual" owned 21 percent, and "forest industry" owned >1 percent.

The decrease in area of Florida's timberland was also distributed differently by ownership category. At the State level, most of the decrease in timberland was recorded in the private individual and forest industry land categories. Some of the State's timberland decrease occurred in the other Federal category through reclassification of areas to a reserved status. Area of "private individual" owned timberland decreased <18 percent since 2007, from >4.8 million to 4.0 million acres in 2013. Forest industry timberland decreased <46 percent from >1.4 million to <0.8 million acres in 2013. Much of the lost private individual and forest industry category timberland was absorbed by increased area of timberland in the "State and local" and "other corporate" ownership categories.

By survey unit, for instance, the decreased timberland in the private individual owner category occurred in each of the State's four survey units. The decreased timberland in the forest industry category occurred in three of the four survey units. The only increase occurred from a nominal amount recorded in the South unit. "Forest industry" timberland decreased most in the Northwest unit, where it decreased by 83 percent.

The increased area of "other corporate" timberland often corresponds with the decreased area of forest industry timberland as seen in the figure 3 graphs. The other corporate timberland acres are largely held in Timber Investment and Management Organizations, Real Estate Investment Trusts, Limited Liability Corporations, and similar organizations. Whether these timberlands remain in the timber base and contribute to the State's wood supply is unclear and depends on the new landowners' management goals and priorities.

More of the State's 4.0 million acres of "private individual" timberland, 41 percent, was located in the Northeast unit, and 39 percent was located in the Northwest unit. The Central unit accounted for 15 percent, and the South unit accounted for the remaining 5 percent.

Most of the State's 0.8 million acres of "forest industry" timberland, 88 percent, was located in the Northeast unit, and 8 percent was located in the Northwest unit. The Central unit accounted for 3 percent, and the South unit accounted for the remaining 1 percent.

Most of the State's 6.1 million acres of "other corporate" timberland, 44 percent, was located in the Northeast unit, and <34 percent was located in the Northwest unit. The Central unit accounted for >16 percent, and the South unit accounted for the remaining 6 percent.

The State's >1.1 million acres of "national forest" timberland was closely divided between >47 percent located in the Northeast unit, and >46 percent located in the Northwest unit. The Central unit accounted for the remaining >6 percent. None exists in the South unit.

Most of the State's <0.6 million acres of "other Federal" timberland, 79 percent, was located in the Northwest unit, and 19 percent was located in the Central unit. The Northeast unit accounted for the remaining 2 percent, as none was recorded for the South unit.

Florida's >2.7 million acres of "State and local" timberland was well distributed among the units, with 31 percent located in the Northeast unit, <30 percent located in the Northwest unit, 27 percent located in the Central, and <13 percent located in the South unit.

Forest Types

Florida's boundaries encompass climatic zones ranging from temperate to sub-tropical. The State's geography ranges from sea-level, sand hills and ridges, to rolling uplands. The State contains many physiographic classes, including cypress ponds, pocosins, drains, swamps, floodplains, rolling uplands, flatwoods, and deep sands. These conditions permit many forest types and even transitional types to flourish. Among these types, numerous tree species exist, some less common than others and some even rare. For this reason, the accompanying species list is limited to some 143 tree species subject to identification on sample plots (appendix C). Furthermore, the most common species associations can be combined into forest types. The individual forest types are named for the species forming a plurality of the stocking. Forest types are collapsed into forest-type groups for better graphical representation in the figures. The forest-type groups of longleaf-slash pine, loblolly-shortleaf pine, other eastern softwoods, oak-pine, oak-hickory, oak-gum-cypress, elm-ash-cottonwood, other hardwoods, tropical hardwoods, exotic hardwoods, and nonstocked are used for Florida in this report.

Collectively, the hardwood forest types accounted for 7.8 million acres, or 51 percent of Florida's timberland, and softwood forest types accounted for <7.0 million acres, or 45 percent. Nonstocked areas of >0.6 million acres made up the remaining 4 percent.

The most common forest-type group that occurred in Florida was longleaf-slash pine (fig. 4A). The longleaf-slash pine forest-type group accounted for >5.3 million acres, or 35 percent, of Florida's timberland. Oak-gum-cypress types were next with 3.0 million acres, or >19 percent of the State's timberland. Oak-hickory types were third with 2.7 million acres, or >17 percent of the State's timberland. The area of timberland classified as loblolly-shortleaf forest type was fourth and accounted for <1.7 million acres, or <11 percent of the State total. Oak-pine forest types were a close fifth with >1.5 million acres, or 10 percent. Areas having insufficient stocking of trees to determine a forest type were classified as nonstocked. Nonstocked timberland accounted for >0.6 million acres.

Most of the State's >5.3 million acres of longleaf-slash pine forest-type timberland, 45 percent, was located in the Northeast unit, and 39 percent was located in the Northwest unit. The Central unit accounted for <11 percent, and the South unit accounted for the remaining 5 percent.

Most of the State's nearly 3.0 million acres of oak-gum-cypress forest type timberland, <42 percent, was located in the Northeast unit, and <31 percent was located in the Northwest unit. The Central unit accounted for 22 percent, and <6 percent was recorded in the South unit.

Most of the State's 2.7 million acres of oak-hickory forest type, 41 percent, was located in the Northeast unit. The Central unit accounted for <28 percent, and 27 percent occurred in the Northwest unit. The remaining 4 percent was found in the South unit.

Most of the State's <1.7 million acres of loblolly-shortleaf pine forest-type timberland, <57 percent, was located in the Northwest unit, and <40 percent was located in the Northeast unit. The Central unit accounted for >3 percent, and the South unit accounted for only a trace amount.

Most of the State's >1.5 million acres of oak-pine forest-type timberland, <41 percent, was located in the Northwest unit, and 39 percent was located in the Northeast unit. The Central unit accounted for <16 percent, and the South unit accounted for the remaining 4 percent.

As might be expected, the forest-type group order of prevalence at the State level was slightly different by survey unit. In the Northwest unit (fig. 4B), the most common forest-type group present was longleaf-slash pine, which accounted for 38 percent of the

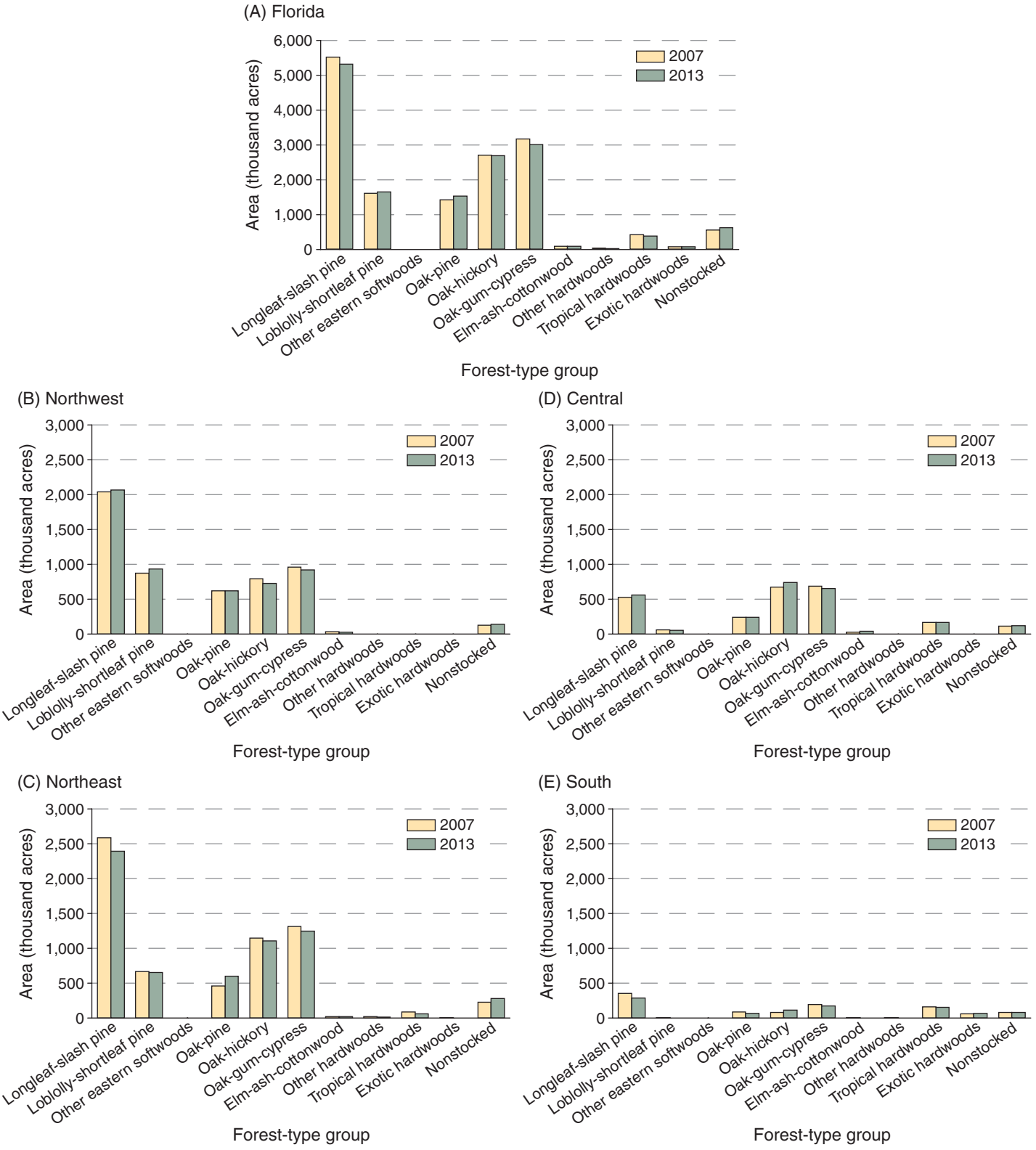

Figure 4—Area of timberland in (A) Florida by forest-type group, survey year, and survey unit (B) Northwest, (C) Northeast, (D) Central, and (E) South. Data for 2007 from FIADB 12/15/2016 and for 2013 from FIADB 5/1/2015.

unit's timberland. Loblolly-shortleaf pine type was second with 17 percent of the timberland, and a close third was oak-gum-cypress type with <17 percent. Oak-pine type came in fourth with >11 percent. The Northeast unit's (fig. 4C) order of forest-type prevalence most emulated that of the State as a whole. Longleaf-slash pine type accounted for >37 percent, oak-gum-cypress <20 percent, oak-hickory >17 percent, loblolly-shortleaf pine 10 percent, and oak-pine type >9 percent of the timberland. The Central unit (fig. 4D) was the only unit not dominated by the longleaf-slash pine type. In the Central unit, oak-hickory forest type accounted for the most area with <29 percent of the timberland, followed by oak-gum-cypress type with 25 percent, longleaf-slash pine type with <22 percent, and then oak-pine type with 9 percent. Tropical hardwoods were next with >6 percent. In the South unit (fig. 4E), longleaf-slash pine type accounted for 30 percent of the timberland. Oak-gum-cypress type was second with 18 percent, tropical hardwoods were third with 16 percent, and oak-hickory type was fourth with 12 percent.

Cypress is an important ecological and economic component of the broad oak-gum-cypress forest type group. Hence, a separate section focusing on the status of cypress forest types in Florida for 2013 is mentioned later in this report.

Stand-Size Class

For a broad-scale portrayal of the State's timberland, FIA classified forest stands into three major stand-size classes. Those few acres with insufficient stocking to determine forest type or stand size were allocated to the nonstocked category. The classes were large, medium, and small. The large stand-size class correlates to the sawtimber-size class, the medium stand-size class correlates to the poletimber-size class, and the small stand-size class correlates to the sapling-seedling-size class. For all forest-type groups, the small stand size included stands at least 10 percent stocked with trees more than half of which were from 1.0 to 4.9 inches in diameter at breast height (d.b.h.). For softwood forest types, the medium stand size included stands at least 10 percent stocked with trees more than half of which were from 5.0 to 8.9 inches d.b.h., and the large stand size included stands at least 10 percent stocked with trees more than half of which were 9.0 inches d.b.h. and larger. The definition for hardwood forest types only differs in the diameter threshold, where medium size ranges from 5.0 to 10.9 inches d.b.h., and large size requires 11.0 inches d.b.h. and larger.

The large diameter size class covered <6.6 million acres, or 42 percent, of Florida's timberland in 2013. Based on major forest-type groupings, most of the large diameter size stands, 60 percent, were composed of hardwood forest types (fig. 5A). Softwood forest types made up 40 percent. The area in a large diameter size class has increased for both softwoods and hardwoods since the 2007 survey.

The medium diameter size class covered 4.4 million acres, or <29 percent, of Florida's timberland in 2013. Based on major forest-type groupings, most of the medium diameter size stands, 63 percent, were composed of softwood forest types (fig. 5A). Hardwood forest types made up 37 percent. The area in a medium diameter size class has increased for softwoods, but decreased for hardwoods since 2007.

The small diameter size class covered 3.9 million acres, or 25 percent, of Florida's timberland in 2013. Based on major forest-type groupings, most of the small diameter size stands, 59 percent, were composed of hardwood forest types (fig. 5A). Softwood forest types made up 41 percent. The area in a small diameter size class has decreased for both softwoods and hardwoods since 2007.

The nonstocked category described above accounted for >0.6 million acres, or the remaining 4 percent, of Florida's timberland. The area of nonstocked stands has increased slightly since 2007.

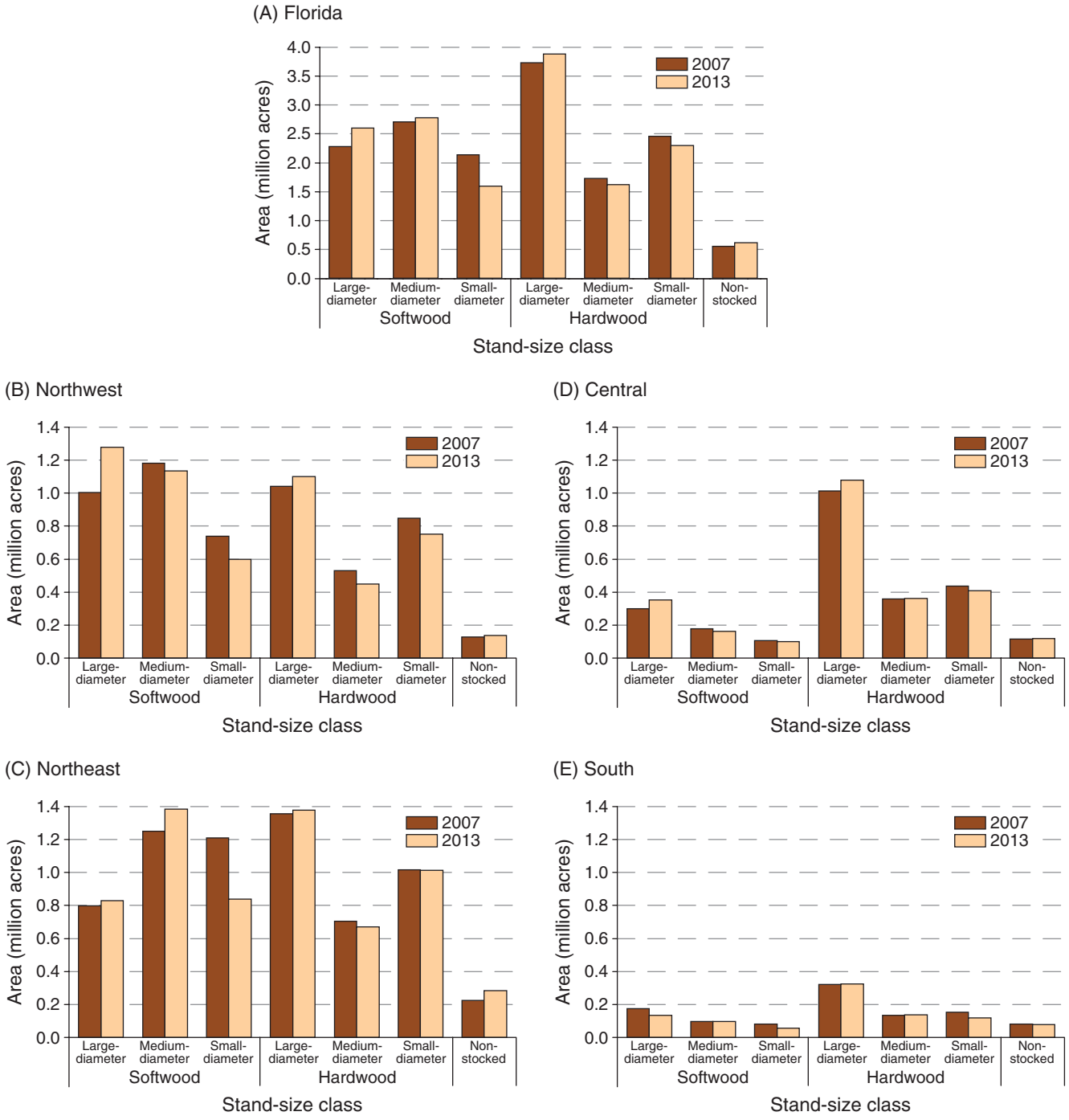

Figure 5—Area of timberland in (A) Florida by stand-size class, major forest-type group, survey year, and survey unit (B) Northwest, (C) Northeast, (D) Central, and (E) South. Data for 2007 from FIADB 12/15/2016 and for 2013 from FIADB 5/1/2015.

Just as forest-type distribution by survey unit differed slightly from those at the State level, so the stand-size class distribution across the major forest-type categories had differences by survey unit from the statewide distribution. For instance, whereas hardwood forest types dominated the statewide distribution of large diameter size stands, the softwood forest types dominated large diameter size stands in the Northwest unit.

In the Northwest unit (fig. 5B), the large diameter size class covered <2.4 million acres, or <44 percent, of the unit's timberland in 2013. Based on major forest-type groupings, most of the large diameter size stands, <54 percent, consisted of softwood forest types. Hardwood forest types made up 46 percent. The medium diameter size class covered <1.6 million acres, or 29 percent, of the unit's timberland in 2013. Softwoods made up <72 percent, and hardwoods made up 28 percent. The small diameter size class covered >1.3 million acres, or 25 percent, of the unit's timberland in 2013. Softwoods made up 44 percent, and hardwoods made up 56 percent. Across the Northwest unit, the large diameter size class increased for both softwoods and hardwoods. However, both the medium and small diameter size classes decreased for softwoods and hardwoods. The area of nonstocked stands in this unit increased slightly to 138,000 acres.

In the Northeast unit (fig. 5C), the large diameter size class covered 2.2 million acres, or >34 percent, of the unit's timberland in 2013. Based on major forest-type groupings, most of the large diameter size stands, >62 percent, consisted of hardwood forest types. Softwood forest types made up <38 percent. The medium diameter size class covered <2.1 million acres, or 32 percent, of the unit's timberland in 2013. Softwoods made up >67 percent, and hardwoods made up <33 percent. The small diameter size class covered <1.9 million acres, or 29 percent, of the unit's timberland in 2013. Hardwoods made up <55 percent, and softwoods made up >45 percent. Across the Northeast unit, the large diameter size class increased slightly for both softwoods and hardwoods. However, the medium diameter size classes increased for softwoods and decreased for hardwoods. The small diameter size class for softwoods had a large decrease, whereas that for hardwoods changed little. The area of nonstocked stands increased most in this unit to 284,000 acres.

In the Central unit (fig. 5D), the large diameter size class covered >1.4 million acres, or >55 percent, of the unit's timberland in 2013. Based on major forest-type groupings, most of the large diameter size stands, >75 percent, consisted of hardwood forest types. Softwood forest types made up <25 percent. The medium diameter size class covered >0.5 million acres, or >20 percent, of the unit's timberland in 2013. Hardwoods made up 69 percent, and softwoods made up 31 percent. The small diameter size class covered 0.5 million acres, or 20 percent, of the unit's timberland in 2013. Hardwoods made up 80 percent, and softwoods made up 20 percent. Across the Central unit, the large diameter size class increased for both softwoods and hardwoods. However, the medium diameter size classes decreased for softwoods and changed little for hardwoods. The small diameter size class decreased slightly for softwoods and somewhat more for hardwoods. The area of nonstocked stands changed the least in this unit to 120,000 acres.

In the South unit (fig. 5E), the large diameter size class covered <0.5 million acres, or >48 percent, of the unit's timberland in 2013. Based on major forest-type groupings, most of the large diameter size stands, >70 percent, consisted of hardwood forest types. Softwood forest types made up <30 percent. The medium diameter size class covered >0.2 million acres, or 25 percent, of the unit's timberland in 2013. Hardwoods made up 58 percent, and softwoods made up 42 percent. The small diameter size class covered <0.2 million acres, or 18 percent, of the unit's timberland in 2013. Hardwoods made up >67 percent and softwoods made up <33 percent. Across the South unit,

the large diameter size class decreased for softwoods and increased slightly for hardwoods. The medium diameter size class was unchanged for softwoods and increased slightly for hardwoods. The small diameter size class for both softwoods and hardwoods had a large decrease. The area of nonstocked stands experienced the only decrease in this unit to 79,000 acres.

Stand Origin

Determining whether a forest stand was established naturally or through planting, helps characterize the State's timberland resource and provides important information to the State's wood-using industry. In 2013, >4.7 million acres, or <31 percent, of Florida's timberland exhibited clear evidence of artificial regeneration (fig. 6A), compared to 5.2 million acres in 2007. For the purposes of this report, those acres are considered to be planted and the terms herein used synonymously.

More than 4.0 million acres, or 85 percent of the area with evidence of artificial regeneration, was classified in the softwood forest-type group, compared to 4.5 million acres in 2007. Hardwoods accounted for 11 percent, and the remaining <4 percent was classified in the nonstocked category (app. table D.6). It is important to note that the oak-pine forest types are classified under the hardwood forest-type group. In fact, oak-pine forest types accounted for 52 percent of the planted hardwood forest-type group timberland. These planted oak-pine stands typically result from varying degrees of planting spacing, survival, and hardwood competition. Under these circumstances, forest-type classifications compute to mixed-species stands from the species stocking ratios present. However, some acres are intentionally planted to specific hardwood species. Of the >0.5 million planted hardwood acres, 269,000 acres were oak-pine forest types and 201,000 were oak-hickory forest types. Also, 34,000 acres were classified as

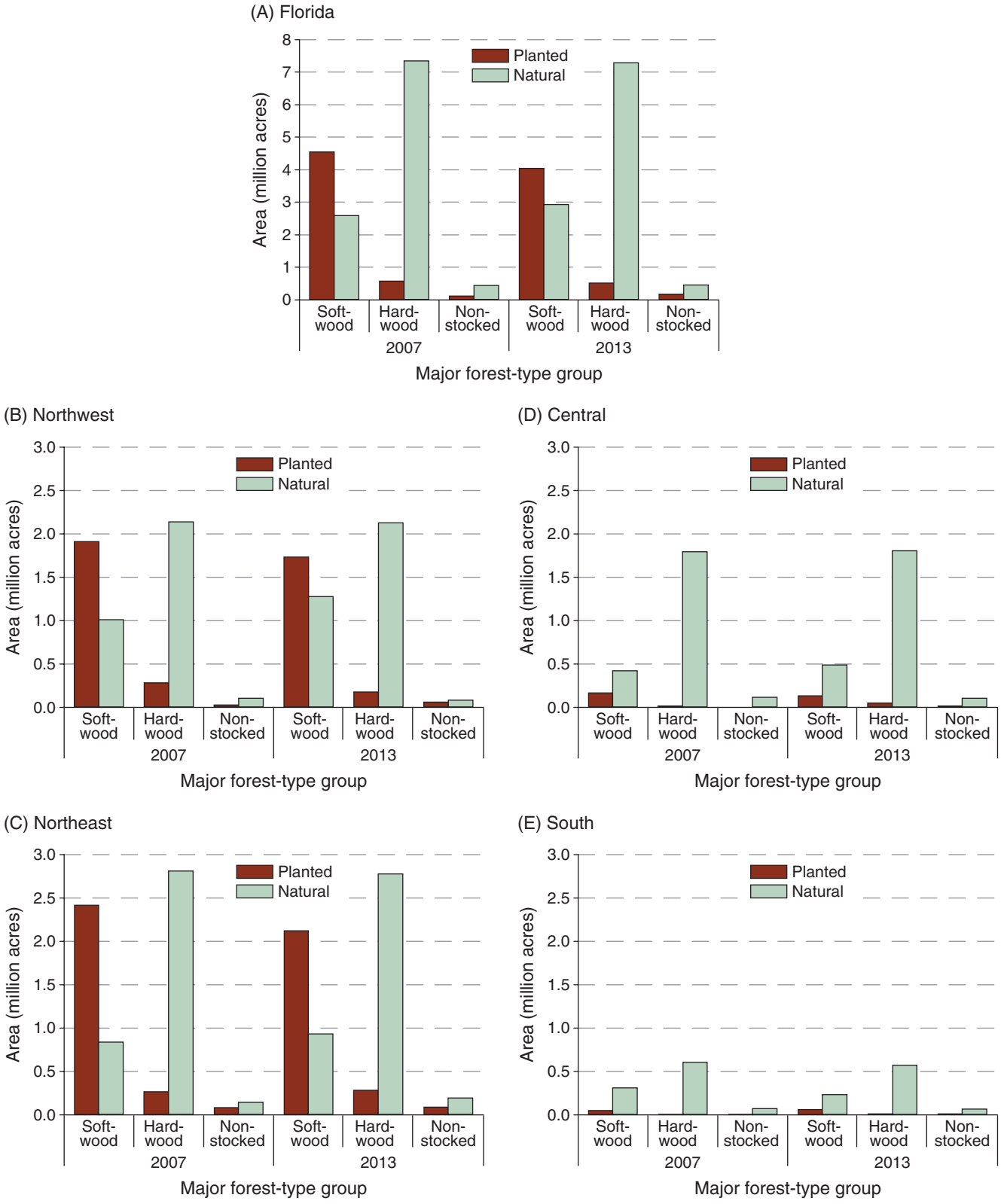

Figure 6—Area of timberland in (A) Florida by major forest-type group, stand origin, survey year, and survey unit (B) Northwest, (C) Northeast, (D) Central, and (E) South. Data for 2007 from FIADB 12/15/2016 and for 2013 from FIADB 5/1/2015.

oak-gum-cypress and 14,000 acres were classified as tropical and exotic hardwood forest types. Within the softwood forest-type group, longleaf-slash pine forest type accounted for 3.0 million acres, or <64 percent, of the State's total planted timberland. Loblolly-shortleaf pine forest type accounted for >1.0 million acres, or <22 percent of the State's planted timberland.

In 2013, the area of planted softwood in Florida (fig. 6A) has decreased by 0.5 million acres from that in 2007. In contrast, the area of natural softwood in 2013 has increased by >0.3 million acres from that in 2007. Nonstocked areas increased slightly between the surveys.

Distribution of the State's >4.7 million acres of planted timberland was not even across the four survey units. The two northernmost units together accounted for 94 percent of the planted timberland in Florida. Most of the planted acres, or <53 percent, were located in the Northeast unit (fig. 6C) and another >41 percent were located in the Northwest unit (fig. 6B). The Central unit (fig. 6D) accounted for >4 percent of the planted timberland. Planted timberland in the South unit (fig. 6E) accounted for <2 percent of the State total.

Area of planted timberland accounted for <2.0 million acres, or 36 percent, of the Northwest's timberland in 2013. Based on major forest-type groups, most of the planted stands, 88 percent, were composed of softwood forest types (fig. 6B). Since 2007, the area of planted softwood stands has decreased by 181,000 acres in the Northwest unit, whereas the area of natural softwood stands increased by 26,000 acres.

Area of planted timberland accounted for <2.5 million acres, or 39 percent, of the Northeast unit's timberland in 2013. Based on major forest-type groups, most of the planted stands, 85 percent, were composed of softwood forest types (fig. 6C). Since 2007, the area of planted softwood stands has decreased by 297,000 acres in the Northeast unit, and the area of natural softwood stands has increased by 92,000 acres.

Area of planted timberland accounted for 0.2 million acres, or <8 percent, of the Central unit's timberland in 2013. Based on major forest-type groups, most of the planted stands, <67 percent, were composed of softwood forest types (fig. 6D). Since 2007, the area of planted softwood stands decreased by 34,000 acres in the Central unit, and the area of natural softwood stands has increased by 67,000 acres.

Area of planted timberland accounted for 87,000 acres, or 9 percent, of the South unit's timberland in 2013. Based on major forest-type groups, most of the planted stands, <73 percent, were composed of softwood forest types (fig. 6E). Although nominal, but contrary to changes in the other units, the area of planted softwood stands increased by 12,000 acres in the South unit, and the area of natural softwood stands decreased by 77,000 acres.

Stand-Age Class

The planted and natural stands by stand-age class provide another method to describe Florida's timberland. In 2013, for all species combined, the >4.7-million-acre statewide area of planted timberland peaked in the 0- to 20-year age class with <3.0 million acres (fig. 7A). The 21- to 40-year age class held <1.7 million acres of the planted timberland, the typical point where many planted yellow pine stands begin to be harvested. However, liquidation of these acres was evident by the 41- to 60-year age class where only 75,000 acres remained. The <10.7 million acre statewide area of natural timberland peaked in the 41- to 60-year age class with <2.6 million acres.

In the Northwest unit (fig. 7B), the age distribution of the <2.0-million-acre area of planted timberland differed from that at the State level, peaking in the 21- to 40-year age class with <1.0 million acres, after which the rate of liquidation accelerated. The Northwest unit contained 46,000 acres, or 61 percent, of the State's remaining acres of planted timberland in the 41- to 60-year age class. Natural timberland in this unit peaked in the 41- to 60-year age class.

In the Northeast unit (fig. 7C), the <2.5-million-acre area of planted timberland peaked in the 0- to 20-year age class with <1.9 million acres, but underwent a 68 percent liquidation to 0.6 million acres in the 21- to 40 year age class. The largest total reduction between the 0- to 20- and the 21- to 40-year age classes of planted timberland occurred in the Northeast unit. Unlike the other units, the natural timberland in this unit remained fairly stable throughout the 0- to 80-year age classes.

In the Central unit (fig. 7D), the <0.2-million-acre area of planted timberland peaked in the 0- to 20-year age class with 0.1 million acres, but liquidation did not accelerate until after the 21- to 40-year age class. The smallest reduction between the 0- to 20- and 21- to 40-year age classes of planted timberland occurred in the Central unit. The natural timberland in this unit peaked in the 21- to 40-year age class, but remained fairly stable through the 61- to 80-year age class.

In the South unit (fig. 7E), the nominal 87,000-acre area of planted timberland peaked in the 0- to 20-year age class with 68,000 acres. Only 19,000 acres remained in the 21- to 40-year age class, and none were recorded for the 41-60 year age class. The South unit natural timberland peaked in the 41- to 60-year age class.

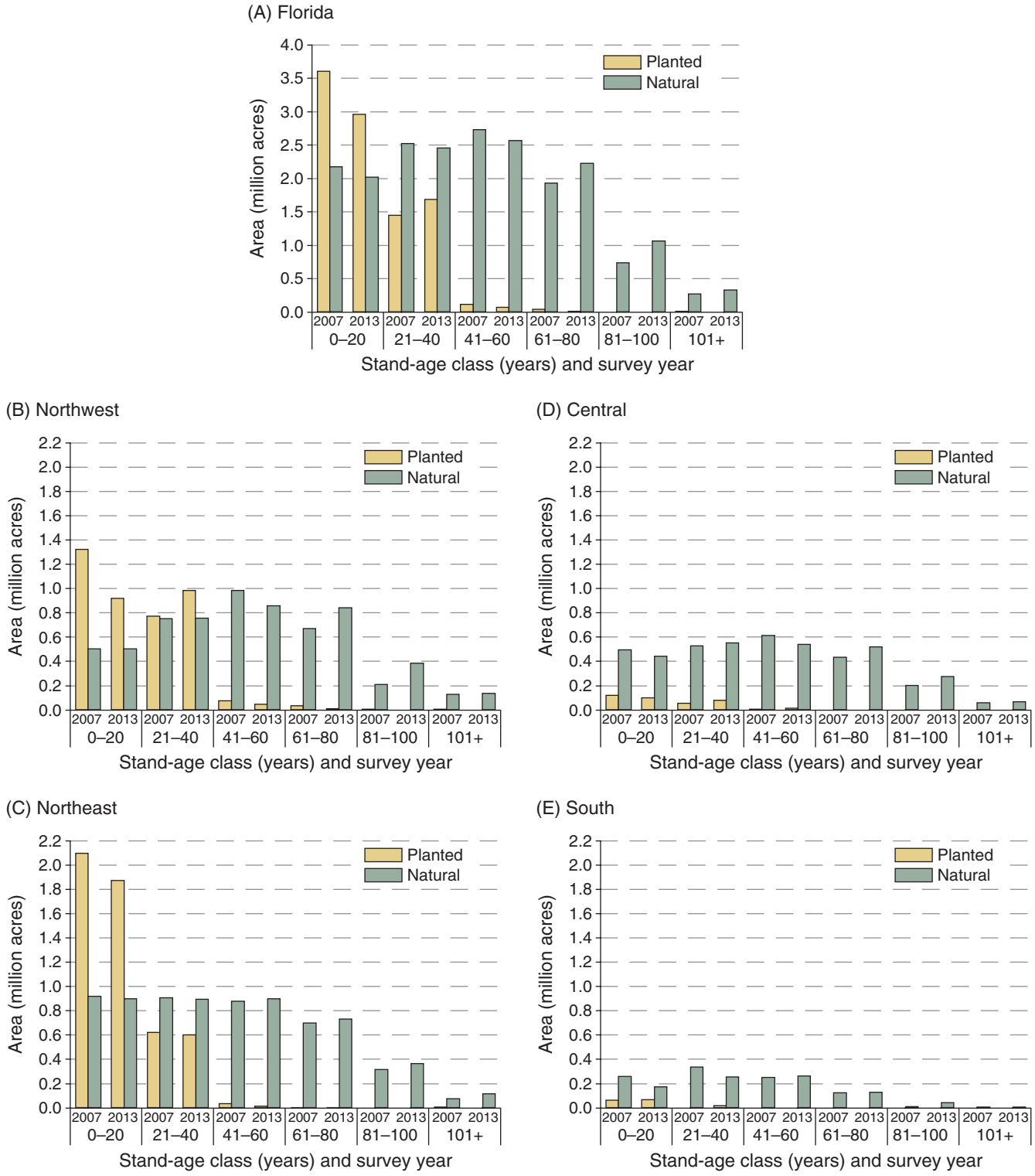

Figure 7—Area of timberland in (A) Florida by stand-age class, stand origin, survey year, and survey unit (B) Northwest, (C) Northeast, (D) Central, and (E) South. Data for 2007 from FIADB 12/15/2016 and for 2013 from FIADB 5/1/2015.

TIMBERLAND STATISTICS: TREE VOLUME

Volume as a descriptor of the timber resource is in many ways a better approach to analyzing the potential of a State's forests. Unlike area by forest type, volume can be analyzed related to tree species population estimates regardless of occurrence. For example, all slash pine volume can be summed for an individual survey unit regardless of its distribution on the ground, or trends in volume of slash pine can be tracked. Furthermore, volume can be summed for a species or species group by diameter class or for a particular ownership group alone. In essence, wood volume is the medium of exchange that propels the State's forest industry economy. Volume is ultimately the basis for determining net change using components of growth to be discussed in the next section of this report.

The calculation of volume begins with a tally of trees. The numbers of trees by species along with their heights and diameters form the foundation for all the algorithmic processes to follow.

Species

Figure 8A shows the top 10 timberland tree species by number that are at least 1-inch in d.b.h. Slash pine, laurel oak, swamp tupelo, and pondcypress accounted for the highest numbers of trees. Slash pine was Florida's most common tree species by far, with more than two and a half times as many trees as the second most common species of laurel oak.

There were similarities and differences in the order of prevalence and species present by survey unit. For instance, the State's number one tree, slash pine, was the most common species in the Northwest (fig. 8B) and Northeast units (fig. 8C), but the second most common in the Central (fig. 8D) and South (fig. 8E) units. The State's second most common tree, laurel oak, was second in the Northeast unit, but third in the Northwest and Central units. Laurel oak was not in the top 10 most common in the South unit. The State's third most common tree, swamp tupelo, was second in the Northwest unit and third in the Northeast unit. Swamp tupelo did not make the top 10 in the Central or South units. The State's fourth most common tree, pondcypress, was first in the Central and South units. Pondcypress was fifth in the Northeast unit and not in the top 10 in the Northwest unit.

Longleaf pine only made the top 10 in the Northwest unit, where it was the fifth most common tree species by number of trees. Baldcypress only occurred in the top 10 in the South unit. Live oak made the top 10 in the Central and South units. Sand pine made the top 10 in the Northwest and Northeast units. Cabbage palm made the top 10 in Central and South units. One invasive tree, melaleuca, was third in the South unit (fig. 8E).

The top 10 trees on Florida timberland based on tree species volume (fig. 9A) altered the list of species order and presence from that by number of trees. These differences occurred for two primary reasons. First, it would take the volume from numerous small trees of a particular species to match the volume in one large tree of another species. Second, volume is calculated based on merchantability standards of a 1-foot stump to a 4-inch top; thus only trees ≥5.0 inches d.b.h. are included in volume calculations. Statewide, slash pine, which ranked first in tree numbers (fig. 8A), remained on top in prominence when considered by volume (fig. 9A). After slash pine though, the list by volume mostly reshuffled for spots 2 through 10, while adding three new species and dropping three species. The additions were longleaf pine, live oak, and baldcypress. Dropping off the statewide list by tree numbers when going to a statewide list by volume were water oak, red maple, and loblolly-bay.

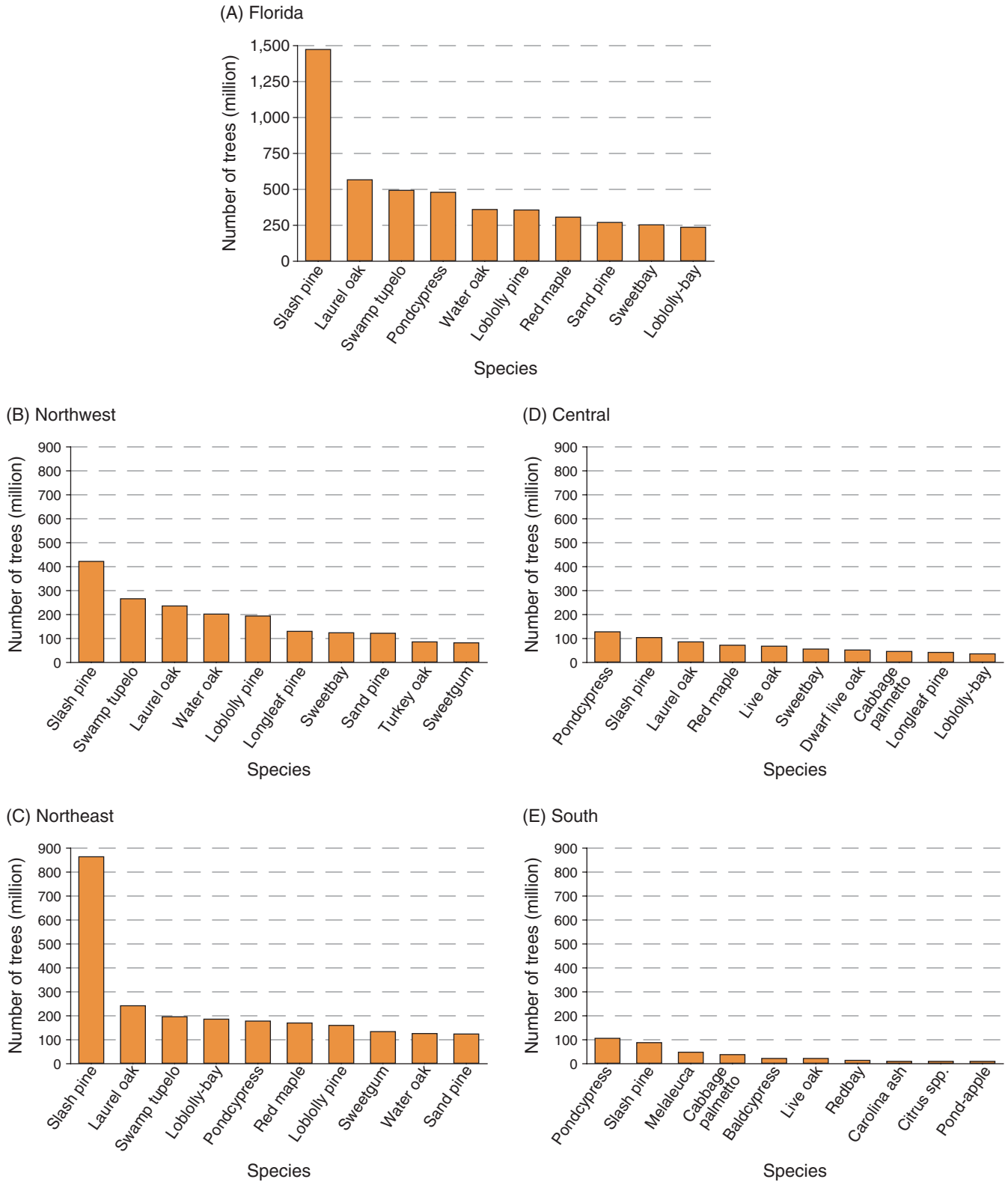

Figure 8—Top 10 species based on number of trees in (A) Florida and by survey unit (B) Northwest, (C) Northeast, (D) Central, and (E) South, 2013.

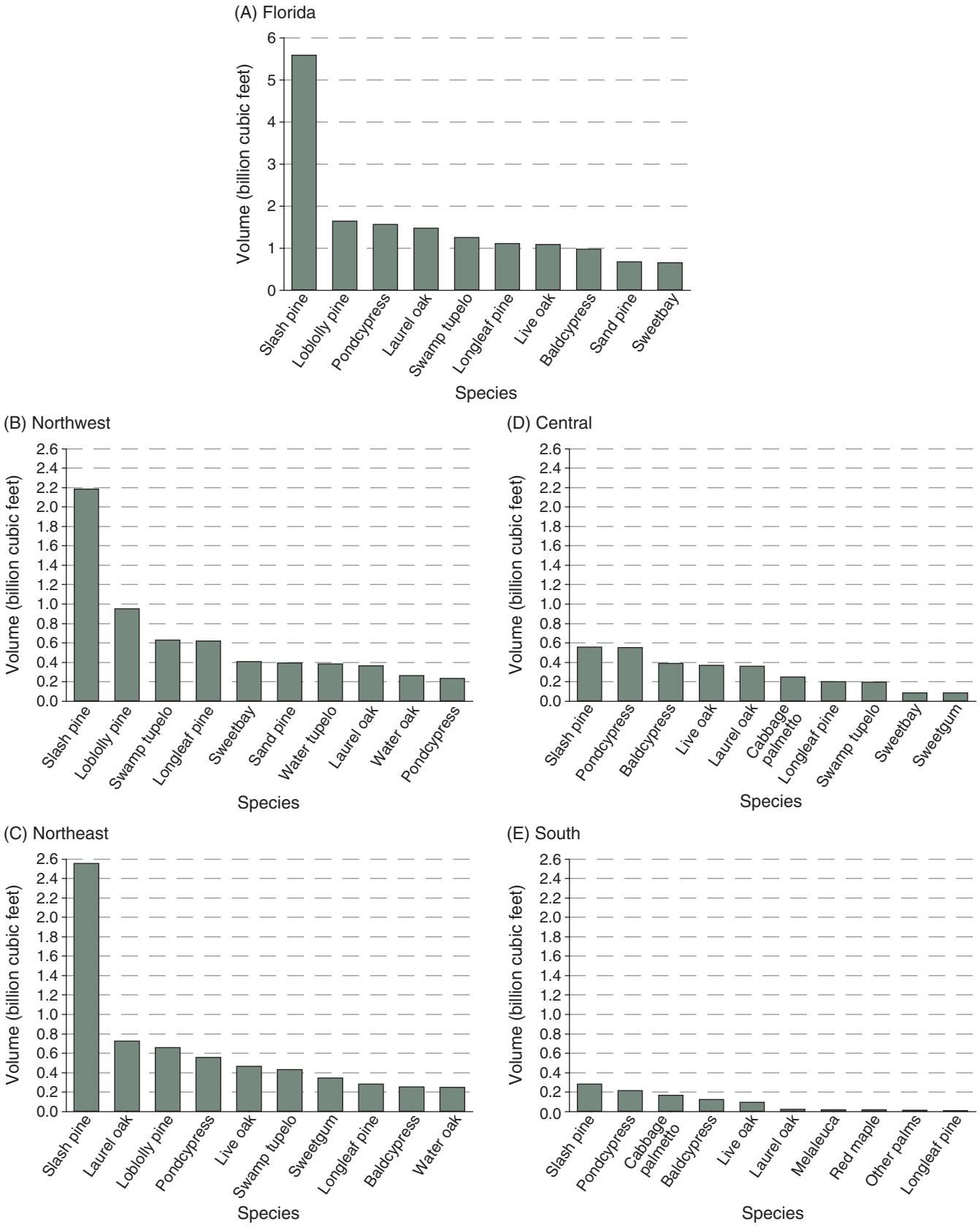

Figure 9—Top 10 species based on volume of trees in (A) Florida and by survey unit (B) Northwest, (C) Northeast, (D) Central, and (E) South, 2013.

Similar changes occurred by survey unit. Mainly, slash pine rose to first on the list by volume in all four survey units. In the Northwest unit (fig. 9B), loblolly pine moved from fifth in number of trees to second by volume. Swamp tupelo was third by volume. Longleaf pine was fourth by volume, having been sixth in tree numbers. Laurel oak dropped from third in tree numbers to eighth by volume. Pondcypress had enough volume to be added to the list by volume.

In the Northeast unit (fig. 9C), laurel oak remained second by volume as it was by tree numbers. Loblolly pine moved to third by volume from seventh in tree numbers. Pondcypress was fourth by volume. Live oak entered fifth by volume, having not been in the top 10 by tree numbers. Longleaf pine and baldcypress entered at eighth and ninth, respectively, by volume although neither was top 10 in tree numbers.

In the Central unit (fig. 9D), pondcypress was now second by volume. Baldcypress entered third by volume, having not been in the top 10 in tree numbers. Live oak was fourth by volume and laurel oak was fifth, practically switching places from their status in number of trees. Cabbage palm moved up to sixth by volume from eighth in tree numbers. Swamp tupelo entered at eighth by volume, having been outside the top 10 in tree numbers.

In the South unit (fig. 9E), pondcypress was now second to slash pine by volume. Cabbage palm moved up to third, baldcypress moved up to fourth, and live oak moved up to fifth by volume. The invasive melaleuca dropped from third in tree numbers to seventh by volume.

Florida's slash pine volume totaled <5.6 billion cubic feet (fig. 9A), 46 percent of which was located in the Northeast unit and 39 percent in the Northwest unit. Together the Northwest and Northeast units held 85 percent of the State's total slash pine volume. Florida's loblolly pine volume totaled >1.6 billion cubic feet, 58 percent of which was located in the Northwest unit and 40 percent in the Northeast unit. Together, these two units held 98 percent of the State's total loblolly pine volume. Florida's pondcypress volume totaled <1.6 billion cubic feet, 36 percent of which was located in the Central unit and 35 percent in the Northeast unit. Together, the Central and Northeast unit held 71 percent of the State's pondcypress volume. Florida's laurel oak volume totaled <1.5 billion cubic feet, 49 percent of which was located in the Northeast unit. Florida's swamp tupelo volume totaled <1.3 billion cubic feet, 50 percent of which was located in the Northwest unit. Florida's longleaf pine volume totaled >1.1 billion cubic feet, 56 percent of which was located in the Northwest unit. Florida's live oak volume totaled <1.1 billion cubic feet, 43 percent of which was located in the Northeast unit and 34 percent in the central unit. Florida's baldcypress volume totaled <1.0 billion cubic feet, 40 percent of which was located in the Central unit, 26 percent in the Northeast unit, and 13 percent in the South unit. Florida's sand pine volume totaled <0.7 billion cubic feet, 58 percent of which was located in the Northwest unit. Florida's sweetbay volume totaled >0.6 billion cubic feet, 63 percent of which was located in the Northwest unit.

Overall, all-live tree merchantable volume on timberland in Florida increased to >20.8 billion cubic feet in 2013 from >19.0 billion cubic feet in 2007. Merchantable volume is based on trees 5.0 inches d.b.h. and larger. The softwood species together accounted for 57 percent, or <11.9 billion cubic feet, of the total (fig. 10A). In combination, all the hardwood species made up 43 percent, or <9.0 billion cubic feet.

Based on stand origin, 78 percent, or <16.3 billion cubic feet, of Florida's total all-live merchantable volume is in species

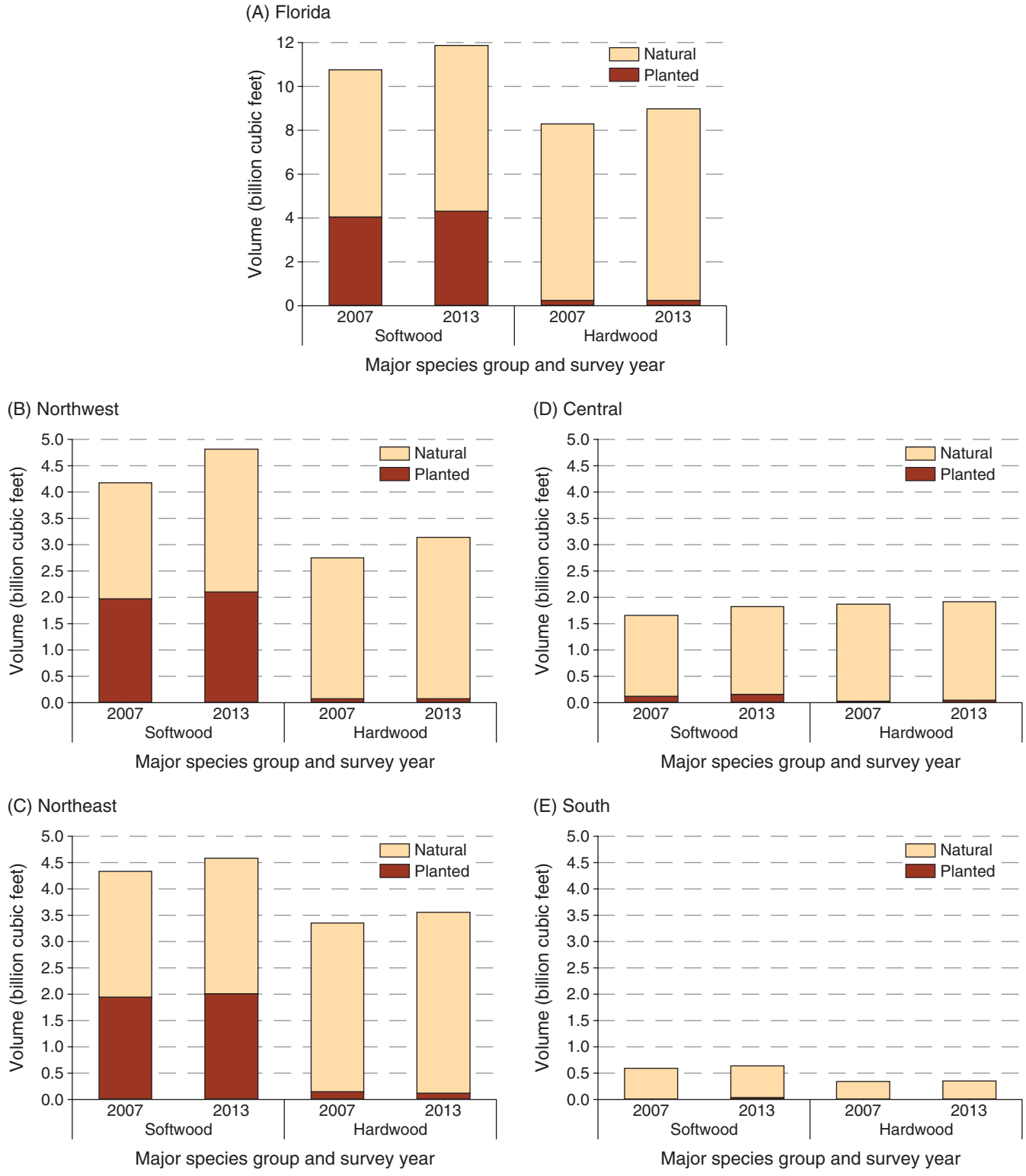

Figure 10—All-live merchantable volume in (A) Florida by major species group, survey year, stand origin, and survey unit (B) Northwest, (C) Northeast, (D) Central, and (E) South. Data for 2007 from FIADB 12/15/2016 and for 2013 from FIADB 5/1/2015.

from stands of natural origin. Twenty-two percent, or almost >4.5 billion cubic feet, is in species from stands with evidence of artificial regeneration (planted). Softwood species accounted for 95 percent, or <4.3 billion cubic feet, of the State's planted volume (fig. 10A). In 2013, planted softwood volume had increased by 6 percent since 2007. Whereas, natural softwood volume had increased by 13 percent. Natural hardwood volume increased by 8 percent since 2007.

The distribution of the planted volume differed by survey unit within the State. The Northwest unit ((fig. 10B) accounted for 48 percent, or <2.2 billion cubic feet, of the State's planted volume. The Northeast unit (fig. 10C) accounted for 47 percent, or >2.1 billion cubic feet of the planted volume. The Central unit (fig. 10D) accounted for 4 percent, or <0.2 billion cubic feet of the planted volume. The South unit (fig. 10E) accounted for <1 percent, or just 36 million cubic feet, of the State's planted volume. In 2013, planted softwood volume had increased to some degree in each of the four survey units. Natural softwood volume also increased in each survey unit since 2007. Natural hardwood volume rose in each survey unit as well, but the increase was highest in the Northwest unit and lowest in the Central and South units.

Diameter Class

The diameter class distribution of Florida's >20.8 billion cubic feet of all-live merchantable volume differed between the major species groups. For the State's <11.9 billion cubic feet in softwoods, 65 percent of the volume was distributed in the 6- to 12-inch diameter classes (fig. 11A). The softwood volume peaked in the 8-inch d.b.h. class where >19 percent of the total existed. The softwood volume increased statewide since 2007, and increased in each of the diameter classes.

In the Northwest unit (fig. 11B), the >4.8 billion cubic feet of softwood volume distributed by diameter class reflected that of the State level. It also peaked in the 8-inch diameter class. The softwood volume increased unit-wide since 2007. However, unlike at the State level, not all softwood diameter classes increased in the Northwest unit, the 6- and 20-inch diameter classes decreased.

In the Northeast unit (fig. 11C), the <4.6 billion cubic feet of softwood volume also peaked in the 8-inch diameter class. However, the distribution by diameter class differed from that of the State level with a steeper decline in volume after the peak. The softwood volume increased unit-wide since 2007, but decreased in the 10- and 14-inch diameter classes.

In the Central unit (fig. 11D), the >1.8 billion cubic feet of softwood volume distributed by diameter class was more spread out across the range of diameters than it was in the two northern units. Softwood volume peaked in the 12-inch diameter class in this unit. The softwood volume increased unit-wide since 2007, but decreased in the 20-inch diameter class.

In the South unit (fig. 11E), the >0.6 billion cubic feet of softwood volume distributed by diameter class peaked across both the 8- and 10-inch diameter classes. Although the softwood volume increased unit-wide since 2007, it decreased in the three diameter classes of 10-, 18-, and 20-inches.

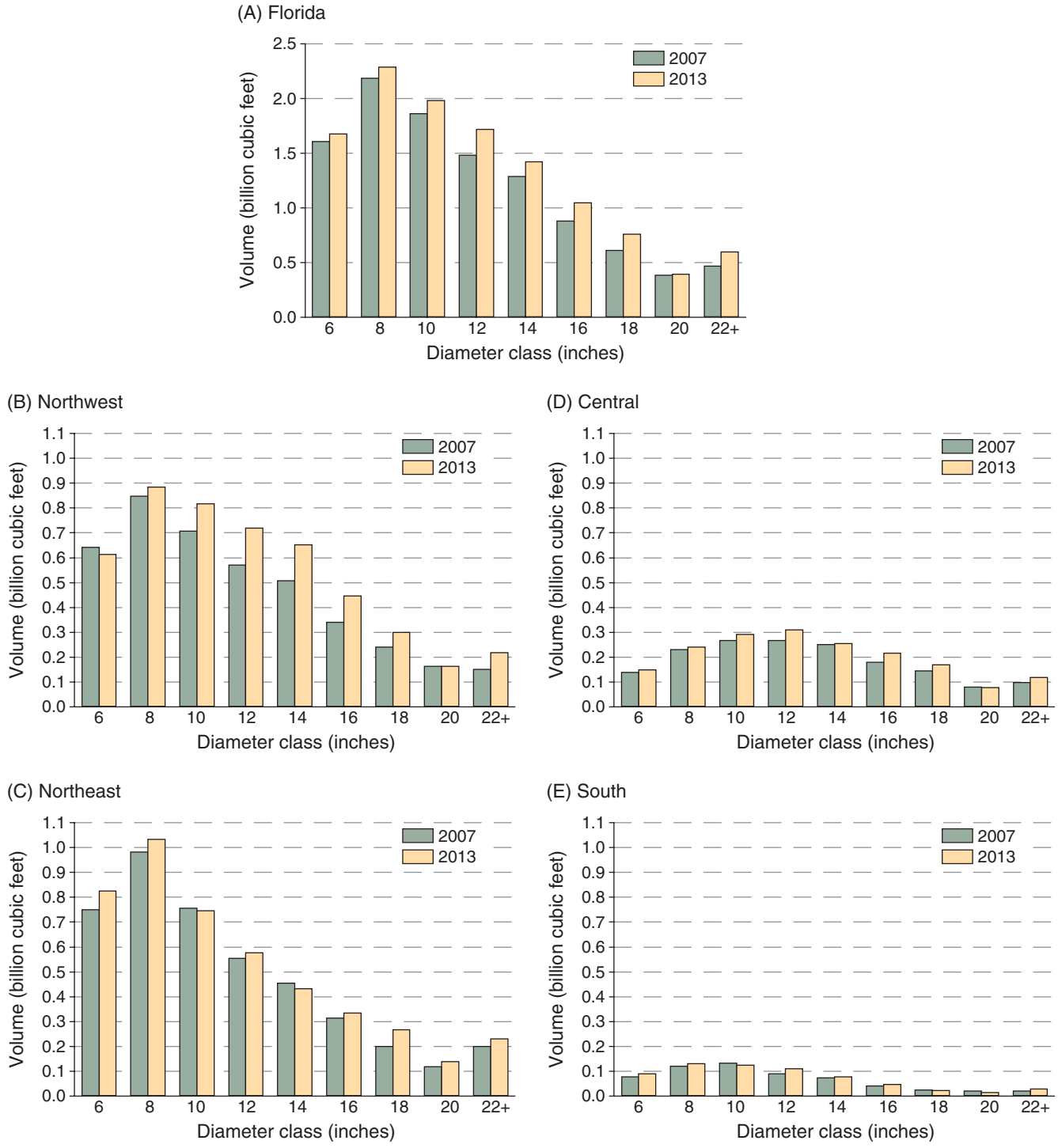

Figure 11—All-live merchantable softwood volume on timberland in (A) Florida by diameter class, survey year, and survey unit (B) Northwest, (C) Northeast, (D) Central, and (E) South. Data for 2007 from FIADB 12/15/2016 and for 2013 from FIADB 5/1/2015.

The diameter class distribution of Florida's <9.0 billion cubic feet of volume in hardwood species was distributed more widely across the range of diameter classes (fig. 12A) than softwoods (fig. 11A). While the highest volume occurred in the summation of all diameter classes 22+ inches, hardwood volume overall peaked across the 10- to 12-inch diameter classes, with 50 percent of the volume spread across the 8- to 14-inch diameter classes. The hardwood volume increased statewide since 2007, and except for the 20-inch class, increased in all diameter classes.

The distribution of hardwood volume by diameter class differed by survey unit. In the Northwest unit (fig. 12B), the >3.1 billion cubic feet of hardwood volume peaked in 8- to 12-inch diameter classes. The hardwood volume increased unit-wide since 2007, and in each diameter class.

In the Northeast unit (fig. 12C), the <3.6 billion cubic feet of hardwood volume peaked in the 10- to 12-inch classes. The hardwood volume increased unit-wide since 2007, but decreased in the 8- and 20-inch classes.

In the Central unit (fig. 12D), the >1.9 billion cubic feet of hardwood volume peaked in the 12-inch diameter class. The hardwood volume increased unit-wide since 2007, but decreased in the three diameter classes of 12-, 16-, and 20-inches.

In the South unit (fig. 12E), the <0.4 billion cubic feet of hardwood volume peaked in the 12-inch diameter class. The hardwood volume increased unit-wide since 2007, but decreased in the three diameter classes of 6-, 20-, and 22+ inches.

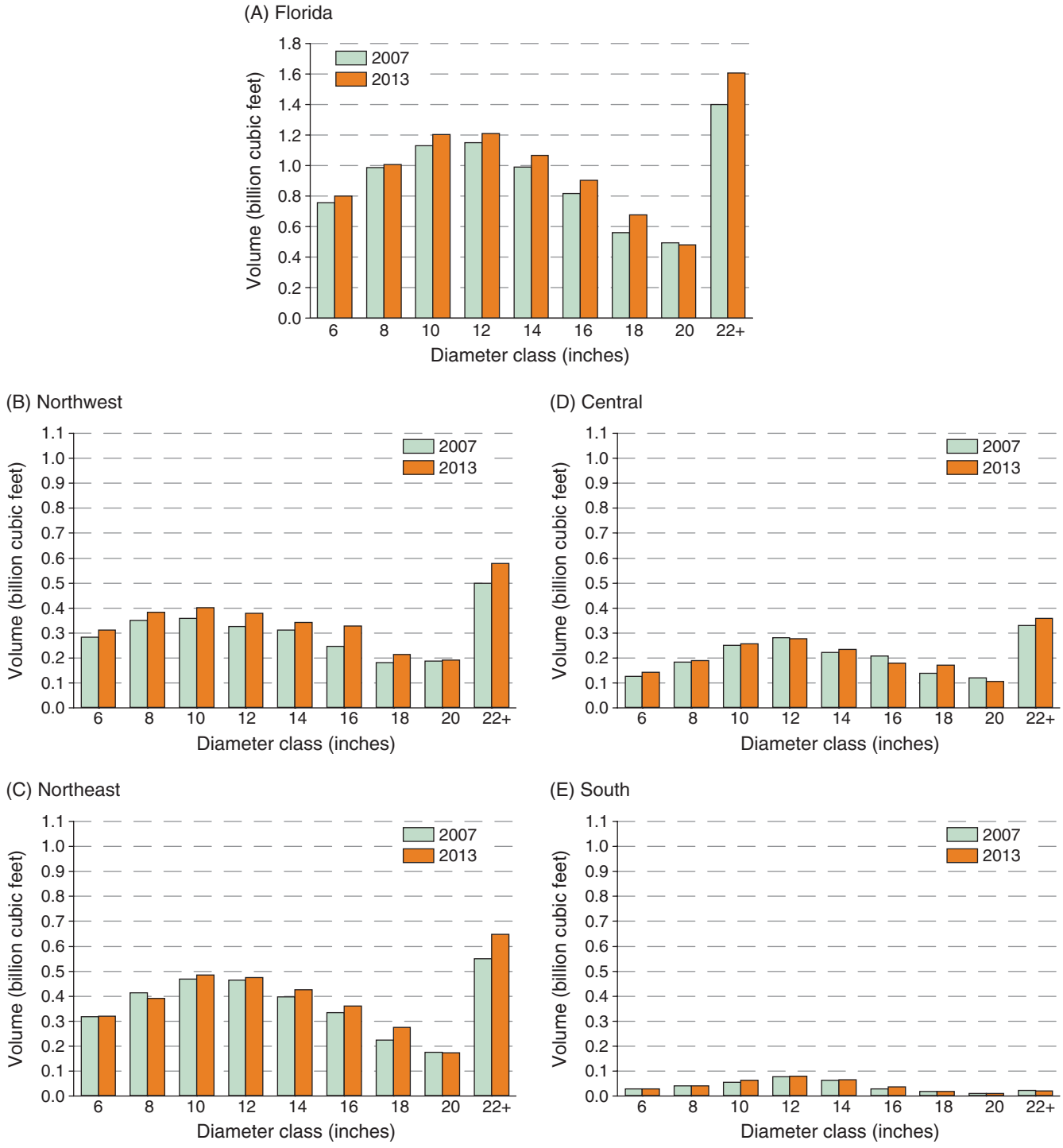

Figure 12—All-live merchantable hardwood volume on timberland in (A) Florida by diameter class, survey year, and survey unit (B) Northwest, (C) Northeast, (D) Central, and (E) South. Data for 2007 from FIADB 12/15/2016 and for 2013 from FIADB 5/1/2015.

TIMBERLAND STATISTICS: NET CHANGE COMPONENTS

A main purpose of the forest inventory is to determine resource change and direction, if any. The components of change revolve around measurements of gross growth, mortality, and removal volumes calculated in terms of average annual rates based on the remeasurement period involved. The relationship is such that gross growth is diminished by mortality, creating net growth. Measured removals then detract from net growth, resulting in net change in the inventory.

Statewide, for all species combined, net growth averaged 870 million cubic feet annually, and removals averaged 570 million cubic feet annually. The difference between these two components yielded a positive average annual net change in the inventory of 300 million cubic feet for Florida in 2013. However, comparison of these components of change by major species group provided a more detailed analysis of the State's timberland resource.

Softwood

The average annual components of change for softwood volume in Florida are shown in figure 13A. Statewide in 2013, softwood average annual net growth of 655 million cubic feet exceeded softwood average annual removals of 467 million cubic feet. The difference between these two components yielded a positive average annual net change of 188 million cubic feet for the State's softwood resource.

To put the State-level net change impact in perspective, figure 14A shows the growth and removals dynamics for softwoods compared to total inventory volume of softwoods. For the period ending in 2013, softwood net growth averaged 5.5 percent of total inventory volume and removals averaged 3.9 percent. The positive net change of 188 million cubic feet of softwood averaged 1.6 percent of total softwood inventory in the State.

In the Northwest unit (fig. 13B), average annual softwood net growth of 274 million cubic feet exceeded average annual softwood removals of 178 million cubic feet by a wide margin and resulted in a positive average annual softwood net change of 96 million cubic feet. For the period ending in 2013, the Northwest unit's softwood net growth averaged 5.7 percent of its total softwood inventory volume and removals averaged 3.7 percent (fig. 14B). The net change of 96 million cubic feet averaged 2.0 percent of total softwood inventory in the unit.

In the Northeast unit (fig. 13C), average annual softwood net growth of 311 million cubic feet exceeded average annual softwood removals of 267 million cubic feet, which resulted in a positive average annual softwood net change of 44 million cubic feet. For the period ending in 2013, the Northeast unit's softwood net growth averaged 6.8 percent of its total softwood inventory volume and removals averaged 5.8 percent (fig. 14C). The net change of 44 million cubic feet averaged 1.0 percent of total softwood inventory in the unit.

In the Central unit (fig. 13D), average annual softwood net growth of 49 million cubic feet exceeded average annual softwood removals of 14 million cubic feet, which resulted in a positive average annual softwood net change of 35 million cubic feet. For the period ending in 2013, the Central unit's softwood net growth averaged 2.7 percent of total softwood inventory volume and removals averaged 0.8 percent (fig. 14D). The net change of <35 million cubic feet averaged 1.9 percent of total softwood inventory in the unit.

In the South unit (fig. 13E), where the softwood component is the lowest of all units in the State, average annual softwood net growth of 21 million cubic feet exceeded average annual softwood removals of 8 million cubic feet. This resulted in a positive average annual softwood net change of 13 million cubic feet. For the period ending in 2013, the South unit's softwood net growth averaged 3.3 percent

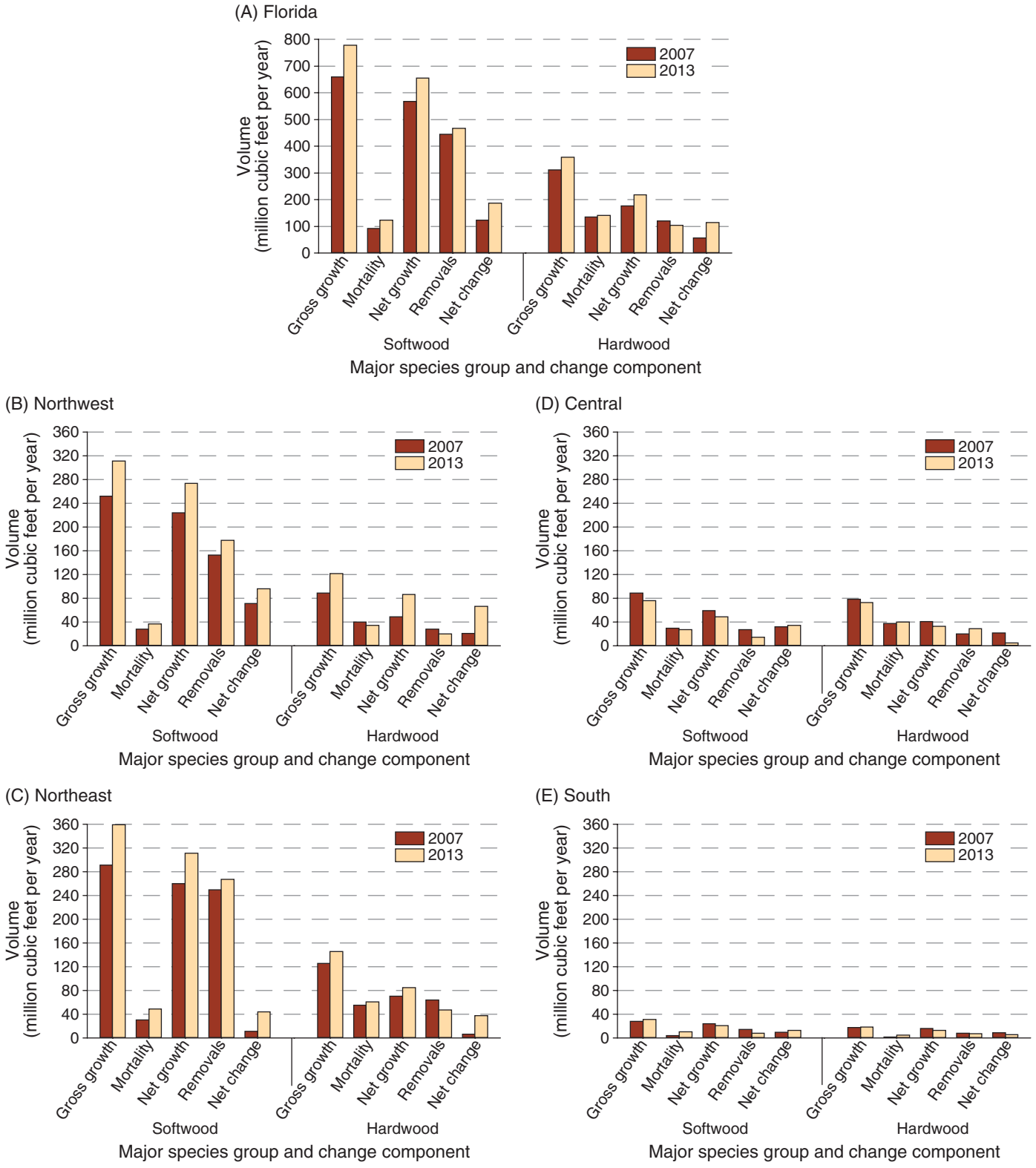

Figure 13—Net change components for all-live volume in (A) Florida by major species group, change component, survey year, and survey unit (B) Northwest, (C) Northeast, (D) Central, and (E) South. Data for 2007 from FIADB 12/15/2016 and for 2013 from FIADB 5/1/2015.

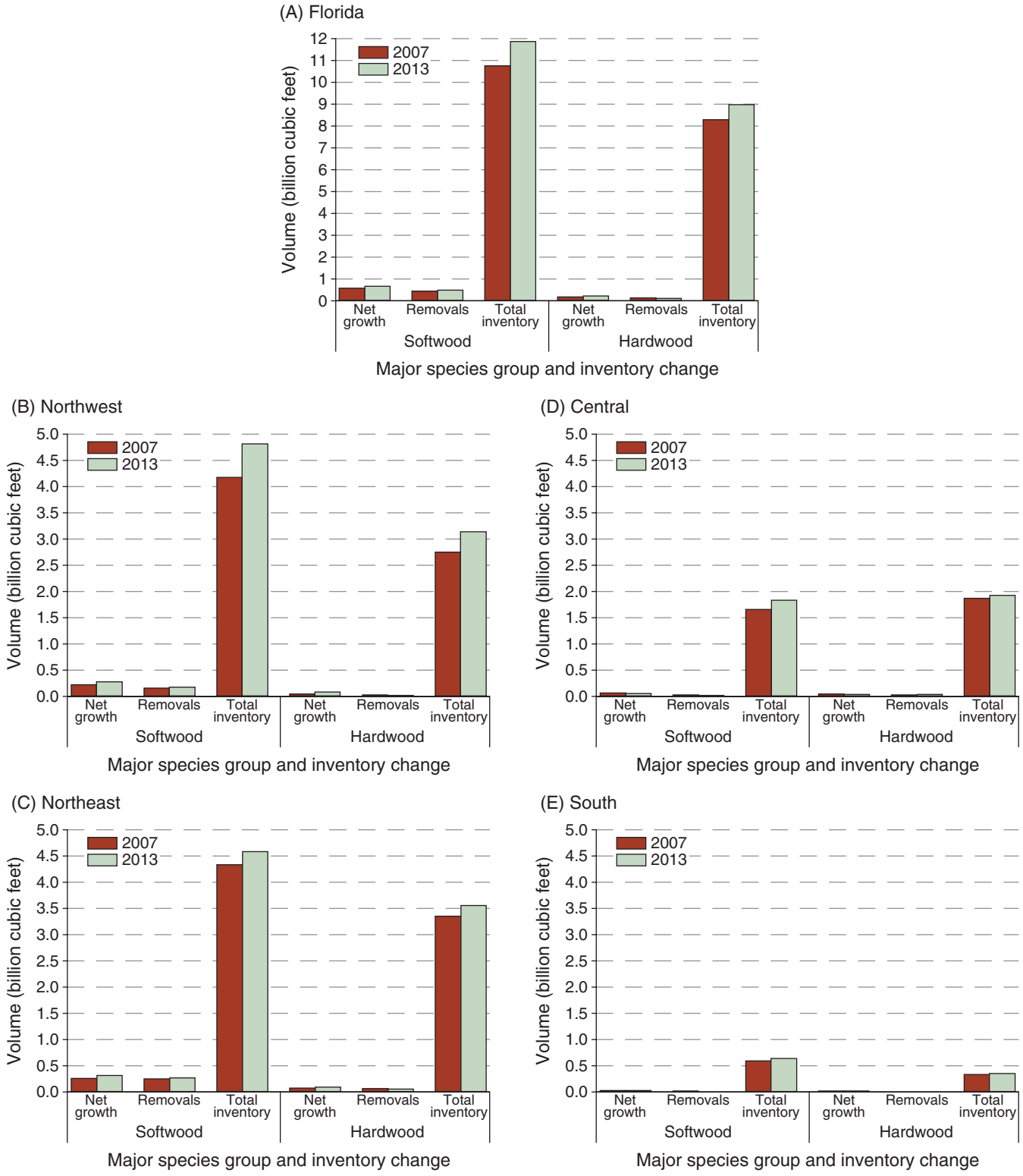

Figure 14—Comparison of net growth and removals to total inventory volume for softwood and hardwood in (A) Florida by survey year and survey unit (B) Northwest, (C) Northeast, (D) Central, and (E) South. Data for 2007 from FIADB 12/15/2016 and for 2013 from FIADB 5/1/2015.

of total softwood inventory volume and removals averaged 1.3 percent (fig. 14E). The net change of positive 13 million cubic feet averaged 2.0 percent of total softwood inventory in the unit.

Hardwood

The average annual components of change for hardwood volume in Florida are shown in figure 13A. Statewide in 2013, hardwood average annual net growth of 215 million cubic feet exceeded hardwood average annual removals of 103 million cubic feet. The difference between these two components yielded a large positive average annual net change of 112 million cubic feet for the State's hardwood resource.

To put the State-level net change impact in perspective, figure 14A shows the growth and removals dynamics for hardwoods compared to total inventory volume of hardwoods. For the period ending in 2013, Florida's hardwood net growth averaged 2.4 percent of total inventory volume and removals averaged 1.2 percent. The positive 112 million cubic feet of hardwood net change averaged 1.2 percent of total hardwood inventory in the State.

In the Northwest unit (fig. 13B), average annual hardwood net growth of 86 million cubic feet exceeded average annual hardwood removals of 20 million cubic feet, which resulted in a positive average annual hardwood net change of 66 million cubic feet. For the period ending in 2013, the Northwest unit's hardwood net growth averaged 2.8 percent of total hardwood inventory volume and removals averaged 0.6 percent (fig. 14B). The net change of 66 million cubic feet averaged 2.1 percent of total hardwood inventory in the unit.

In the Northeast unit (fig. 13C), average annual hardwood net growth of 85 million cubic feet exceeded average annual hardwood removals of 47 million cubic feet, which resulted in a positive average annual hardwood net change of 38 million cubic feet. For the period ending in 2013, the Northeast unit's hardwood net growth averaged 2.4 percent of total hardwood inventory volume and removals averaged 1.3 percent (fig. 14C). The net change of 38 million cubic feet averaged 1.1 percent of total hardwood inventory in the unit.

In the Central unit (fig. 13D), average annual hardwood net growth of 33 million cubic feet exceeded average annual hardwood removals of 29 million cubic feet, which resulted in a tight but positive average annual hardwood net change of 4 million cubic feet. For the period ending in 2013, the Central unit's hardwood net growth averaged 1.7 percent of total hardwood inventory volume and removals averaged 1.5 percent (fig. 14D). The net change of 4 million cubic feet averaged just 0.2 percent of total hardwood inventory in the unit.

In the South unit (fig. 13E), where the hardwood component is the lowest of all units in the State, average annual hardwood net growth of 13 million cubic feet exceeded average annual hardwood removals of 7 million cubic feet. This resulted in a positive average annual hardwood net change of 6 million cubic feet. For the period ending in 2013, the South unit's hardwood net growth averaged 3.7 percent of total hardwood inventory volume and removals averaged 2.0 percent (fig. 14E). The net change of positive 6 million cubic feet averaged 1.7 percent of total hardwood inventory in the unit.

TIMBERLAND STATISTICS: FOREST HEALTH

FIA collected several variables during sample plot measurement that can be used or interpreted to assess forest health in Florida. Some of these variables are degree of tree mortality, number of standing dead trees and identifiable causes of death, amount of down woody material (DWM) present, and the invasion of nonnative plants. The DWM data were collected for the 2010 survey year, but were reprocessed after algorithm corrections that produced minor adjustments for 2013. The nonnative plants data were collected under guidance from two versions of the FIA field manual, with some additional species of interest added to the latest version of the manual.

Tree Mortality

In 2013, average annual mortality volume of all-live trees ≥5 inches d.b.h. on Florida's timberland totaled 264 million cubic feet, up from 227 million cubic feet in 2007. Softwood species accounted for 123 million cubic feet, or 47 percent, compared to 92 million cubic feet in 2007. Hardwood species accounted for 141 million cubic feet, or 53 percent, compared to 134 million cubic feet in 2007. A nominal amount was attributed to trees not measured. Statewide, for all species combined, mortality peaked in the 61- to 80-year age class (fig. 15A), where 29 percent of total mortality occurred. For softwood species, mortality peaked in the 21- to 40-year age class, where 31 percent of the total softwood mortality occurred. For hardwood species, mortality peaked in the 61- to 80-year age class, where 31 percent of the total hardwood mortality occurred.

The Northwest unit (fig. 15B) contained 27 percent of the State's total mortality of all species, 30 percent of the State's softwood mortality, and 25 percent of the State's hardwood mortality. In the Northwest unit, softwood mortality peaked in the 21- to 40-year age class and spiked again in the 61- to 80-year age class. The Northwest unit's hardwood mortality peaked in the 81- to 100-year age class.

The Northeast unit (fig. 15C) contained 41 percent of the State's total mortality of all species (highest of all the units), 39 percent of the State's softwood mortality, and 43 percent of the State's hardwood mortality. Softwood mortality in the Northeast unit peaked in the 21- to 40-year age class, but continued to be relatively high through the 41- to 60-year age class. The Northeast unit's hardwood mortality peaked in the 61- to 80-year age class.

The Central unit (fig. 15D) contained 26 percent of the State's total mortality of all species, 22 percent of the State's softwood mortality, and 29 percent of the State's hardwood mortality. Softwood mortality in the Central unit peaked in the 61- to 80-year age class. The Central unit's hardwood mortality peaked in the 81- to 100-year age class.

The South unit (fig. 15E) contained 6 percent of the State's total mortality of all species, 8 percent of the State's softwood mortality, and 3 percent of the State's hardwood mortality. In the South unit, softwood mortality peaked in the 21- to 40-year age class and again in the 61- to 80-year age class. Hardwood mortality in the South unit peaked in the 61- to 80-year age class.

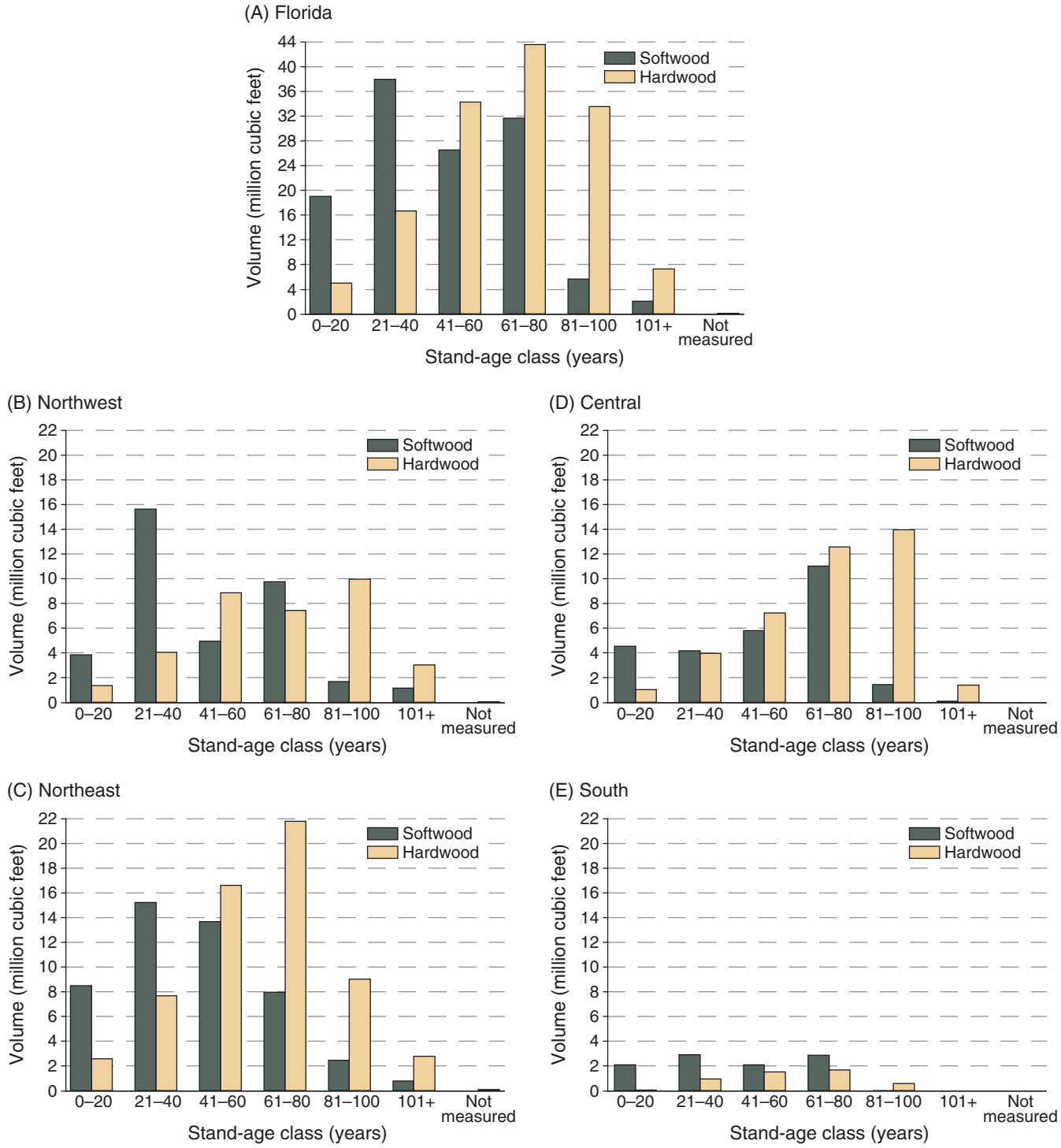

Figure 15—Average annual mortality of trees in (A) Florida by stand-age class, major species group, and survey unit (B) Northwest, (C) Northeast, (D) Central, and (E) South, 2013.

Standing Dead Trees

The number of standing dead trees by cause of death across the State provides a gauge to the health of Florida's timberland. Figure 16A shows the number of standing dead trees, 101 million trees ≥5 inches d.b.h., present on timberland in 2013 and lists major agents involved. In 2013, the number of standing dead trees was equivalent to 1.4 percent of the total all-live tree population on timberland. In comparison, Florida had <98 million standing dead trees on timberland in 2007, which was equivalent to 1.3 percent of the total all-live tree population at that time. Figure 16A showed almost 30 percent of the standing dead trees in 2013 were snags measured in prior surveys for which cause of death was attributed at that time. To ascertain current impacts, only data for new snags are broken out by cause of death. Statewide in 2013, for all species combined, the leading identifiable causes of death in descending order of prevalence were disease, weather, fire, vegetation, insect, and silviculture/land clearing. However, the order differed between softwoods and hardwoods.

For softwood species, disease was the leading identifiable cause of death statewide (fig. 16A), with the order changing to disease, fire, weather, insect, vegetation, and silviculture/land clearing. For hardwood species, disease was the leading identifiable cause of death statewide, with the order changing to disease, weather, vegetation, fire, silviculture/land clearing, and insect. The order of the impact for these leading identifiable causes of death further differed among the four survey units of the State.

In the Northwest unit (fig. 16B), disease was the leading identifiable cause of death for softwoods, and weather was second. For hardwoods in the Northwest unit, disease was the leading identifiable cause of death, and weather was second.

In the Northeast unit (fig. 16C), disease was the leading identifiable cause of death for softwoods, and fire was second. This unit accounted for 53 percent of the State total softwood trees lost to disease, and 45 percent of those lost to fire. For hardwoods in the Northeast unit, disease was the leading identifiable cause of death, and vegetation was second. The Northeast unit accounted for 58 percent of the State total hardwood trees lost to disease.

In the Central unit (fig. 16D), weather was the leading identifiable cause of death for softwoods, and insects/disease were tied for second. The Central unit accounted for 41 percent of the State's total softwood trees lost to weather. For hardwoods in the Central unit, disease was the leading identifiable cause of death, and weather was second.

In the South unit (fig. 16E), fire was the leading identifiable cause of death for softwoods, and weather was second. The South unit accounted for 39 percent of the State's total softwood trees lost to fire. For hardwoods in the South unit, disease was the leading identifiable cause of death, and silviculture/land clearing was second. The South unit accounted for 40 percent of the State's total hardwood trees lost to silviculture/land clearing.

Laurel Wilt Disease

In 2002, the nonnative redbay ambrosia beetle (*Xyleborus glabratus*), was captured in monitoring traps near Port Wentworth, Georgia (Rabaglia 2003). The beetle vectors a plant pathogenic fungus, (*Raffaelea lauricola*), which interferes with water transport in affected trees in the family Lauraceae, causing wilting and death. This insect-disease complex was quickly recognized as a serious threat to redbay (*Persea borbonea*), sassafras (*Sassafras albidum*), and several other trees in the Lauraceae family (Mayfield and Thomas 2006). Avocado is the most commercially important tree susceptible to laurel wilt, but other Lauraceae are of considerable ecological importance where they occur. Monitoring plots established in the initial area of laurel wilt in Florida (coastal Duval County) confirmed the presence of the disease and the beetle in 2005. Rapid

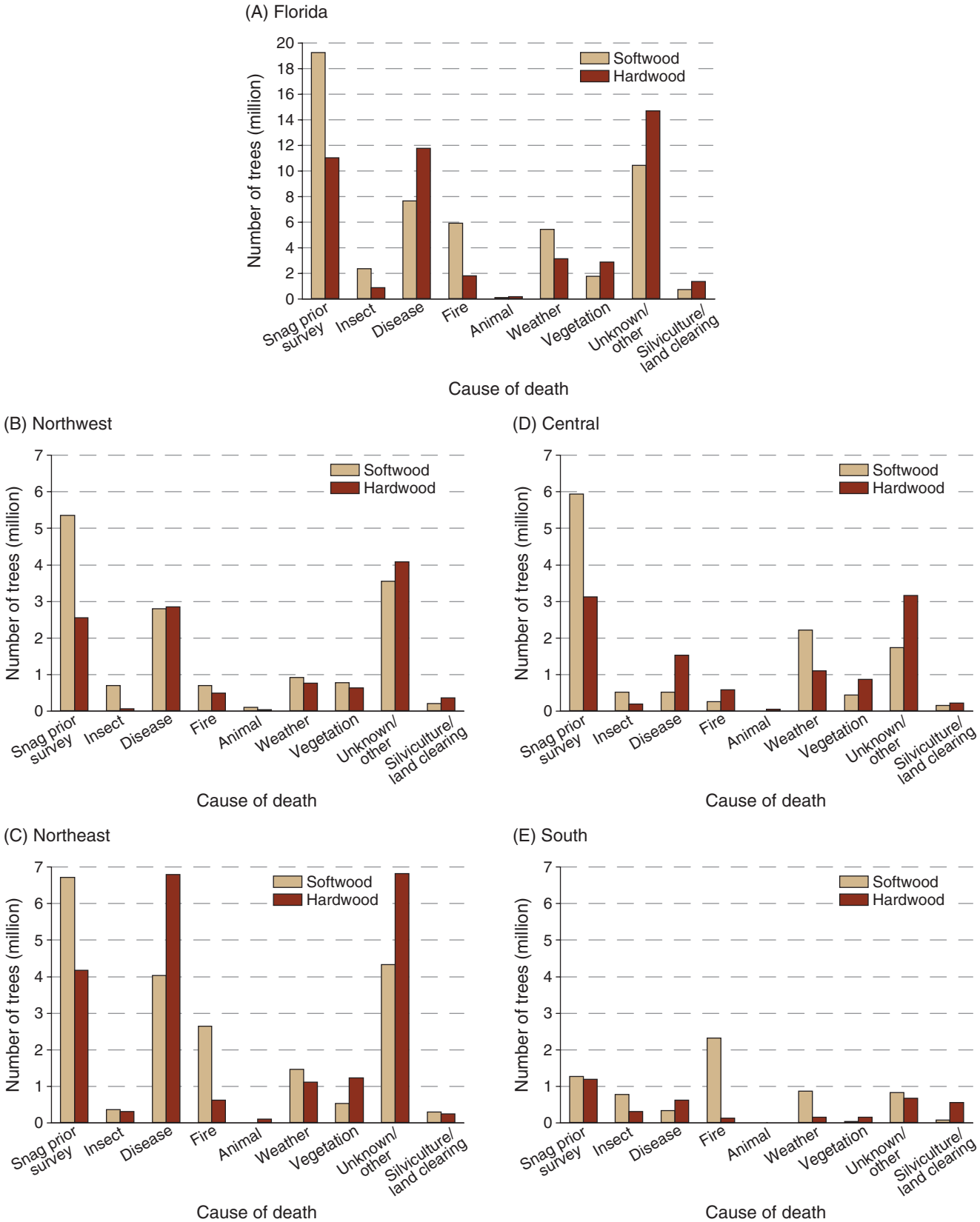

Figure 16—Number of standing dead trees ≥5 inches d.b.h. on timberland in (A) Florida by cause of death, major species group, and survey unit (B) Northwest, (C) Northeast, (D) Central, and (E) South, 2013.

mortality of redbay trees was documented in 2005–2006, when Fraedrich and others (2008) observed an increase in cumulative percentage of mortality (>2.5 cm d.b.h. trees) from 9.8 to 92.4 percent over a brief 16-month period.

Laurel wilt was briefly reviewed in Florida's Forests 2007, when tree mortality due to the disease had been detected in 16 Florida counties. By January 2015, the disease had been detected in all but eight Florida counties (fig. 17). The disease currently threatens the avocado industry as well as the National Germplasm Repository for avocado in Miami, FL. Eventually, while extinction of native *Persea* species is unlikely due to a variety of factors, the disease may spread to other areas such as the U.S. Pacific coast where potentially susceptible Lauraceae occur (reviewed by Kendra and others 2013). Clearly, the portion of the landscape currently dominated by *Persea* is changing rapidly in Florida and the future of the avocado industry is uncertain.

Down Woody Material

The total amount of down woody material (DWM), both coarse and fine, accumulating on the forest floor can have implications for forest health. This debris, whether caused by damage agents such as weather, disease, or human activity, or even by stand senescence, can provide fuels for future fire events. Some determination of the amounts and locations of its occurrence can be a desirable byproduct of forest survey measurements. FIA collected DWM information in cubic feet on forest land for 2010. These data have been reprocessed due to algorithm corrections, resulting in minor adjustments for 2013 that are included in this report for additional perspective on the condition and health of Florida's forests.

In 2013, FIA forest survey measurements estimated nearly 11.1 billion cubic feet of DWM existed on Florida's <17.3 million acres of forest land (fig. 18A). Statewide, DWM averaged 643 cubic feet per acre of

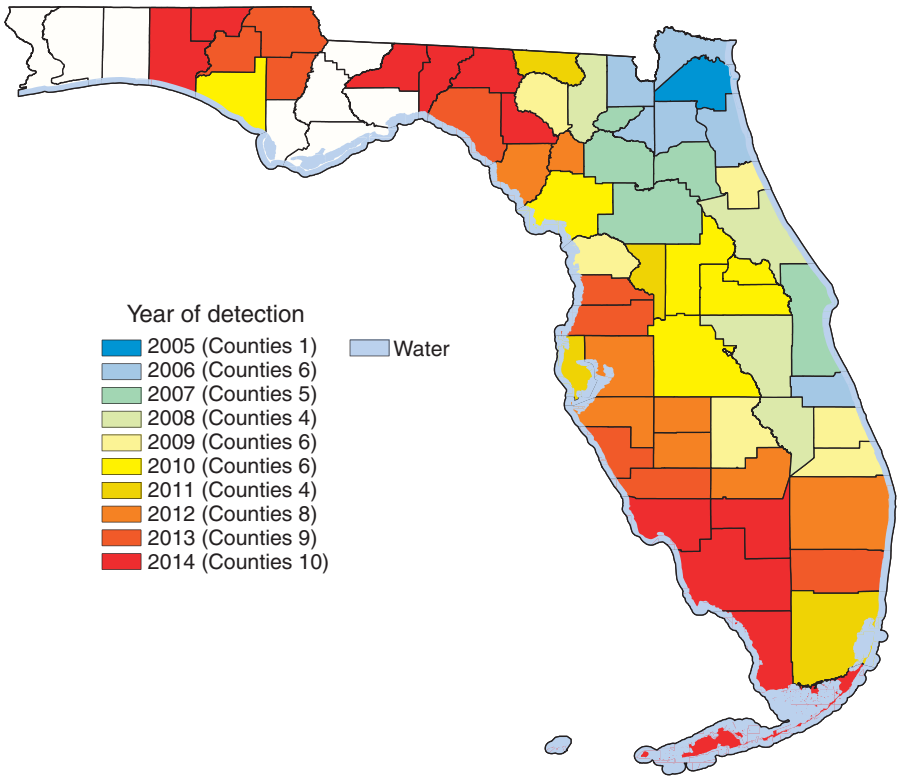

Figure 17—Map showing southward and westward expansion of laurel wilt from its introduction in northeastern Florida in 2005.

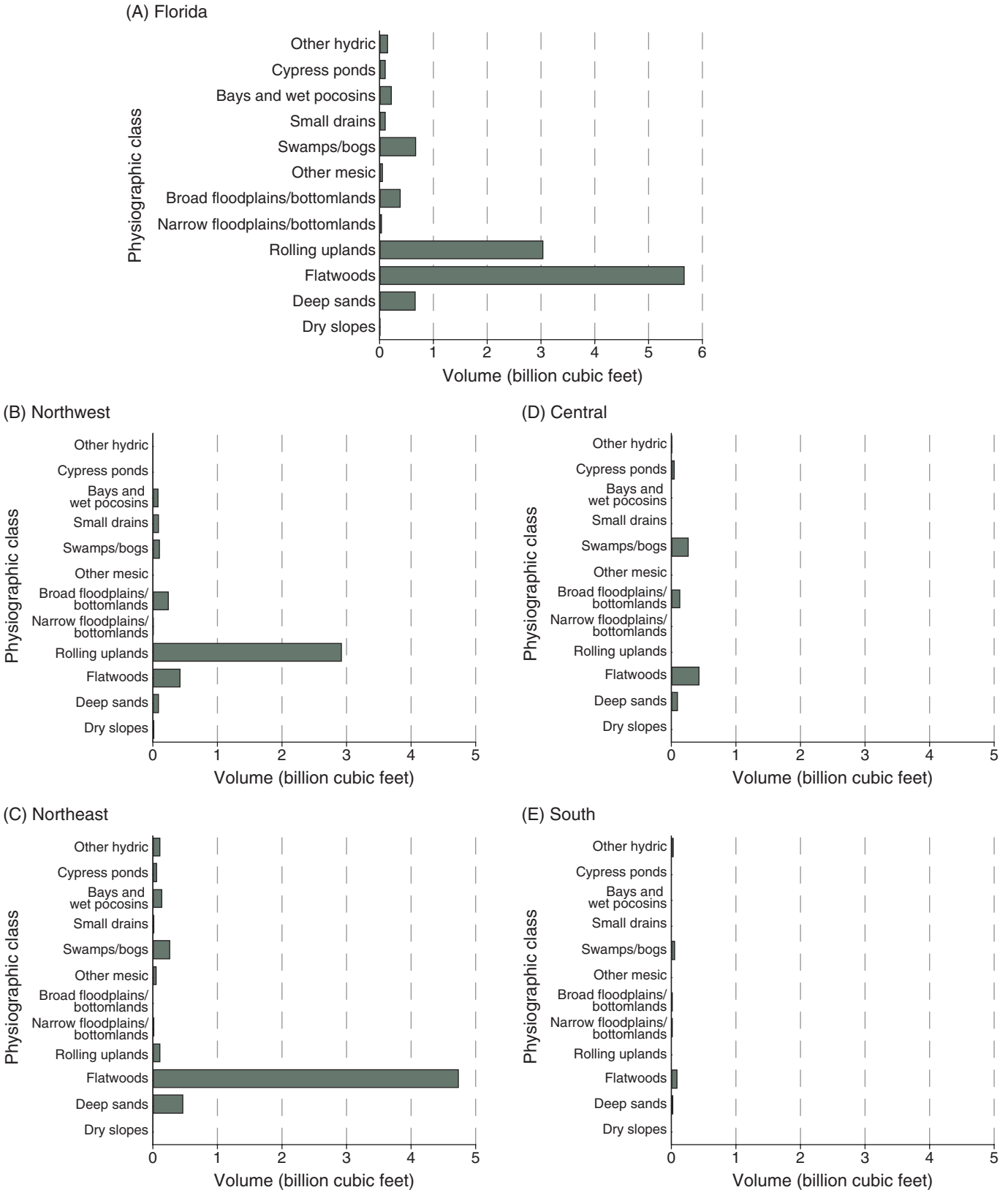

Figure 18—Volume of down woody material (DWM) on forest land in (A) Florida by physiographic class and survey unit (B) Northwest, (C) Northeast, (D) Central, and (E) South, 2010 (latest available).

forest land. This average varied by survey unit from a low of 91 cubic feet per acre in the South unit, 329 cubic feet per acre in the Central unit, and 711 cubic feet per acre in the Northwest unit, to a high of 907 cubic feet per acre in the Northeast unit.

The Northeast unit accounted for nearly 54 percent, or <6.0 billion cubic feet, of the State's total DWM. The Northwest unit accounted for 36 percent, or <4.0 billion cubic feet, and the Central unit accounted for <9 percent, or <1.0 billion cubic feet. The South unit accounted for the least, with 0.2 billion cubic feet, or <2 percent of the State's total DWM.

The physical geography of forest land plays a role in DWM occurrence. FIA classifies the terrain of all plot areas by physiographic class (U.S. Department of Agriculture Forest Service 2007a). Land form, topographic position, and soil generally determine physiographic class. Based on these classes, more of the State's DWM was located on flatwoods than on any other physiographic class (fig. 18A). Statewide, flatwoods accounted for 51 percent of the total DWM. Rolling uplands were second, accounting for 27 percent. The Swamps/bogs physiographic class contained 6 percent of Florida's DWM and deep sands contained another 6 percent. Broad floodplains/bottomlands were next with >3 percent of the State's total DWM.

The survey units generally subdivided the State based on approximate physiographic regions, so differences in DWM location by survey unit were evident. In the Northwest unit (fig. 18B), most of the unit's DWM was located in the rolling uplands physiographic class. Rolling uplands accounted for 74 percent of the unit's total DWM. The flatwoods class was second with 11 percent, and the broad floodplains/bottomlands were third with 6 percent of the unit's DWM. The Northwest unit accounted for 96 percent of the State's total rolling upland DWM.

In the Northeast unit (fig. 18C), most of the unit's DWM was located in the flatwoods physiographic class. Flatwoods accounted for 79 percent of the unit's total DWM. The deep sands physiographic class was second with <8 percent of the unit's DWM. The swamps/bogs physiographic class was third, accounting for >4 percent. The Northeast unit accounted for 83 percent of the State's total flatwoods DWM.

In the Central unit (fig. 18D), 44 percent of the unit's total DWM was located in the flatwoods physiographic class, and 27 percent was located in the swamps/bogs class. The broad floodplains/bottomlands class was third with <14 percent of the unit's total DWM. The Central unit accounted for 39 percent of the State's total swamps/bogs DWM.

In the South unit (fig. 18E), 40 percent of the unit's DWM was located in the flatwoods physiographic class. The swamps/bogs physiographic class was second with 22 percent of the unit's total DWM.

Nonnative Invasive Plants

Many nonnative invasive plants have been recognized as problematic because they compete with or even threaten to displace native species. Thus, it is important to assess their occurrence to gauge their potential impact. Table 2 lists by frequency those invasive species of trees, shrubs, vines, grasses, and ferns encountered on forested FIA survey plots in Florida in 2013. The list includes two samples due to a switch from FIA field manual version 4.0 guidelines (U.S. Department of Agriculture Forest Service 2007a) to field manual version 6.0 guidelines (U.S. Department of Agriculture Forest Service 2012) between the 2007 and 2013 survey cycles. Basically, field manual 6.0 identifies additional species as nonnative invasives.

The most frequently encountered invasive tree was Chinese tallow, which was encountered on 68 plots. The melaleuca (punktree) tree was tied with camphortree for second in occurrence, with each encountered on 53 plots. Third was mimosa, which was encountered on 40 plots. Overall, invasive trees were found on >8 percent of all forested plots in Florida in 2013.

The most frequently encountered invasive shrub was the Brazilian pepper, which was encountered on 181 plots. Brazilian pepper was also the most frequently encountered invasive plant form in the State. As a group, the privets were second in occurrence for the shrubs, encountered on 87 plots. Overall, invasive shrubs were found on >13 percent of all forested plots in Florida in 2013.

The most frequently encountered invasive vine was Japanese honeysuckle, which

was encountered on 53 plots. As a group, yam was second in occurrence for vines, encountered on 23 plots. Overall, invasive vines were found on <4 percent of all forested plots in Florida in 2013.

The most frequently encountered invasive grass was cogongrass, which was encountered on 37 plots. Nonnative bamboo was second, encountered on 5 plots. Overall, invasive grasses were found on >1 percent of all forested plots in Florida in 2013.

The most frequently encountered invasive fern was Japanese climbing fern, which was encountered on 152 plots. Small leaf climbing fern was second, encountered on 49 plots. Overall, invasive ferns were found on 7 percent of all forested plots in the State in 2013.

Altogether, for all categories of plants, invasive species of some type were found on <34 percent of all forested plots in Florida in 2013.

Table 2—Regionally recognized nonnative invasive plants identified on forest survey plots by common name, scientific name, and number of plots, Florida, 2013

Common name	Scientific name	Plots	
		4.0[a]	6.0[b]
		number	
Trees			
Chinese tallow	*Triadica sebifera*	60	8
Punktree	*Meleleuca quinquenervia*	45	8
Camphortree	*Cinnamomum camphora*	41	12
Mimosa	*Albizia julibrissin*	33	7
Chinaberry	*Melia azedarach*	17	4
Carrotwood	*Cupaniopsis anacardioides*	N/A	2
Princesstree	*Paulownia tomentosa*	1	1
Australian pine	*Casuarina equisetifolia*	1	0
Java plum	*Syzygium cumini*	N/A	1
Tungoil	*Vernicia fordii*	N/A	1
paper mulberry	*Broussonetia papyrifera*	N/A	1
Shrubs			
Brazilian pepper	*Schinus terebinthifolius*	141	40
Privet	*Ligustrum* spp.	53	22
Caesarweed	*Urena lobata*	N/A	50
Tropical soda apple	*Solanum viarum*	21	0
Japanese privet	*Ligustrum japonicum*	10	2
Coral ardisia	*Ardisia crenata*	10	0
Lantana	*Lantana camara*	6	4
Wetland nightshade	*Solanum tampicense*	5	4
Guava	*Psidium guajava*	4	2
Rose myrtle	*Rhodomyrtus tomentosa*	3	3
Nonnative roses	*Rosa* spp.	3	1
Earleaf acacia	*Acacia auriculiformis*	N/A	3
Surinam cherry	*Eugenia uniflora*	2	1
Sacred bamboo	*Nandina domestica*	1	2
Sericea lespedeza	*Lespedeza cuneata*	N/A	2
Thorny olive	*Elaeagnus pungens*	N/A	1
Vines			
Japanese honeysuckle	*Lonicera japonica*	37	16
Yam	*Dioscorea alata*	18	5
Skunk vine	*Paederia foetida*	9	0
Rosary pea	*Abrus precatorius*	6	9
Wisteria	*Wisteria sinensis*	4	1
Kudzu	*Pueraria montana*	2	0
Ivy	*Hedera helix*	2	2
Grasses			
Cogongrass	*Imperata cylindrica*	25	12
Nonnative bamboos	*Phyllostachys aurea*	5	0
Giant reed	*Arundo donax*	1	0
Ferns			
Japanese climbing fern	*Lygodium japonicum*	121	31
Small leaf climbing fern	*Lygodium microphyllum*	31	18
Swordfern	*Nephrolepis cordifolia*	1	6

N/A = not applicable.

[a] Count of survey plots with at least one invasive plant present collected under Forest Inventory and Analysis Program field manual version 4.0 guidelines during inventory cycle.

[b] Count of survey plots with at least one invasive plant present collected under Forest Inventory and Analysis Program field manual version 6.0 guidelines during inventory cycle.

CYPRESS STATUS

In 2013, Florida's forest land totaled 17.3 million acres, of which 1.5 million acres were classified into two forest types containing either baldcypress (*Taxodium distichum*) and water tupelo (*Nyssa aquatica*) (code 607), or baldcypress and pondcypress (*Taxodium ascendens*) (code 609). The first code captures areas with 25–50 percent cypress stocking, while the second code captures areas with >50 percent cypress stocking. Nearly 400,000 acres of cypress forest land is under the jurisdiction of the U.S. National Park Service as part of the Big Cypress National Preserve in south Florida. Another 25,000 acres of cypress forest land is under the jurisdiction of the U.S. Fish and Wildlife Service. Unless stated otherwise, the remainder of this section describes status and trends of baldcypress and pondcypress resource, collectively referred to as cypress on timberland, which belonged to forest type codes 607 and 609 in Florida's 9th cycle FIA inventory, which ended in 2013. Therefore the following analysis excludes the Big Cypress National Preserve, U.S. Fish and Wildlife Service, other "reserved" status forest land, and forest land not capable of producing at least 20 cubic feet of wood per acre per year.

At the end of 2013 cypress timberland was nearly 962,000 acres (from FIADB 7/20/2015), which was >6.2 percent of all Florida timberland. This was 59,000 acres less than at the end of the 2007 inventory cycle when at 1.02 million acres cypress was >6.5 percent of all timberland. The relative decrease in cypress timberland area (>5.8 percent) was larger than the corresponding overall decrease of Florida timberland (<1.4 percent). In 2013, cypress timberland was predominantly in private ownerships at nearly 542,000 acres, with state controlling 305,000, county and municipal governments 41,000, and Federal Government the remaining 74,000 acres. The largest area of cypress on timberland at 325,000 acres was found in the Central unit, followed by the Northeast unit at 267,000 acres, the Northwest unit at 197,000 acres, and the South unit at 172,000 acres.

In 2013, 73 percent of cypress and pondcypress dominated stands belonged to "large diameter" stand-size class. These stands have one-half or more of total stocking in sawtimber and poletimber trees, and sawtimber trees equal or exceed poletimber stocking. Such stands were the most common in the Northwest FIA unit at 80 percent of all cypress timberland, and the least common in South Florida at 69 percent. Medium diameter (predominantly poletimber size) stands on average occupied 17 percent of cypress timberlands across Florida, and were the most common in the South unit at 24 percent, and the least common in the Northwest unit at 11 percent. Small diameter (predominantly sapling-seedling) stands occupied 10 percent of total cypress timberland acreage, ranging from 6 percent in the South unit to 16 percent in the Northeast unit.

The predominance of large diameter stands could perhaps be explained by cypress regeneration practices. Almost without exception, cypress is regenerated by sprouting after harvest or natural disturbance. Planting of both baldcypress and pondcypress is possible but seldom seen in the field. The inventory cycle which ended in 2013 evidenced 30,500 acres of "cutting" treatment on cypress timberland in the whole of Florida. This treatment, which almost certainly was a final harvest, or other cypress removal, was distributed throughout the State's FIA units as follows: Northeast 14,300 acres, Northwest 11,700 acres and Central Florida 4,500 acres. No such "cutting" treatment was evidenced on cypress timberland in the South unit during the 9th inventory cycle. Another 1,500 acres of "other silvicultural treatment" was evidenced for the Central unit, with no other units documenting any other silvicultural treatments.

In 2013 cypress timberland supported a net volume of <2.9 billion cubic feet in live trees ≥5 inches d.b.h. (fig. 19), which was 13.8 percent of all net volume in live trees of the same size on timberland. This was slightly smaller share than at the end of the 2007 inventory cycle when cypress was 14.3 percent of all live net volume on timberland. However, despite this 0.5 percent decrease in the share of the total volume, the overall cypress net volume actually increased by 146 million cubic feet between the two inventory cycles. In relative terms the increase of cypress net volume (<5.4 percent) between 2007 and 2013 was about half of what the overall net timber volume increase was (>9.2 percent) in the same time period. Despite this seemingly healthy trend of overall cypress volume increase, a closer look revealed that there were rather dramatic decreases in cypress net timber volumes in four youngest 20 year age classes. These decreases were 64.2 percent, 28.4 percent, 15.5 percent, and 9.6 percent for trees in 0–20, 21–40, 41–60, and 61–80 year age classes, respectively. Only for cypress in 81–100 and older than 100 years old classes, the net timber volume changes were highly positive at 22.2 percent and 56.0 percent, respectively, driving the overall net volume increase between the two inventory cycles.

Yet another look at cypress net live volume in trees ≥5 inches d.b.h. by 2-inch diameter classes supports an overall positive trend in the status of the resource on timberland, despite younger age classes showing decreased net volume between 2007 and 2013 in all but the largest diameter trees (fig. 20). The same trend of lower net volume in 2013 than 2007 for smaller diameter trees was evident in three out of the four FIA units with South Florida being the exception (fig. 21).

Positive outlook for the cypress resource is further corroborated by trends in cypress net growth, removals, and the difference between the two, i.e., net change (fig. 22). The net growth was multiple times higher than net removals, resulting in positive net volume change in all the diameter classes for trees ≥5 inches d.b.h. Overall, the net growth was close to 9 times higher than net removals for all the diameter classes combined. One troubling sign, however, was high mortality rates in trees <13.0 d.b.h., where mortality was as high or higher than net growth and net change in three out of four diameter classes considered here (fig. 22). A closer look at components of change (growth, removals, mortality) by ownership class revealed that private cypress timberland experienced

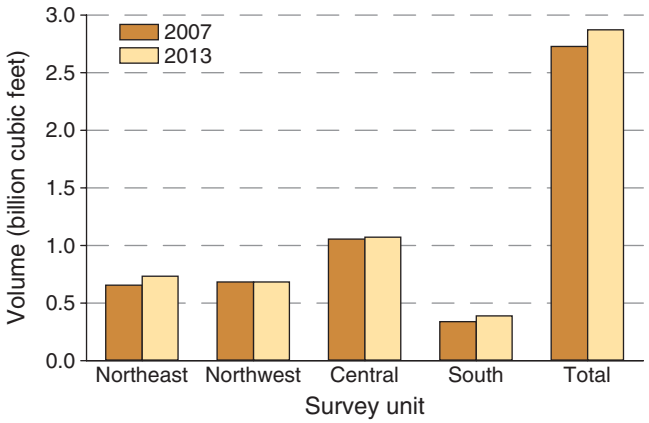

Figure 19—Net volume of live trees ≥5 inches d.b.h. in cypress and pondcypress forest types on timberland by survey unit, Florida, 2007 and 2013.

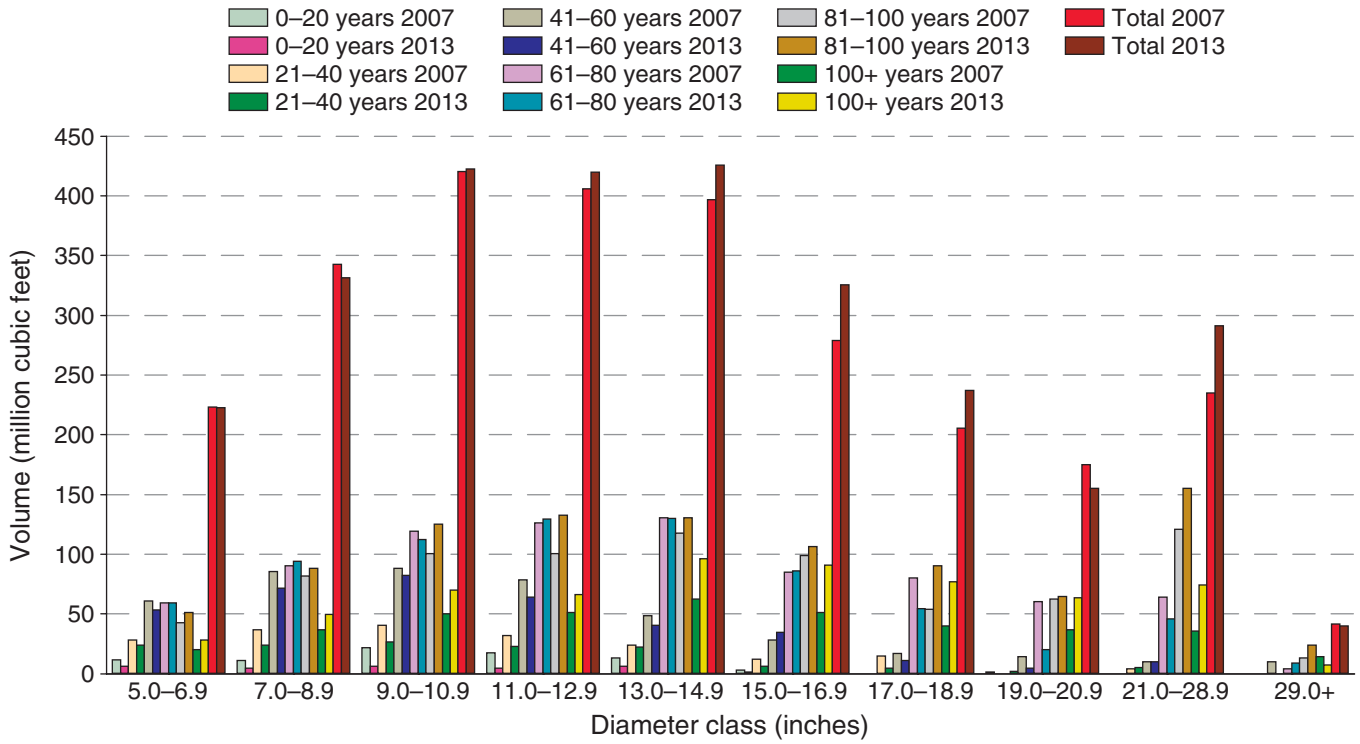

Figure 20—Net timber volume in cypress and pondcypress forest types for trees ≥5 inches d.b.h. in 2-inch diameter classes and 20-year age classes, Florida, 2007 and 2013.

the highest morality rate among all other ownerships (fig. 23). At 15.8 million cubic feet per year, the mortality rate in privately owned cypress forest types on timberland was greater than the net growth rate and almost twice the rate of the net change. This mortality was also 2.5 times higher than the annualized removals between 2009 and 2013, which averaged 6.2 million cubic feet on private cypress timberland. Further, the State ownerships also recorded high mortality rate of 11.9 million cubic feet annually, however, State's net growth and net change were almost three times higher than the mortality on its cypress timberland. State removals were very small, while removals on federal cypress timberlands were nonexistent. Also, county and municipal government cypress timberlands were subject to relatively low removals of 191,000 cubic feet and <50,000 cubic feet of mortality. Therefore it is most likely that the high mortality rates on private, and to some degree State's cypress timberland were the reason for the lower net volumes in 2013 than 2007 in smaller diameter trees and younger age classes reported here. Analyses of components of change also revealed negative growth rates and therefore, negative net change rates for the U.S. Department of Defense cypress timberland (fig. 23) as well as both U.S. Department of Defense and U.S. Fish and Wildlife Service cypress forest land (data not shown) despite no removals on all federally owned cypress forests.

In summary, cypress and pondcypress forest type status on timberland appeared relatively stable with slightly increased net timber volume in live trees ≥5 inches d.b.h., despite a small decrease in acreage. However, up to three quarters of cypress acreage was in sawtimber size trees, with a

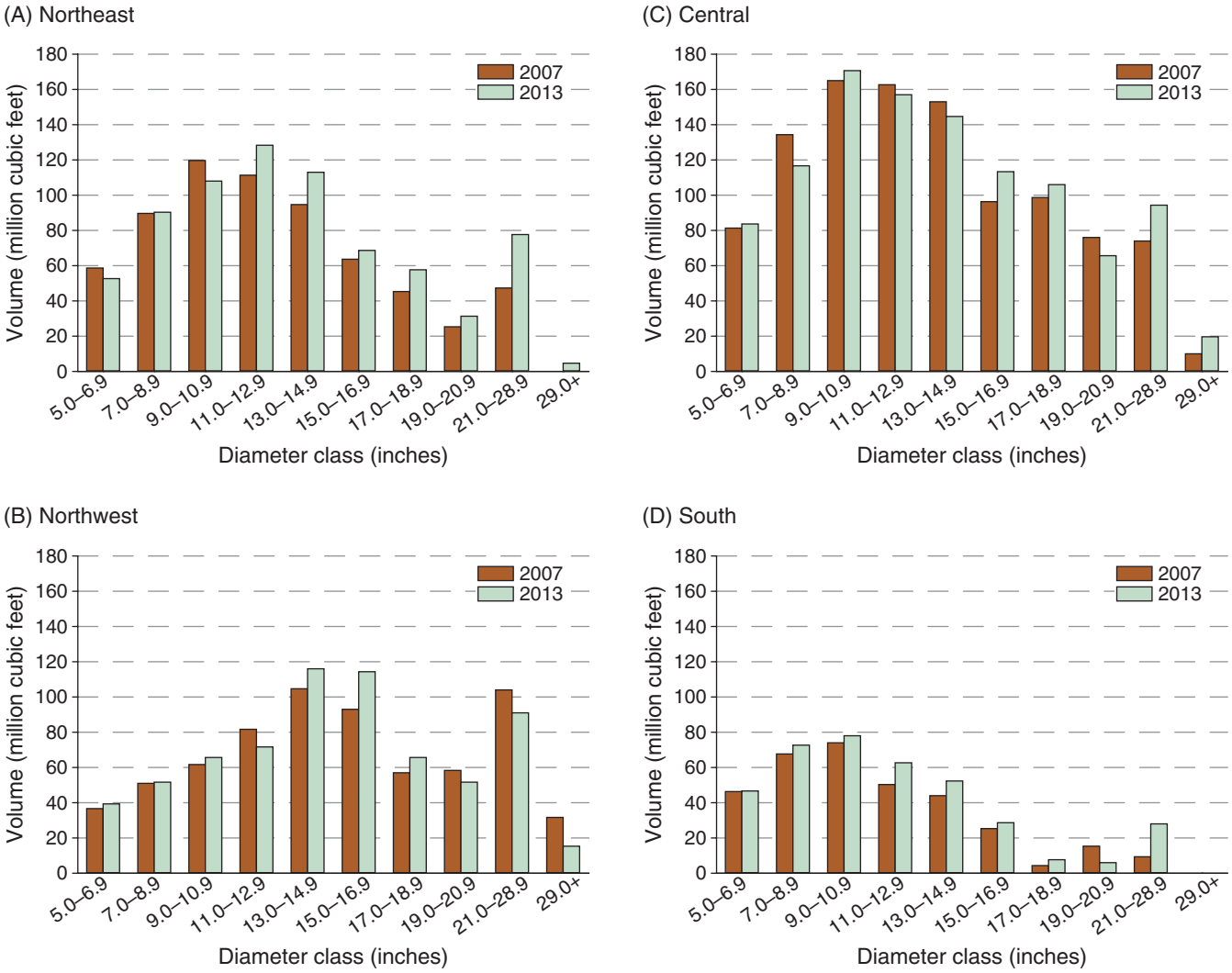

Figure 21—Net volume in live trees ≥5 inches d.b.h. in cypress and pondcypress forest types on timberland by diameter class, survey year, and survey unit (A) Northeast, (B) Northwest, (C) Central, and (D) South, Florida.

relatively small presence of poletimber and even smaller acreage of sapling-seedling stands. In addition, younger age and smaller diameter classes decreased in timber volume from 2007 to 2013. This trend was most likely the result of high mortality rates observed in younger stands and smaller diameter classes. The high mortality rates were most pronounced on private timberland in the Northeast, Northwest and Central units, and to a lesser degree on State owned cypress and pondcypress forest types in the same units. In the face of the high mortality rates in younger stands and smaller diameter classes, compounded by stands structure tilted toward large diameter, sawtimber stands already, the future of the cypress resource in Florida will have to be closely monitored.

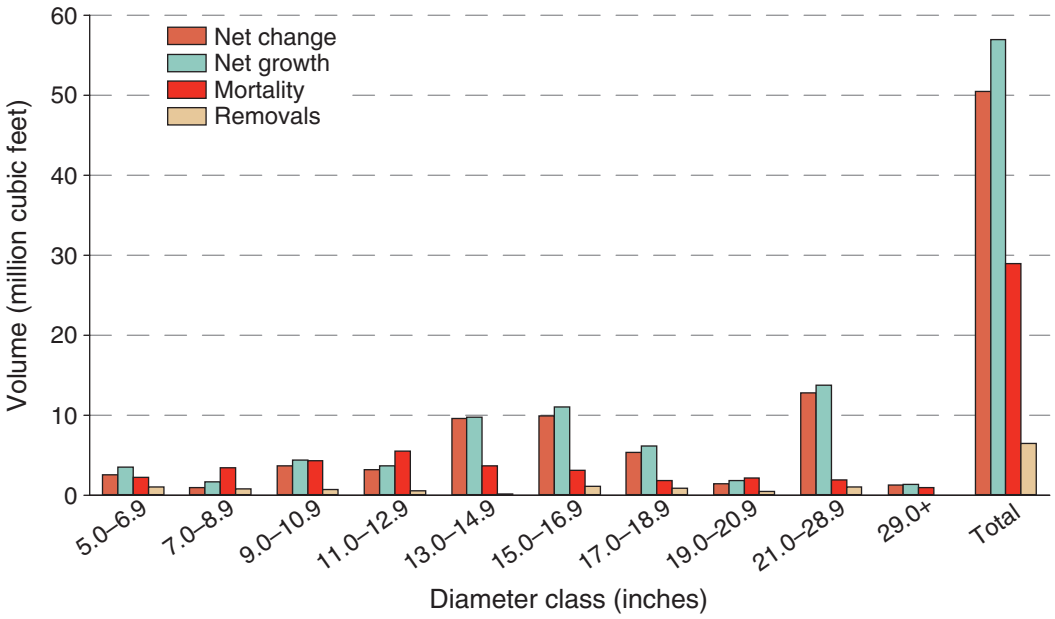

Figure 22—Net change, net growth, mortality, and removals of trees ≥5 inches d.b.h. in cypress and pondcypress forest types by 2-inch diameter class on timberland, Florida, 2013.

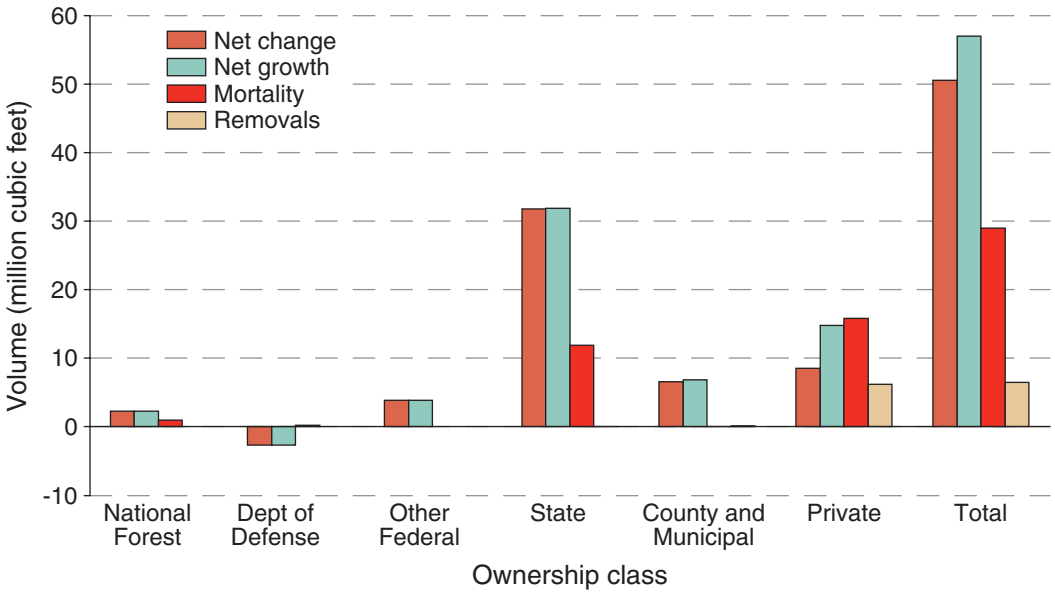

Figure 23—Net change, net growth, mortality, and removals of trees ≥5 inches d.b.h. in cypress and pondcypress forest types by ownership class on timberland, Florida, 2013.

SUMMARY

The 2013 FIA survey recorded <17.3 million acres of forest land in Florida, of which 15.4 million acres were classified as timberland. Hardwood forest types covered 7.8 million acres (51 percent) of timberland, and softwood forest types covered 7.0 million acres (45 percent). Nonstocked timberland accounted for the remaining 4 percent. Longleaf-slash pine was the predominant forest-type group and occupied 5.3 million acres. Nonindustrial private forest landowners controlled 10.2 million acres (66 percent) of the State's timberland. Forest industry held <0.8 million acres (5 percent) and public ownerships held >4.4 million acres (<29 percent).

The volume of all-live trees on timberland totaled >20.8 billion cubic feet. Softwoods accounted for <11.9 billion cubic feet (57 percent) of the State's total volume, and hardwoods accounted for <9.0 billion cubic feet. Net annual growth of all-live trees averaged 870 million cubic feet, and annual removals averaged 570 million cubic feet. Softwood net growth averaged 655 million cubic feet per year and exceeded softwood removals, which averaged 467 million cubic feet per year. In comparison, hardwood net growth averaged 215 million cubic feet per year and exceeded hardwood removals, which averaged 103 million cubic feet per year.

Net growth increased for both softwood and hardwood in the Northwest and Northeast units of the State. Although removals also increased for softwood in these two northern units, net growth still exceeded removals providing a positive net change for the softwood resource there. However, net growth decreased for both softwood and hardwood in the Central and South units of the State. Reductions in the removals for softwood in both the Central and South units helped offset the decrease in softwood net growth there and aided continuation of positive net change for softwood in those two units. Although hardwood net growth was up in the two northern units, the reduction in hardwood removals there improved that areas positive net change for hardwood. In the two southern units, hardwood net growth decreased, coupled with an increase in hardwood removal in the Central unit and stable hardwood removal in the South unit created a declining but still positive net change for hardwood in these two southern units. This situation is particularly tight in the Central unit.

The 500,000-acre decrease in area of planted softwood forest types since 2007 provides evidence for a supply concern of the State's wood-using industry that began early this millennium. The 2007 survey showed a 100,000-acre decrease at that time as well. However, if this trend continues, considering Florida's rapid urban and population growth, forest industry's continued divesture of land holdings, paucity of planting incentives, bioenergy wood using interests, and potential economic rebound, then the sustainability of the planted softwood resource as it exists could be tested. Reliance on the "other corporate" land ownerships, often TIMOs and REITs, and private individual lands to compensate will be imperative.

The two northern units of Florida are the primary source for the State's wood using industry, and all indications there are that these forested acres are relatively healthy and as productive as in previous surveys. Growth rates are high and net growth exceeded removals estimates at the State and unit levels. On these bases, the 2013 Florida survey data suggest an adequate supply of softwood and hardwood volume at this time.

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GLOSSARY

Terms used in this report are defined in the Forest Inventory and Analysis (FIA) glossary available on the FIA Web site at https://srsfia2.fs.fed.us/states/Glossary_SRSFIA_2017.doc. For a hardcopy of the glossary, please call 865-862-2000 or write to the following address:

Southern Research Station
Forest Inventory and Analysis
4700 Old Kingston Pike
Knoxville, TN 37919

INVENTORY METHODS

Inventory Methods

The Florida 2013 inventory was a three-phase, fixed-plot design conducted on an annualized basis. Annualized means that a portion (a panel) of the entire sample population (a cycle) is collected each year until all plots have been remeasured. For the 2013 survey, the inventory involved 5 years of new data collection from a 5-year cycle period plus reuse of the previous cycle's data for those plots not yet remeasured. Phase 1 (P1) provides the area estimates for the inventory. Phase 2 (P2) involves on-the-ground measurements of sample plots by field personnel. Phase 3 (P3) is a subset of the P2 plot system where additional measurements are made by personnel to assess unique forest health indicators, many of which are not measured on the P2 plots. It should be noted here that, due to budgetary restraints, only a portion of the P3 data were collected for the 2013 survey.

The data that were used to derive the estimates in this report came from panels 1, 2, 3, 4, and 5 of cycle 9. Collectively, these five panels represent approximately 100 percent of sample plots in the cycle. The data were processed with National Information Management System (NIMS) version 6.0 software.

Sample Design Overview

Under Florida's annual inventory system, approximately 20 percent (one panel) of the total number of plots in a State are measured every year over a 5-year period (one cycle). Each panel of plots is selected on a subgrid that is slightly offset from the previous panel, so that each panel covers essentially the same sample area (both spatially and in intensity) as the prior panel. In the sixth year, the plots that were measured in the first panel are remeasured. This marks the beginning of the next cycle of data collection. The 1998 Farm Bill requires a report every 5 years using the available field measurements completed at that time for the 5-year report. The dataset consists of data that are <1 year old (the most recently collected data), data up to 5 years old (the data collected at the beginning of the cycle), and data not yet remeasured that are reused to yield a full cycle's worth of data.

Sample Design Phases

The three phases (P1, P2, and P3) of the current sampling method are based upon a hexagonal-grid design for sample placement on the ground; successive phases are sampled with less intensity. In general, the P1 phase involves area estimation. The P2 and P3 phases involve placement of sample plots on the ground where measurement of variable attributes are made. The grid ensures a systematic placement of P2 and P3 plots on the ground. There are 16 P2 hexagons for every P3 hexagon. The P2 and P3 hexagons represent about 6,000 and 96,000 acres, respectively. To ensure systematic coverage of the sample domain (State), the goal is to place one P2 plot in every hexagonal grid cell. The grid covering Florida contains 7,089 hex cells with plots essentially centrally located.

Area

The determination of forest area applies a stratification technique to improve the precision of the estimate; that is, it reduces the variance of the estimate. With this method, the placement (on the ground) and subsequent classification (by land use) of the P2 plot carry much of the weight in determining forest area. The area of control was the survey unit. Forest Inventory and Analysis (FIA) used National Land Cover Database (NLCD) data for the stratification platform. The NLCD data are derived from Landsat Thematic Mapper data and incorporate the U.S. Geological Survey's land cover classification scheme. Using these data, FIA identified four strata to improve the variance of the area estimate. These

strata are identified by a pixel classification according to four types of placement: (1) pixels in forest, (2) pixels in nonforest, (3) pixels in nonforest but within a 2-pixel width of a forest edge, and (4) pixels in a forest area but within a 2-pixel width of a forest edge. The estimation of forest area is then the sum across all strata from respective pixel counts (based on placement within the above strata) and the mean area from the P2 plots. This type of approach places more weight on the P2 plot in area determination than with previous aerial photo dot-count methods.

Ownership

Under the annual inventory system, area estimation of all lands and ownerships was based on the probability of selection of P2 plot locations. There was no enumeration of any ownership (no use of known areas of ownership to determine area and plot expansion factors). As a result, the known forest land area (for specific ownerships) does not always agree with area estimates based on probability of selection. For example, the acreage of National forests, published by the National Forest System, will not agree exactly with the statistical estimate of national forest land derived by FIA. These numbers may differ substantially for very small areas.

Plot Design

Bechtold and Patterson (2005) describe the current P2 and P3 ground plots and explain their use. These plots are clusters of four points arranged so that one point is central and the other three lie 120 feet from it at azimuths of 0, 120, and 240 degrees (fig. A.1). Each point is the center of a circular subplot with a fixed 24-foot radius. Trees ≥5.0 inches in diameter at breast height (d.b.h.) are measured in these subplots. Each subplot in turn contains a circular $\frac{1}{300}$th-acre microplot with a fixed 6.8-foot radius (fig. A.2). Trees 1.0 to 4.9 inches d.b.h. and seedlings (<1.0 inch d.b.h.) are measured on these microplots.

Sometimes a plot cluster straddles two or more land use or forest condition classes (Bechtold and Patterson 2005). There are seven condition-class variables that require mapping of a unique condition on a plot: land use, forest type, stand size, ownership,

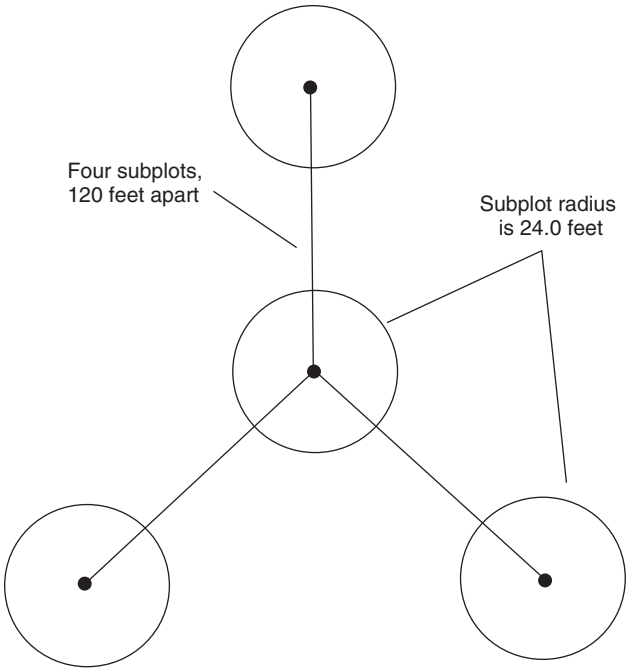

Figure A.1—Annual inventory fixed-plot design (the P2 plot).

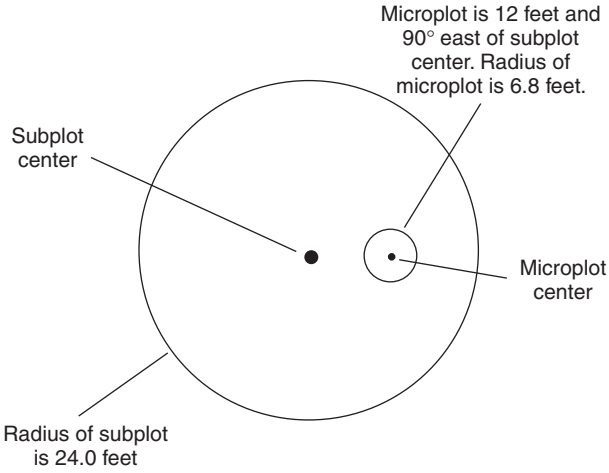

Figure A.2—Subplot and microplot layout.

stand density, regeneration status, and reserved status. A new condition is defined and mapped each time the aerial extent of one of these variables is encountered during plot measurement. The process of mapping any of these conditions on a plot changes the plot size for a respective condition. In other words, the condition size will be smaller than a full plot complement, so the variance of the estimate may increase.

Data on forest health variables (P3) are collected on about 1/16th of the P2 sample plots (U.S. Department of Agriculture Forest Service 2007b) (U.S. Department of Agriculture Forest Service 2010). P3 data are coarse descriptions, and are meant to be used as general indicators of overall forest health over large geographic areas. P3 data collection includes variables pertaining to tree crown health, down woody material (DWM), and foliar ozone injury. Tree crown health and DWM measurements are collected using the same plot design used during P2 data collection (fig. A.3).

Biomonitoring sites for ozone data collection are located independently of the FIA grid. Sites must be 1-acre fields or similar open areas adjacent to or surrounded by forest land, and must contain a minimum number of plants of at least two identified bioindicator species (U.S. Department of Agriculture Forest Service 2007b) (U.S. Department of Agriculture Forest Service 2010). Plants are evaluated for ozone injury, and voucher specimens are submitted to a regional expert for verification of ozone-induced foliar injury.

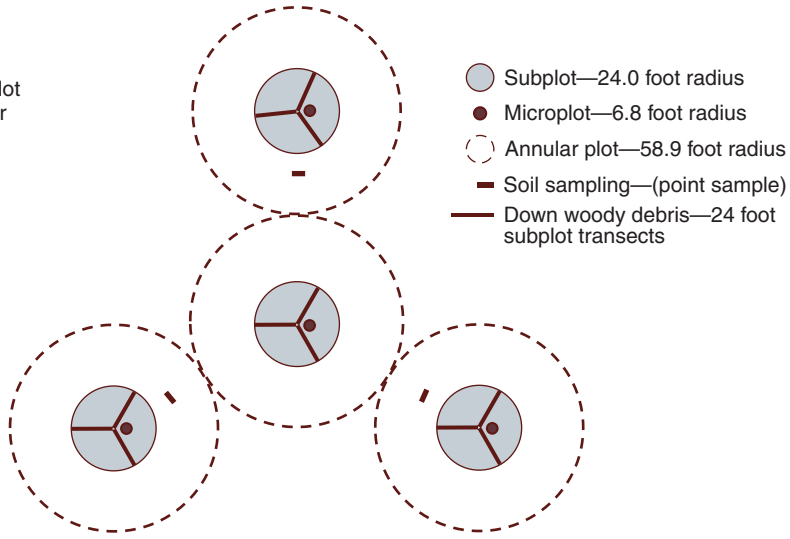

Figure A.3—Layout of the fixed-radius plot design illustrating where the P3 variables (soil and down woody material) were collected.

Volume

Tree volumes for each individual tally tree were derived by a linear regression model. The general form of the model involves two measurements from sample trees: d.b.h. and total height. This equation estimated gross cubic foot volume from a 1-foot stump to a 4-inch top for each sample tree. Separate equation coefficients for 77 species or species groupings were used. The volume in forks in the central bole and the volume in limbs outside of the main bole were excluded. Net cubic foot volume was derived by subtracting the estimate of rotten or missing wood for each sample tree. Volume of the saw-log portion (expressed in International ¼-inch board feet) of sample trees was derived by using board foot-to-cubic foot ratio equations. All equations and coefficients were developed from standing and felled tree volume studies conducted by FIA across several Southern States. For more detailed and specific information regarding volume models and coefficients, contact the Southern Research Station (SRS), FIA work unit.

Biomass

Tree biomass for each individual tally tree was derived by applying models and coefficients derived by McClure and Biesterfeldt (1981) and McClure and Knight (1984). The general form of the model used two measurements from sample trees: d.b.h. and total height. The coefficients derived green weight by means of a volume conversion method. The dry weight was then derived by multiplying the green weight by 0.5. The tree biomass model gives the weight of the total tree, including wood and bark, from ground level; foliage is not included. The model for the merchantable stem, including wood and bark, gives the weight of the stem from a 1-foot stump to a 4-inch top. For more detailed and specific information regarding biomass models and coefficients, contact the SRS FIA work unit.

Growth, Removals, and Mortality

Growth, removals, and mortality estimates were determined from the remeasurement of the 7,089 hexes with sample plots measured in the 2007 inventory. Florida's 2013 survey remeasured 6,474 of these plots. The 615-plot difference predominantly consisted of new plots (sample kind 1) as well as a nominal number of plots not sampled due to adverse conditions or denied access. Forty-six percent, or 2,983, of the remeasured plots were forested and 3,491 were nonforested. The remeasurement information was then used in the calculation of seven components of change: survivor growth, ingrowth, growth on ingrowth, growth on mortality, mortality, growth on removals, and removals. The mathematical exchanges between these components of change were used to determine average annual rates of net growth and removals. The interaction of net growth to removals ultimately provided estimates of net change for the resource.

Summary

Users wishing to make rigorous comparisons of data between surveys should be aware of the significant differences in plot designs and variable assessments as well as continued adjustments and improvements to the processing methods and algorithms used to enhance accuracy of the data. Assuming there is no bias in plot selection or maintenance of plot integrity, the most valuable and powerful trend information comes from the same plots being revisited from one survey to the next and measured in the same way. This is also the only method that yields reliable components of change estimation for growth, removals, and mortality.

DATA RELIABILITY

Sampling Error

A measure of reliability of inventory statistics is provided by sampling errors. Sampling error is associated with the natural and expected deviation of the sample from the true population mean. This deviation is susceptible to a mathematical evaluation of the probability of error. Sampling errors for State totals are based on one standard deviation, meaning that the chances are two out of three that the true population value is within the limits indicated by a confidence interval.

FIA inventories supported by the full complement of sample plots are designed to achieve reliable statistics at the survey unit and State levels. However, users should note that sampling error increases as the area considered decreases in size. Sampling errors and associated confidence intervals are often unacceptably high for small components of the total resource.

Sampling errors (in percent) and associated confidence intervals around the sample estimates for timberland area, inventory volumes, and components of change are presented in the following tabulation:

Item	Sample estimate and confidence interval	Sampling error
		percent
Timberland (*1,000 acres*)	15,392.7 ± 146.2	0.95
All-live (*million cubic feet*)		
Inventory	20,818.8 ± 424.7	2.04
Net annual growth	869.5 ± 23.9	2.75
Annual removals	570.5 ± 32.7	5.74
Annual mortality	263.6 ± 13.7	5.21

Statistical confidence may be computed for any subdivision of the State totals using the following formula. Sampling errors obtained from this method are only approximations of reliability because this process assumes constant variance across all subdivisions of totals. This method of sampling error calculation differs from the process and formulas used in the Evalidator output.

$$SE_s = SE_t \frac{\sqrt{X_t}}{\sqrt{X_s}}$$

where

SE_s = sampling error for subdivision of survey unit or State total

SE_t = sampling error for survey unit or State total

X_s = sum of values for the variable of interest (area or volume) for subdivision of survey unit or State

X_t = total area or volume for survey unit or State

For example, the estimate of sampling error for softwood live-tree volume on public timberland is computed as:

$$SE_s = 2.04 \left[\frac{\sqrt{20{,}818.8}}{\sqrt{4{,}083.8}} \right] = 4.61$$

Thus, the sampling error is 4.61 percent, and the resulting confidence interval (two times out of three) for softwood live-tree inventory on public timberland is 4,083.8 ± 188.3 million cubic feet.

Table C.1—Species list[a] by common and scientific name, Florida, 2013

Common name	Scientific name[b]
Softwoods	
Australian pine	*Casuarina* L.
Atlantic white-cedar	*Chamaecyparis thyoides* (L.) B.S.P.
Southern redcedar	*Juniperus silicicola* (Small) Bailey
Eastern redcedar	*J. virginiana* L.
Caribbean pine	*Pinus caribaea* Morelet
Sand pine	*P. clausa* (Chapm. ex Engelm.) Vasey ex Sarg.
Shortleaf pine	*P. echinata* Mill.
Slash pine	*P. elliottii* Engelm.
Spruce pine	*P. glabra* Walt.
Longleaf pine	*P. palustris* Mill.
Pond pine	*P. serotina* Michx.
Loblolly pine	*P. taeda* L.
Baldcypress	*Taxodium distichum* (L.) Rich.
Pondcypress	*T. distichum* var. *nutans*
Florida yew	*Taxus floridana* Nutt. ex Chapman
Florida torreya	*Torreya taxifolia* Arn.
Hardwoods	
Florida maple	*Acer barbatum* Michx.
Boxelder	*A. negundo* L.
Red maple	*A. rubrum* L.
Silver maple	*A. saccharinum* L.
Ailanthus	*Ailanthus altissima* (Mill.) Swingle
Tung-oil tree	*Aleurites fordii* Hemsl.
Serviceberry	*Amelanchier* spp. Med.
Torchwood	*Amyris elemifera* L.
Pond apple	*Annona glabra* L.
Black mangrove	*Avicennia germinans* (L.) L.
River birch	*Betula nigra* L.
Gumbo limbo	*Bursera simaruba* (L.) Sarg.
American hornbeam	*Carpinus caroliniana* Walt.
Hickory	*Carya* spp. Nutt.
Water hickory	*C. aquatica* (Michx. f.) Nutt.
Bitternut hickory	*C. cordiformis* (Wangenh.) K. Koch
Pignut hickory	*C. glabra* (Mill.) Sweet
Pecan	*C. illinoensis* (Wangenh.) K. Koch
Shellbark hickory	*C. laciniosa* (Michx. f.) Loud.
Nutmeg hickory	*C. myristiciformis* (Michx. f.) Nutt.
Shagbark hickory	*C. ovata* (Mill.) K. Koch
Mockernut hickory	*C. tomentosa* (Poir.) Nutt.
Allegheny chinkapin	*Castanea pumila* Mill.
Florida chinkapin	*Castanea alnifolia* Nutt.
Catalpa	*Catalpa* spp. Scop.
Southern catalpa	*Catalpa bignonioides* Walt.
Sugarberry	*Celtis laevigata* Willd.
Eastern redbud	*Cercis canadensis* L.
Hardwoods (continued)	
Camphor tree	*Cinnamomum camphora* (L.) J. Presl
Fiddlewood	*Citharexylum fruticosum* L.
Citrus spp.	*Citrus* L.
Pigeon plum	*Coccoloba diversifolia* Jacq.
Soldierwood	*Colubrina elliptica* (Sw.) Briz. & Stern
Button-mangrove	*Conocarpus erectus* L.
Largeleaf geigertree	*Cordia sebestena* L.
Flowering dogwood	*Cornus florida* L.
Hawthorn	*Crataegus spp.* L.
Carrotwood	*Cupaniopsis anacardioides* (A. Rich.) Radlk.
Common persimmon	*Diospyros virginiana* L.
Red stopper	*Eugenia rhombea* Krug & Urban
Inkwood (butterbough)	*Exothea paniculata* (Juss.) Radlk.
American beech	*Fagus grandifolia* Ehrh.
Strangler fig	*Ficus aurea* Nutt.
Shortleaf fig (wild banyantree)	*F. citrifolia* P. Mill.
White ash	*Fraxinus americana* L.
Carolina ash	*F. caroliniana* P. Mill.
Green ash	*F. pennsylvanica* Marsh.
Pumpkin ash	*F. profunda* (Bush) Bush
Waterlocust	*Gleditsia aquatica* Marsh.
Honeylocust	*G. triacanthos* L.
Loblolly bay	*Gordonia lasianthus* (L.) Ellis
Longleaf blolly (beeftree)	*Guapira discolor* (Spreng.) Little
Manchineel	*Hippomane mancinella* L.
American holly	*Ilex opaca* Ait.
Black walnut	*Juglans nigra* L.
White mangrove	*Laguncularia racemosa* (L.) Gaertn. f.
Sweetgum	*Liquidambar styraciflua* L.
Yellow-poplar	*Liriodendron tulipifera* L.
False tamarind	*Lysiloma latisiliquum* (L.) Benth.
Cucumbertree	*Magnolia acuminata* L.
Southern magnolia	*M. grandiflora* L.
Bigleaf magnolia	*M. macrophylla* Michx.
Sweetbay	*M. virginiana* L.
Crabapple	*Malus angustifolia* (Ait.) Michx.
Mango	*Mangifera indica* L.
False mastic	*Mastichodendron foetidissimum* (Jacq.) H.J. Lam
Melaleuca	*Melaleuca quinquenervia* (Cav.) Blake
Chinaberry	*Melia azedarach* L.
Florida poisonwood	*Metopium toxiferum* (L.) Krug & Urban

continued

Table C.1—Species list[a] by common and scientific name, Florida, 2013 (continued)

Common name	Scientific name[b]	Common name	Scientific name[b]
Hardwoods (continued)		Hardwoods (continued)	
White mulberry	*Morus alba* L.	Red mangrove	*Rhizophora mangle* L.
Red mulberry	*M. rubra* L.	Willow	*Salix* spp. L.
Water tupelo	*Nyssa aquatica* L.	Sassafras	*Sassafras albidum* (Nutt.) Nees
Blackgum	*N. sylvatica* Marsh.	Schefflera (octopus tree)	*Schefflera actinophylla* (Endl.) H.A.T. Harms
Swamp tupelo	*N. sylvatica* var. *biflora* (Walt.) Sarg.	False mastic	*Sideroxylon foetidissimum* Jacq.
Eastern hophornbeam	*Ostrya virginiana* (Mill.) K. Koch	White bully (willow bustic)	*S. salicifolium* (L.) Lam.
Sourwood	*Oxydendrum arboreum* (L.) DC.	Paradise tree	*Simarouba glauca* DC.
Redbay	*Persea borbonia* (L.) Spreng.	West Indian mahogany	*Swietenia mahagoni* (L.) Jacq.
Fishpoison tree	*Piscidia piscipula* (L.) Sarg.	Java plum	*Syzygium cumini* (L.) Skeels
Planertree	*Planera aquatica* J.F. Gmel.	Tamarind	*Tamarindus indica* L.
American sycamore	*Platanus occidentalis* L.	Carolina basswood	*Tilia americana* var. *caroliniana* (P. Mill.) Castigl.
Cottonwood	*Populus* spp. L.	White basswood	*T. heterophylla* Vent.
American plum	*Prunus americana* Marsh.	Winged elm	*Ulmus alata* Michx.
Carolina laurelcherry	*P. caroliniana* (P. Mill.) Ait.	American elm	*U. americana* L.
Black cherry	*P. serotina* Ehrh.	Cedar elm	*U. crassifolia* Nutt.
White oak	*Quercus alba* L.	Chinese elm	*U. parvifolia* Jacq.
Scarlet oak	*Q. coccinea* Muenchh.	English elm	*U. procera* Salisb.
Durand oak	*Q. durandii* Buckl.	Slippery elm	*U. rubra* Muhl.
Southern red oak	*Q. falcata* Michx.	Palms	
Cherrybark oak	*Q. falcata* var. *pagodifolia* Ell.	Paurotis palm	*Acoelorraphe wrightii* (Griseb. & H. Wendl.) H. Wendl. ex Becc.
Bluejack oak	*Q. incana* Bartr.	Florida silver palm	*Coccothrinax argentata* (Jacq.) Bailey
Turkey oak	*Q. laevis* Walt.	Coconut palm	*Cocos nucifera* L.
Laurel oak	*Q. laurifolia* Michx.	Florida royal palm	*Roystonea elata* (Bartr.) F. Harper
Overcup oak	*Q. lyrata* Walt.	Cabbage palm	*Sabal palmetto* (Walt.) Lodd. ex J.A. & J.H. Schultes
Swamp chestnut oak	*Q. michauxii* Nutt.	Key thatch palm	*Thrinax morrisii* H. Wendl.
Chinkapin oak	*Q. muehlenbergii* Engelm.	Florida thatch palm	*T. radiata* Lodd. ex J.A. & J.H. Schultes
Water oak	*Q. nigra* L.		
Nuttall oak	*Q. nuttallii* Palmer		
Willow oak	*Q. phellos* L.		
Shumard oak	*Q. shumardii* Buckl.		
Post oak	*Q. stellata* Wangenh.		
Black oak	*Q. velutina* Lam.		
Live oak	*Q. virginiana* Mill.		

[a] Scientific and common names of tree species subject to survey in Florida.
[b] Little (1979).

SUMMARY DATA TABLES

Data for 2013 used in this report are included in appendix tables D.1–D.36. Continually updated or nonstatic "moving average" tabular summaries of the 2013 survey data and data from previous inventories used in this report are available at http://srsfia2.fs.fed.us/states/florida.shtml. Downloadable files and custom data tables for current and previous surveys are available through FIDO and Evalidator at the FIA DataMart Web site (http://www.fia.fs.fed.us/tools-data/default.asp).

Table D.1—Area by survey unit and land status, Florida, 2013

Unit	Total area	All forest	Unreserved			Reserved			Nonforest land	Census water
			Total	Timber-land	Un-productive	Total	Productive	Un-productive		
					thouand acres					
Northeast	10,784.2	6,581.4	6,409.2	6,397.1	12.0	172.3	158.5	13.7	3,117.9	1,084.9
Northwest	8,489.5	5,589.3	5,496.8	5,443.5	53.3	92.6	92.6	0.0	1,658.8	1,241.4
Central	11,815.9	2,924.0	2,678.4	2,592.5	85.9	245.6	233.5	12.0	7,042.6	1,849.2
South	10,995.1	2,177.0	1,117.5	959.5	157.9	1,059.6	748.5	311.1	5,475.2	3,342.9
All units	42,084.7	17,271.8	15,701.8	15,392.7	309.1	1,570.0	1,233.1	336.9	17,294.5	7,518.4

Numbers in rows and columns may not sum to totals due to rounding.

0.0 = no sample for the cell or a value of >0.0 but <0.05.

Table D.2—Area of forest land by ownership class and land status, Florida, 2013

Ownership class	All forest land	Unreserved			Reserved		
		Total	Timberland	Unproductive	Total	Productive	Unproductive
	thousand acres						
U.S. Forest Service							
National forest	1,182.9	1,130.4	1,118.8	11.5	52.5	52.5	0.0
Total	1,182.9	1,130.4	1,118.8	11.5	52.5	52.5	0.0
Other Federal							
National Park Service	737.1	0.0	0.0	0.0	737.1	533.5	203.6
Bureau of Land Management	6.3	6.3	6.3	0.0	0.0	0.0	0.0
U.S. Fish and Wildlife Service	170.3	0.0	0.0	0.0	170.3	155.6	14.7
Dept. of Defense/Dept. of Energy	549.4	549.4	520.5	28.9	0.0	0.0	0.0
Other Federal	38.0	38.0	38.0	0.0	0.0	0.0	0.0
Total	1,501.0	593.6	564.8	28.9	907.4	689.1	218.3
State and local government							
State	2,886.1	2,424.6	2,374.1	50.5	461.5	359.8	101.7
Local	555.2	406.6	362.2	44.4	148.6	131.8	16.8
Other nonfederal public	7.5	7.5	0.0	7.5	0.0	0.0	0.0
Total	3,448.8	2,838.7	2,736.3	102.4	610.1	491.5	118.5
Forest industry							
Corporate	767.8	767.8	761.9	5.8	0.0	0.0	0.0
Individual	5.7	5.7	5.7	0.0	0.0	0.0	0.0
Total	773.5	773.5	767.7	5.8	0.0	0.0	0.0
Nonindustrial private							
Corporate	6,237.8	6,237.8	6,123.1	114.6	0.0	0.0	0.0
Conservation/natural resources organization	42.1	42.1	42.1	0.0	0.0	0.0	0.0
Unincorporated local partnership/ association/club	22.9	22.9	22.9	0.0	0.0	0.0	0.0
Native American	48.7	48.7	26.7	22.0	0.0	0.0	0.0
Individual	4,014.1	4,014.1	3,990.4	23.8	0.0	0.0	0.0
Total	10,365.6	10,365.6	10,205.2	160.4	0.0	0.0	0.0
All classes	17,271.8	15,701.8	15,392.7	309.1	1,570.0	1,233.1	336.9

Numbers in rows and columns may not sum to totals due to rounding.

0.0 = no sample for the cell or a value of >0.0 but <0.05.

Table D.3—Area of timberland by forest-type group and site productivity class, Florida, 2013

Forest-type group	All classes	Site productivity class (*cubic feet/acre/year*) 0–19	20–49	50–84	85–119	120–164	165–224	225+
				thousand acres				
Softwood types								
Longleaf-slash pine	5,319.9	0.0	927.4	2,966.2	1,066.1	357.2	1.5	1.6
Loblolly-shortleaf pine	1,650.8	0.0	309.8	825.4	253.0	148.3	114.3	0.0
Other eastern softwoods	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Total softwoods	6,973.7	0.0	1,237.2	3,794.6	1,319.1	505.5	115.7	1.6
Hardwood types								
Oak-pine	1,532.5	0.0	422.6	838.6	192.2	59.3	19.8	0.0
Oak-hickory	2,693.1	0.0	807.7	1,534.0	255.2	79.9	16.2	0.0
Oak-gum-cypress	3,001.4	0.0	1,003.4	1,764.8	193.0	20.1	8.2	11.8
Elm-ash-cottonwood	92.3	0.0	41.0	35.3	14.6	1.5	0.0	0.0
Other hardwoods	25.9	0.0	12.0	13.9	0.0	0.0	0.0	0.0
Tropical hardwoods	382.1	0.0	199.9	157.6	18.9	5.7	0.0	0.0
Exotic hardwoods	70.9	0.0	46.0	24.9	0.0	0.0	0.0	0.0
Total hardwoods	7,798.3	0.0	2,532.5	4,369.3	673.9	166.5	44.2	11.8
Nonstocked	620.7	0.0	271.8	282.3	38.5	28.1	0.0	0.0
All groups	15,392.7	0.0	4,041.5	8,446.2	2,031.5	700.1	159.9	13.5

Numbers in rows and columns may not sum to totals due to rounding.

0.0 = no sample for the cell or a value of >0.0 but <0.05.

Table D.4—Area of timberland by forest-type group and ownership group, Florida, 2013

Forest-type group	All ownerships	U.S. Forest Service	Other Federal	State and local government	Forest industry	Nonindustrial private
			thousand acres			
Softwood types						
Longleaf-slash pine	5,319.9	535.8	222.7	889.2	367.6	3,304.6
Loblolly-shortleaf pine	1,650.8	197.4	71.9	160.2	139.1	1,082.2
Other eastern softwoods	3.0	0.0	0.0	0.0	0.0	3.0
Total softwoods	6,973.7	733.2	294.6	1,049.4	506.6	4,389.8
Hardwood types						
Oak-pine	1,532.5	115.0	70.5	268.4	55.0	1,023.6
Oak-hickory	2,693.1	75.6	144.8	375.4	33.7	2,063.5
Oak-gum-cypress	3,001.4	163.9	41.8	750.5	121.6	1,923.6
Elm-ash-cottonwood	92.3	0.0	0.0	22.0	10.1	60.3
Other hardwoods	25.9	0.0	0.0	10.8	0.0	15.1
Tropical hardwoods	382.1	0.0	0.0	143.8	1.4	236.9
Exotic hardwoods	70.9	0.0	0.0	24.8	0.0	46.2
Total hardwoods	7,798.3	354.5	257.1	1,595.6	221.9	5,369.2
Nonstocked	620.7	31.1	13.0	91.3	39.1	446.2
All groups	15,392.7	1,118.8	564.8	2,736.3	767.7	10,205.2

Numbers in rows and columns may not sum to totals due to rounding.

0.0 = no sample for the cell or a value of >0.0 but <0.05.

Table D.5—Area of timberland by forest-type group and stand-age class, Florida, 2013

Forest-type group	All classes	Stand-age class (*years*) 1–10	11–20	21–30	31–40	41–50	51–60	61–70	71–80	81–90	91–100	101+	Non-stocked
						thousand acres							
Softwood types													
Longleaf-slash pine	5,319.9	773.6	1,328.4	1,102.7	675.6	344.3	350.3	288.6	259.9	110.8	47.4	29.5	8.7
Loblolly-shortleaf pine	1,650.8	325.2	338.9	465.3	244.6	116.9	63.7	18.7	49.7	0.0	17.0	0.0	10.8
Other eastern softwoods	3.0	1.5	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0
Total softwoods	6,973.7	1,100.4	1,667.3	1,568.0	920.2	461.1	414.0	308.7	309.6	110.8	64.3	29.5	19.6
Hardwood types													
Oak-pine	1,532.5	170.6	195.1	239.4	196.7	198.0	165.8	131.5	112.0	67.5	33.7	16.0	6.3
Oak-hickory	2,693.1	394.3	231.6	368.6	301.8	326.8	290.8	288.5	258.0	104.8	50.9	55.3	21.7
Oak-gum-cypress	3,001.4	176.0	243.9	153.1	256.1	259.0	371.1	342.7	375.5	351.3	230.5	227.3	15.0
Elm-ash-cottonwood	92.3	19.2	6.0	10.5	8.7	10.0	6.0	2.6	20.6	8.6	0.2	0.0	0.0
Other hardwoods	25.9	1.6	2.9	0.0	0.0	4.7	1.6	10.5	4.5	0.0	0.0	0.0	0.0
Tropical hardwoods	382.1	11.7	27.9	29.6	74.2	87.3	35.2	31.2	40.2	20.9	22.5	0.0	1.4
Exotic hardwoods	70.9	35.5	10.0	5.7	8.5	5.6	5.7	0.0	0.0	0.0	0.0	0.0	0.0
Total hardwoods	7,798.3	808.9	717.4	806.9	845.9	891.4	876.2	807.0	810.8	552.9	337.9	298.6	44.5
Nonstocked	620.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	620.7
All groups	15,392.7	1,909.3	2,384.7	2,374.9	1,766.1	1,352.5	1,290.2	1,115.8	1,120.4	663.8	402.2	328.1	684.7

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.

Table D.6—Area of timberland by forest-type group and stand origin, Florida, 2013

Forest-type group	Total	Stand origin	
		Natural stands	Artificial regeneration
	thousand acres		
Softwood types			
Longleaf-slash pine	5,319.9	2,310.7	3,009.2
Loblolly-shortleaf pine	1,650.8	617.5	1,033.2
Other eastern softwoods	3.0	3.0	0.0
Total softwoods	6,973.7	2,931.3	4,042.4
Hardwood types			
Oak-pine	1,532.5	1,263.4	269.1
Oak-hickory	2,693.1	2,491.9	201.2
Oak-gum-cypress	3,001.4	2,967.3	34.1
Elm-ash-cottonwood	92.3	92.3	0.0
Other hardwoods	25.9	25.9	0.0
Tropical hardwoods	382.1	375.0	7.1
Exotic hardwoods	70.9	63.4	7.5
Total hardwoods	7,798.3	7,279.3	519.0
Nonstocked	620.7	445.8	174.9
All groups	15,392.7	10,656.4	4,736.3

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.

Table D.7—Area of timberland disturbed annually by forest-type group and disturbance class, Florida, 2013

Forest-type group[a]	Disturbance class							
	Insects	Disease	Weather	Fire	Domestic animals	Wild animals	Human	Other natural
	thousand acres							
Softwood types								
Longleaf-slash pine	7.7	18.2	11.4	89.5	5.8	10.3	24.1	3.4
Loblolly-shortleaf pine	2.0	3.2	7.2	10.0	0.0	2.2	4.1	1.1
Other eastern softwoods	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0
Total softwoods	9.8	21.5	18.6	99.5	5.8	12.5	28.5	4.6
Hardwood types								
Oak-pine	0.0	2.8	8.2	16.1	2.9	3.9	2.7	0.6
Oak-hickory	0.0	2.4	8.1	24.0	9.8	8.5	15.8	0.4
Oak-gum-cypress	0.9	4.0	22.7	16.8	6.8	7.4	7.9	8.9
Elm-ash-cottonwood	0.0	0.0	0.0	0.2	0.0	0.6	0.9	0.3
Other hardwoods	0.0	0.0	1.2	0.3	0.0	0.0	0.0	0.0
Tropical hardwoods	0.0	0.0	1.5	11.0	6.7	1.4	9.2	2.9
Exotic hardwoods	1.1	0.0	1.0	3.5	0.0	0.0	0.0	0.0
Total hardwoods	2.0	9.2	42.6	71.8	26.2	21.8	36.5	13.1
Nonstocked	0.0	0.0	1.0	8.8	0.1	1.2	2.2	1.0
All groups	11.8	30.6	62.2	180.2	32.2	35.5	67.2	18.6

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.
[a]Based on past conditions.

Table D.8—Area of timberland treated annually by forest-type group and treatment class, Florida, 2013

Forest-type group[a]	Total treated	Treatment class: Cutting: Final harvest	Partial harvest	Seed-tree/ shelter wood harvest	Commercial thinning	Timber stand improvement	Salvage cutting
	thousand acres						
Softwood types							
Longleaf-slash pine	223.3	85.9	21.9	1.4	104.6	5.4	4.1
Loblolly-shortleaf pine	82.4	37.0	7.1	1.8	34.0	1.8	0.7
Other eastern softwoods	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total softwoods	305.7	123.0	29.0	3.2	138.6	7.2	4.8
Hardwood types							
Oak-pine	24.5	10.5	8.6	0.0	3.3	1.3	0.8
Oak-hickory	25.2	9.8	8.6	1.7	1.9	2.1	1.1
Oak-gum-cypress	20.4	6.0	11.4	0.5	2.6	0.0	0.0
Elm-ash-cottonwood	0.8	0.5	0.3	0.0	0.0	0.0	0.0
Other hardwoods	1.0	0.0	1.0	0.0	0.0	0.0	0.0
Tropical hardwoods	1.0	0.0	0.0	0.0	1.0	0.0	0.0
Exotic hardwoods	2.5	2.5	0.0	0.0	0.0	0.0	0.0
Total hardwoods	75.5	29.2	30.0	2.2	8.7	3.4	1.8
Nonstocked	4.0	2.2	0.0	0.5	0.0	1.2	0.1
All groups	385.1	154.4	59.0	6.0	147.3	11.8	6.6

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.
[a]Based on past conditions.

Table D.9—Area of timberland treated annually by forest-type group and treatment class (regeneration), Florida, 2013

Forest-type group[a]	Treatment class			
	Site preparation	Artificial regeneration	Natural regeneration	Other silvicultural
	thousand acres			
Softwood types				
Longleaf-slash pine	43.6	61.0	0.6	40.5
Loblolly-shortleaf pine	17.3	26.9	1.0	5.5
Other eastern softwoods	0.0	0.0	0.0	0.0
Total softwoods	60.9	88.0	1.6	45.9
Hardwood types				
Oak-pine	9.0	10.9	2.7	4.5
Oak-hickory	10.2	9.1	11.4	5.9
Oak-gum-cypress	1.1	0.2	5.9	1.4
Elm-ash-cottonwood	0.0	0.0	0.0	0.0
Other hardwoods	0.0	0.0	0.0	0.0
Tropical hardwoods	0.3	0.0	0.0	5.8
Exotic hardwoods	1.2	1.2	0.0	1.2
Total hardwoods	21.8	21.5	20.1	18.7
Nonstocked	17.1	1.6	3.4	8.8
All groups	99.7	111.1	25.1	73.5

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.
[a]Based on current conditions.

Table D.10—Area of timberland by forest-type group and stand-size class, Florida, 2013

Forest-type group	All size classes	Stand-size class: Large diameter	Medium diameter	Small diameter	Non-stocked
		thousand acres			
Softwood types					
Longleaf-slash pine	5,319.9	2,051.9	2,109.4	1,158.6	0.0
Loblolly-shortleaf pine	1,650.8	544.5	670.1	436.2	0.0
Other eastern softwoods	3.0	1.5	0.0	1.5	0.0
Total softwoods	6,973.7	2,597.9	2,779.5	1,596.3	0.0
Hardwood types					
Oak-pine	1,532.5	672.5	315.9	544.1	0.0
Oak-hickory	2,693.1	1,143.2	541.3	1,008.6	0.0
Oak-gum-cypress	3,001.4	1,771.3	649.1	581.0	0.0
Elm-ash-cottonwood	92.3	29.6	15.8	46.9	0.0
Other hardwoods	25.9	15.5	4.2	6.1	0.0
Tropical hardwoods	382.1	246.8	79.7	55.6	0.0
Exotic hardwoods	70.9	2.9	15.3	52.8	0.0
Total hardwoods	7,798.3	3,881.9	1,621.4	2,295.0	0.0
Nonstocked	620.7	0.0	0.0	0.0	620.7
All groups	15,392.7	6,479.8	4,400.9	3,891.4	620.7

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.

Table D.11—Number of live trees on timberland by species group and diameter class, Florida, 2013

Species group	All classes	Diameter class														
		1.0–2.9	3.0–4.9	5.0–6.9	7.0–8.9	9.0–10.9	11.0–12.9	13.0–14.9	15.0–16.9	17.0–18.9	19.0–20.9	21.0–24.9	25.0–28.9	29.0–32.9	33.0–36.9	37.0+
	million trees															
Softwood																
Cypress	572.7	262.1	111.2	68.8	46.2	32.7	21.5	13.1	7.9	4.3	2.1	1.8	0.6	0.2	0.1	0.1
Loblolly and shortleaf pines	359.6	110.8	91.4	70.6	41.5	19.6	10.9	6.0	3.7	2.6	0.9	1.2	0.3	0.1	0.0	0.0
Longleaf and slash pines	1,691.6	415.8	461.7	407.3	214.7	94.1	48.4	26.6	12.9	6.7	2.5	0.9	0.1	0.0	0.0	0.0
Other eastern softwoods	68.2	48.5	10.2	3.5	1.9	1.3	1.2	0.6	0.4	0.3	0.2	0.1	0.0	0.0	0.0	0.0
Other yellow pines	288.1	109.7	69.7	57.3	32.5	10.5	4.4	2.1	1.1	0.4	0.2	0.2	0.0	0.0	0.0	0.0
Total softwoods	2,980.2	946.9	744.2	607.5	336.8	158.2	86.3	48.3	25.9	14.3	5.9	4.3	1.1	0.3	0.1	0.1
Hardwood																
Ash	168.7	85.3	45.2	17.4	8.3	4.5	2.9	2.8	0.9	0.5	0.3	0.5	0.1	0.0	0.0	0.0
Basswood	7.6	2.6	3.1	0.5	0.4	0.2	0.3	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0
Beech	0.8	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Black walnut	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cottonwood and aspen	0.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eastern noncommercial hardwoods	722.5	398.7	122.6	45.7	36.1	43.8	38.4	21.7	10.8	3.1	0.9	0.6	0.1	0.0	0.0	0.0
Hard maple	2.0	1.4	0.0	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hickory	35.7	21.0	6.2	1.8	2.1	1.6	0.9	0.6	0.6	0.3	0.2	0.4	0.1	0.0	0.0	0.0
Other eastern hard hardwoods	100.5	82.2	13.2	3.4	1.1	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other eastern soft hardwoods	561.1	370.8	114.1	38.0	17.8	9.5	5.0	2.4	1.5	0.7	0.6	0.4	0.1	0.0	0.0	0.0
Other red oaks	942.9	600.3	169.1	66.1	38.9	24.6	15.8	10.4	6.3	4.1	2.6	3.2	0.8	0.4	0.1	0.1
Other white oaks	344.7	190.2	65.3	31.1	16.7	11.7	7.6	6.4	4.2	3.1	2.2	3.0	1.3	1.0	0.4	0.5
Select red oaks	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Select white oaks	4.1	1.3	0.9	0.8	0.3	0.1	0.2	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Soft maple	304.7	188.6	61.5	24.4	12.8	7.5	4.2	2.6	1.3	0.8	0.4	0.5	0.1	0.0	0.0	0.0
Sweetgum	232.8	146.1	42.0	17.4	9.2	6.5	4.3	2.6	2.2	1.2	0.3	0.7	0.4	0.0	0.0	0.0
Tupelo and blackgum	579.2	286.9	135.3	62.0	36.6	23.0	13.7	8.6	6.3	3.2	1.5	1.5	0.6	0.1	0.1	0.0
Yellow-poplar	17.0	8.6	1.7	2.5	1.7	0.8	0.5	0.4	0.2	0.2	0.1	0.2	0.0	0.0	0.0	0.0
Total hardwoods	4,025.1	2,384.9	780.1	311.5	182.0	134.0	94.1	59.0	34.7	17.4	9.3	11.2	3.8	1.7	0.6	0.7
All species	7,005.3	3,331.8	1,524.3	919.0	518.9	292.2	180.4	107.3	60.6	31.7	15.2	15.5	4.9	1.9	0.7	0.8

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.

Table D.12—Number of growing-stock trees on timberland by species group and diameter class, Florida, 2013

Species group	All classes	Diameter class												
		5.0–6.9	7.0–8.9	9.0–10.9	11.0–12.9	13.0–14.9	15.0–16.9	17.0–18.9	19.0–20.9	21.0–24.9	25.0–28.9	29.0–32.9	33.0–36.9	37.0+
		million trees												
Softwood														
Cypress	167.5	54.3	38.7	27.6	19.1	11.9	7.4	4.0	2.0	1.7	0.6	0.1	0.0	0.0
Loblolly and shortleaf pines	147.6	65.3	39.8	18.3	10.3	5.7	3.5	2.4	0.8	1.1	0.3	0.1	0.0	0.0
Longleaf and slash pines	784.0	390.4	207.7	91.0	47.0	25.8	12.5	6.5	2.2	0.9	0.1	0.0	0.0	0.0
Other eastern softwoods	4.9	1.7	1.2	0.7	0.5	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Other yellow pines	86.9	46.2	26.5	7.8	3.4	1.6	0.8	0.3	0.2	0.1	0.0	0.0	0.0	0.0
Total softwoods	1,191.1	557.9	313.9	145.5	80.3	45.2	24.4	13.3	5.3	4.0	1.1	0.2	0.0	0.0
Hardwood														
Ash	14.6	5.6	2.6	2.0	1.5	1.4	0.4	0.3	0.3	0.4	0.0	0.0	0.0	0.0
Basswood	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Beech	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Cottonwood and aspen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hard maple	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hickory	5.3	0.8	1.3	0.9	0.4	0.5	0.5	0.2	0.1	0.4	0.1	0.0	0.0	0.0
Other eastern hard hardwoods	1.8	1.0	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other eastern soft hardwoods	32.9	14.7	7.7	4.5	2.6	1.1	1.0	0.5	0.4	0.2	0.1	0.0	0.0	0.0
Other red oaks	98.4	35.6	22.5	14.8	9.2	5.9	3.5	2.6	1.8	2.0	0.5	0.2	0.0	0.0
Other white oaks	11.4	4.1	2.1	1.6	0.8	0.9	0.4	0.5	0.4	0.3	0.2	0.1	0.0	0.1
Select red oaks	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Select white oaks	1.3	0.4	0.3	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Soft maple	22.4	9.4	5.2	3.5	1.8	0.9	0.6	0.3	0.3	0.2	0.1	0.0	0.0	0.0
Sweetgum	32.2	12.2	6.3	4.6	3.3	1.9	1.7	1.0	0.2	0.5	0.4	0.0	0.0	0.0
Tupelo and blackgum	98.4	35.1	23.5	16.1	8.5	6.2	4.3	2.4	1.0	0.9	0.4	0.0	0.1	0.0
Yellow-poplar	5.3	1.9	1.3	0.7	0.5	0.3	0.2	0.2	0.1	0.2	0.0	0.0	0.0	0.0
Total hardwoods	325.2	121.1	73.7	49.1	28.9	19.3	12.8	8.1	4.5	5.2	1.8	0.4	0.1	0.1
All species	1,516.3	679.0	387.6	194.6	109.2	64.5	37.3	21.4	9.9	9.2	2.8	0.6	0.1	0.1

Numbers in rows and columns may not sum to totals due to rounding.

0.0 = no sample for the cell or a value of >0.0 but <0.05.

Table D.13—Net[a] volume of live trees on timberland by forest-type group and stand-size class, Florida, 2013

Forest-type group	All size classes	Stand-size class: Large diameter	Medium diameter	Small diameter	Non-stocked
	million cubic feet				
Softwood types					
Longleaf-slash pine	6,265.7	3,687.3	2,425.5	152.9	0.0
Loblolly-shortleaf pine	2,090.9	1,130.9	902.2	57.8	0.0
Other eastern softwoods	3.6	3.3	0.0	0.3	0.0
Total softwoods	8,360.2	4,821.5	3,327.7	211.0	0.0
Hardwood types					
Oak-pine	1,923.2	1,431.5	335.0	156.7	0.0
Oak-hickory	2,879.4	2,242.2	449.9	187.3	0.0
Oak-gum-cypress	7,008.9	5,919.8	983.5	105.7	0.0
Elm-ash-cottonwood	124.1	102.3	14.1	7.7	0.0
Other hardwoods	53.9	49.6	3.5	0.8	0.0
Tropical hardwoods	418.7	310.1	98.8	9.8	0.0
Exotic hardwoods	21.4	7.0	9.6	4.8	0.0
Total hardwoods	12,429.7	10,062.5	1,894.5	472.7	0.0
Nonstocked	28.9	0.0	0.0	0.0	28.9
All groups	20,818.8	14,884.0	5,222.2	683.7	28.9

Numbers in rows and columns may not sum to totals due to rounding.

0.0 = no sample for the cell or a value of >0.0 but <0.05.

[a] Excludes rotten, missing, and form cull defects volume.

Table D.14—Net[a] volume of live trees on timberland by species group and ownership group, Florida, 2013

Species group	All ownerships	Ownership group				
		U.S. Forest Service	Other Federal	State and local government	Forest industry	Nonindustrial private
	million cubic feet					
Softwood						
Cypress	2,532.9	143.3	43.2	901.4	91.4	1,353.6
Loblolly and shortleaf pines	1,680.9	23.9	0.1	198.7	162.2	1,296.0
Longleaf and slash pines	6,695.5	862.4	266.4	1,140.4	352.7	4,073.6
Other eastern softwoods	109.3	4.7	20.7	38.8	0.0	45.0
Other yellow pines	840.1	205.9	110.4	123.6	5.7	394.5
Total softwoods	11,858.6	1,240.2	440.7	2,402.9	612.0	7,162.8
Hardwood						
Ash	395.2	21.8	0.5	189.7	18.3	164.8
Basswood	33.5	0.0	0.0	4.1	6.5	23.0
Beech	8.9	0.0	0.0	1.3	0.0	7.6
Black walnut	2.3	0.0	0.0	0.0	0.0	2.3
Cottonwood and aspen	0.8	0.0	0.0	0.8	0.0	0.0
Eastern noncommercial hardwoods	1,328.8	76.2	19.7	329.0	14.0	889.9
Hard maple	6.0	0.0	0.0	0.0	0.0	6.0
Hickory	166.3	5.2	0.9	57.7	1.0	101.6
Other eastern hard hardwoods	24.1	0.3	0.1	4.5	0.4	18.8
Other eastern soft hardwoods	578.4	54.6	3.0	100.3	32.8	387.7
Other red oaks	2,136.8	30.2	53.8	425.0	54.5	1,573.3
Other white oaks	1,219.3	39.0	54.7	210.7	22.7	892.2
Select red oaks	4.8	0.0	0.0	4.4	0.0	0.4
Select white oaks	32.1	0.1	0.0	1.1	0.0	30.9
Soft maple	498.6	8.9	2.4	145.7	18.4	323.2
Sweetgum	633.2	7.8	0.0	107.9	19.7	497.7
Tupelo and blackgum	1,785.8	127.7	27.5	555.2	45.8	1,029.7
Yellow-poplar	105.3	7.0	0.0	20.6	0.8	76.9
Total hardwoods	8,960.2	378.8	162.7	2,157.9	234.9	6,025.9
All species	20,818.8	1,619.0	603.4	4,560.8	846.9	13,188.7

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.
[a]Excludes rotten, missing, and form cull defects volume.

Table D.15—Net[a] volume of live trees on timberland by species group and diameter class, Florida, 2013

Species group	All classes	Diameter class 5.0–6.9	7.0–8.9	9.0–10.9	11.0–12.9	13.0–14.9	15.0–16.9	17.0–18.9	19.0–20.9	21.0–24.9	25.0–28.9	29.0–32.9	33.0–36.9	37.0+
							million cubic feet							
Softwood														
Cypress	2,532.9	210.2	313.9	385.4	391.0	347.1	282.2	207.1	129.7	149.7	71.8	26.6	9.6	8.4
Loblolly and shortleaf pines	1,680.9	178.0	270.2	240.5	225.2	186.2	160.6	152.7	70.0	132.5	44.0	20.8	0.0	0.0
Longleaf and slash pines	6,695.5	1,072.4	1,445.0	1,201.1	992.5	807.5	541.6	368.2	165.8	81.6	19.8	0.0	0.0	0.0
Other eastern softwoods	109.3	10.2	11.0	13.9	20.0	13.1	12.3	10.4	10.3	8.0	0.0	0.0	0.0	0.0
Other yellow pines	840.1	205.0	245.0	137.0	86.0	63.7	46.8	19.1	15.9	16.2	5.3	0.0	0.0	0.0
Total softwoods	11,858.6	1,675.9	2,285.2	1,978.0	1,714.8	1,417.5	1,043.6	757.4	391.8	388.1	141.0	47.4	9.6	8.4
Hardwood														
Ash	395.2	44.4	46.1	49.4	52.4	72.6	33.8	19.9	17.8	41.6	11.5	5.7	0.0	0.0
Basswood	33.5	1.7	2.2	1.9	5.2	3.6	4.4	6.4	0.0	8.2	0.0	0.0	0.0	0.0
Beech	8.9	0.1	0.9	0.0	0.0	1.3	1.6	0.0	0.0	5.0	0.0	0.0	0.0	0.0
Black walnut	2.3	0.0	0.0	0.0	0.0	0.7	0.7	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Cottonwood and aspen	0.8	0.1	0.1	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eastern noncommercial hardwoods	1,328.8	109.0	165.6	256.9	297.0	196.5	128.7	70.3	38.1	49.8	13.6	3.4	0.0	0.0
Hard maple	6.0	0.9	0.8	0.9	0.6	0.0	0.0	1.5	1.3	0.0	0.0	0.0	0.0	0.0
Hickory	166.3	4.0	11.9	16.4	15.8	18.2	25.0	15.0	10.5	34.9	14.5	0.0	0.0	0.0
Other eastern hard hardwoods	24.1	7.8	6.4	2.7	3.3	0.0	1.7	2.2	0.0	0.0	0.0	0.0	0.0	0.0
Other eastern soft hardwoods	578.4	92.3	95.4	91.6	77.7	51.5	50.4	30.6	37.1	31.4	15.9	4.4	0.0	0.0
Other red oaks	2,136.8	179.8	230.3	263.8	263.6	248.2	206.2	180.6	145.1	238.0	88.5	49.7	19.9	23.0
Other white oaks	1,219.3	69.0	71.3	87.7	85.0	107.7	95.6	92.0	88.6	159.3	99.4	108.3	54.5	100.9
Select red oaks	4.8	0.0	0.2	0.8	0.8	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0	0.0
Select white oaks	32.1	2.1	1.8	1.6	4.8	4.0	3.8	1.4	1.9	6.7	3.9	0.0	0.0	0.0
Soft maple	498.6	69.2	72.1	78.4	63.5	55.6	41.6	31.7	21.9	30.0	12.7	4.4	5.7	11.8
Sweetgum	633.2	39.8	56.8	77.7	84.7	74.9	90.3	66.3	19.3	67.4	56.1	0.0	0.0	0.0
Tupelo and blackgum	1,785.8	175.0	234.0	265.1	247.1	220.3	210.4	149.6	91.4	109.2	55.4	7.9	13.4	7.0
Yellow-poplar	105.3	7.1	10.2	9.2	9.1	11.5	9.2	10.9	7.7	21.0	3.4	5.9	0.0	0.0
Total hardwoods	8,960.2	802.4	1,006.1	1,204.2	1,211.1	1,066.5	903.4	678.1	481.7	805.7	375.0	189.7	93.5	142.8
All species	20,818.8	2,478.2	3,291.3	3,182.2	2,925.8	2,484.0	1,947.0	1,435.6	873.5	1,193.8	516.0	237.1	103.1	151.2

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.
[a] Excludes rotten, missing, and form cull defects volume.

Table D.16—Net[a] volume of live trees on timberland by forest-type group and stand origin, Florida, 2013

Forest-type group	Total	Stand origin	
		Natural stands	Artificial regeneration
	million cubic feet		
Softwood types			
Longleaf-slash pine	6,265.7	3,027.2	3,238.5
Loblolly-shortleaf pine	2,090.9	978.5	1,112.4
Other eastern softwoods	3.6	3.6	0.0
Total softwoods	8,360.2	4,009.3	4,350.9
Hardwood types			
Oak-pine	1,923.2	1,821.2	102.0
Oak-hickory	2,879.4	2,816.8	62.7
Oak-gum-cypress	7,008.9	7,004.3	4.7
Elm- ash-cottonwood	124.1	124.1	0.0
Other hardwoods	53.9	53.9	0.0
Tropical hardwoods	418.7	416.8	1.8
Exotic hardwoods	21.4	21.4	0.0
Total hardwoods	12,429.7	12,258.5	171.2
Nonstocked	28.9	22.6	6.2
All groups	20,818.8	16,290.5	4,528.3

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.
[a] Excludes rotten, missing, and form cull defects volume.

Table D.17—Net[a] volume of growing-stock trees on timberland by species group and diameter class, Florida, 2013

Species group	All classes	Diameter class 5.0–6.9	7.0–8.9	9.0–10.9	11.0–12.9	13.0–14.9	15.0–16.9	17.0–18.9	19.0–20.9	21.0–24.9	25.0–28.9	29.0–32.9	33.0–36.9	37.0+
	million cubic feet													
Softwood														
Cypress	2,261.7	168.0	267.0	332.5	354.4	320.6	269.4	192.7	122.7	144.9	67.6	21.9	0.0	0.0
Loblolly and shortleaf pines	1,585.4	166.6	259.5	225.8	215.6	177.6	152.2	142.5	63.5	122.5	44.0	15.8	0.0	0.0
Longleaf and slash pines	6,502.8	1,034.5	1,404.9	1,167.8	967.3	787.6	530.1	359.6	153.1	78.0	19.8	0.0	0.0	0.0
Other eastern softwoods	62.0	5.4	7.5	7.8	9.3	7.0	9.4	5.9	6.4	3.2	0.0	0.0	0.0	0.0
Other yellow pines	676.5	167.0	202.3	103.9	67.1	49.4	38.2	15.6	14.5	13.2	5.3	0.0	0.0	0.0
Total softwoods	11,088.5	1,541.5	2,141.2	1,837.8	1,613.7	1,342.2	999.3	716.2	360.3	361.7	136.8	37.7	0.0	0.0
Hardwood														
Ash	219.5	17.5	18.2	26.1	30.5	39.3	18.4	13.8	14.2	32.9	2.9	5.7	0.0	0.0
Basswood	12.2	0.5	0.8	1.2	2.9	0.0	1.4	1.6	0.0	3.8	0.0	0.0	0.0	0.0
Beech	8.9	0.1	0.9	0.0	0.0	1.3	1.6	0.0	0.0	5.0	0.0	0.0	0.0	0.0
Cottonwood and aspen	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hard maple	2.4	0.4	0.0	0.5	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
Hickory	135.8	1.7	8.0	10.4	8.0	15.5	20.8	13.9	7.9	34.9	14.5	0.0	0.0	0.0
Other eastern hard hardwoods	11.4	2.9	3.5	0.6	0.5	0.0	1.7	2.2	0.0	0.0	0.0	0.0	0.0	0.0
Other eastern soft hardwoods	318.1	39.3	46.5	47.1	45.2	27.8	35.0	20.2	26.8	21.6	8.5	0.0	0.0	0.0
Other red oaks	1,342.8	104.5	144.6	172.3	166.3	151.8	126.6	121.7	106.9	157.5	56.8	33.7	0.0	0.0
Other white oaks	191.9	10.1	10.3	14.3	12.6	20.7	10.9	16.8	15.8	18.9	17.4	14.3	8.0	21.8
Select red oaks	4.4	0.0	0.2	0.4	0.8	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0	0.0
Select white oaks	18.2	1.4	1.8	1.6	2.6	1.7	3.8	1.4	1.9	1.9	0.0	0.0	0.0	0.0
Soft maple	236.0	29.0	31.4	39.9	31.1	20.3	22.1	13.1	17.0	12.2	7.9	0.0	0.0	11.8
Sweetgum	498.6	29.7	40.3	56.7	66.1	57.1	71.8	58.0	12.7	54.9	51.3	0.0	0.0	0.0
Tupelo and blackgum	1,231.8	106.4	158.1	192.2	158.4	163.3	149.5	116.8	64.2	66.6	42.9	0.0	13.4	0.0
Yellow-poplar	89.3	5.9	8.4	8.0	8.3	9.0	7.7	8.9	4.8	19.0	3.4	5.9	0.0	0.0
Total hardwoods	4,321.7	349.3	473.2	571.5	533.9	507.8	471.3	389.9	272.1	432.3	205.8	59.7	21.3	33.6
All species	15,410.2	1,890.8	2,614.4	2,409.3	2,147.6	1,850.0	1,470.5	1,106.1	632.4	794.1	342.6	97.4	21.3	33.6

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.
[a] Excludes rotten, missing, and form cull defects volume.

Table D.18—Net[a] volume of growing-stock trees on timberland by species group and ownership group, Florida, 2013

Species group[b]	All ownerships	Ownership group				
		U.S. Forest Service	Other Federal	State and local government	Forest industry	Nonindustrial private
			million cubic feet			
Softwood						
Cypress	2,261.7	116.6	42.1	815.2	75.9	1,212.0
Loblolly and shortleaf pines	1,585.4	23.8	0.1	190.9	155.9	1,214.8
Longleaf and slash pines	6,502.8	843.7	263.7	1,100.4	332.4	3,962.6
Other eastern softwoods	62.0	2.4	17.3	23.8	0.0	18.5
Other yellow pines	676.5	140.7	95.6	101.9	0.2	338.2
Total softwoods	11,088.5	1,127.1	418.8	2,232.0	564.5	6,746.1
Hardwood						
Ash	219.5	11.7	0.3	103.5	9.8	94.3
Basswood	12.2	0.0	0.0	0.0	3.6	8.5
Beech	8.9	0.0	0.0	1.3	0.0	7.6
Cottonwood and aspen	0.5	0.0	0.0	0.5	0.0	0.0
Hard maple	2.4	0.0	0.0	0.0	0.0	2.4
Hickory	135.8	3.9	0.5	49.2	1.0	81.2
Other eastern hard hardwoods	11.4	0.1	0.0	1.8	0.0	9.4
Other eastern soft hardwoods	318.1	36.4	0.9	43.1	18.8	218.9
Other red oaks	1,342.8	24.6	40.7	254.4	35.2	987.8
Other white oaks	191.9	1.6	3.3	59.4	3.6	124.0
Select red oaks	4.4	0.0	0.0	4.0	0.0	0.4
Select white oaks	18.2	0.1	0.0	0.3	0.0	17.9
Soft maple	236.0	5.9	1.1	66.6	11.6	150.8
Sweetgum	498.6	6.9	0.0	88.1	17.6	385.9
Tupelo and blackgum	1,231.8	89.8	17.9	355.4	33.5	735.2
Yellow-poplar	89.3	7.0	0.0	14.1	0.0	68.1
Total hardwoods	4,321.7	188.0	64.6	1,041.9	134.7	2,892.5
All species	15,410.2	1,315.1	483.4	3,273.9	699.2	9,638.6

Numbers in rows and columns may not sum to totals due to rounding.

0.0 = no sample for the cell or a value of >0.0 but <0.05.

[a] Excludes rotten, missing, and form cull defects volume.

[b] Palm species have been included (species 906 to 915).

Table D.19—Net[a] volume of sawtimber trees on timberland by species group and diameter class, Florida, 2013

Species group	All classes	Diameter class 9.0–10.9	11.0–12.9	13.0–14.9	15.0–16.9	17.0–18.9	19.0–20.9	21.0–24.9	25.0–28.9	29.0–32.9	33.0–36.9	37.0+
						million board feet						
Softwood												
Cypress	8,137.5	1,030.7	1,375.9	1,414.6	1,297.5	993.1	663.1	821.9	404.3	136.4	0.0	0.0
Loblolly and shortleaf pines	6,076.5	810.6	973.9	921.4	861.6	862.6	404.0	818.6	308.9	114.9	0.0	0.0
Longleaf and slash pines	19,850.3	4,345.8	4,482.8	4,148.5	3,041.5	2,192.5	977.5	522.0	139.7	0.0	0.0	0.0
Other eastern softwoods	256.1	30.7	43.2	35.9	51.6	34.4	39.1	21.2	0.0	0.0	0.0	0.0
Other yellow pines	1,491.6	400.7	312.4	260.7	217.2	92.5	90.4	82.7	35.1	0.0	0.0	0.0
Total softwoods	35,812.0	6,618.4	7,188.2	6,781.1	5,469.4	4,175.1	2,174.1	2,266.3	888.0	251.2	0.0	0.0
Hardwood												
Ash	694.7	0.0	100.6	152.9	80.8	65.6	70.2	174.7	16.1	33.8	0.0	0.0
Basswood	43.1	0.0	9.5	0.0	5.9	7.5	0.0	20.2	0.0	0.0	0.0	0.0
Beech	31.6	0.0	0.0	4.9	6.3	0.0	0.0	20.4	0.0	0.0	0.0	0.0
Cottonwood and aspen	1.9	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hard maple	6.9	0.0	0.0	0.0	0.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0
Hickory	569.8	0.0	27.9	62.9	94.4	67.2	40.3	192.6	84.5	0.0	0.0	0.0
Other eastern hard hardwoods	19.2	0.0	1.9	0.0	7.4	10.0	0.0	0.0	0.0	0.0	0.0	0.0
Other eastern soft hardwoods	812.7	0.0	150.6	110.6	154.6	96.1	137.2	115.5	48.2	0.0	0.0	0.0
Other red oaks	4,523.3	0.0	635.3	662.7	604.3	616.9	570.3	887.2	336.3	210.3	0.0	0.0
Other white oaks	768.4	0.0	44.2	83.7	48.2	77.2	75.8	95.8	91.0	80.4	44.6	127.4
Select red oaks	19.3	0.0	2.6	0.0	0.0	0.0	0.0	16.6	0.0	0.0	0.0	0.0
Select white oaks	61.5	0.0	9.0	7.0	17.5	6.3	10.7	11.0	0.0	0.0	0.0	0.0
Soft maple	588.3	0.0	101.9	77.1	93.7	58.9	81.6	61.3	42.8	0.0	0.0	71.1
Sweetgum	1,857.3	0.0	238.7	245.0	346.5	305.5	71.4	328.8	321.3	0.0	0.0	0.0
Tupelo and blackgum	3,334.9	0.0	512.5	620.4	640.8	546.8	324.2	358.6	247.8	0.0	83.7	0.0
Yellow-poplar	359.5	0.0	29.1	39.2	38.4	47.5	27.4	116.6	21.7	39.6	0.0	0.0
Total hardwoods	13,692.3	0.0	1,865.8	2,066.4	2,138.8	1,912.3	1,409.2	2,399.3	1,209.6	364.1	128.3	198.5
All species	49,504.3	6,618.4	9,054.0	8,847.5	7,608.3	6,087.4	3,583.3	4,665.6	2,097.6	615.3	128.3	198.5

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.
[a] Excludes rotten, missing, and form cull defects volume.

Table D.20—Net[a] volume of sawtimber trees on timberland by species group and ownership group, Florida, 2013

Species group	All ownerships	Ownership group				
		U.S. Forest Service	Other Federal	State and local government	Forest industry	Nonindustrial private
	million board feet					
Softwood						
Cypress	8,137.5	443.2	192.6	3,115.1	246.3	4,140.4
Loblolly and shortleaf pines	6,076.5	151.8	0.0	857.8	403.6	4,663.4
Longleaf and slash pines	19,850.3	3,277.6	1,158.6	3,857.8	606.8	10,949.6
Other eastern softwoods	256.1	10.6	78.4	99.6	0.0	67.4
Other yellow pines	1,491.6	284.5	370.7	189.0	0.0	647.4
Total softwoods	35,812.0	4,167.6	1,800.2	8,119.3	1,256.6	20,468.2
Hardwood						
Ash	694.7	45.1	0.0	352.4	19.5	277.7
Basswood	43.1	0.0	0.0	0.0	12.5	30.6
Beech	31.6	0.0	0.0	4.9	0.0	26.7
Cottonwood and aspen	1.9	0.0	0.0	1.9	0.0	0.0
Hard maple	6.9	0.0	0.0	0.0	0.0	6.9
Hickory	569.8	13.1	0.0	234.5	3.6	318.5
Other eastern hard hardwoods	19.2	0.0	0.0	0.0	0.0	19.2
Other eastern soft hardwoods	812.7	109.2	0.0	95.7	69.6	538.3
Other red oaks	4,523.3	90.3	136.3	977.6	90.4	3,228.7
Other white oaks	768.4	1.3	0.0	265.5	17.7	483.8
Select red oaks	19.3	0.0	0.0	19.3	0.0	0.0
Select white oaks	61.5	0.0	0.0	0.0	0.0	61.5
Soft maple	588.3	22.5	1.5	160.8	13.0	390.5
Sweetgum	1,857.3	31.6	0.0	325.2	70.6	1,429.8
Tupelo and blackgum	3,334.9	245.2	66.8	1,227.0	75.5	1,720.5
Yellow-poplar	359.5	39.3	0.0	69.7	0.0	250.5
Total hardwoods	13,692.3	597.6	204.6	3,734.4	372.6	8,783.2
All species	49,504.3	4,765.2	2,004.8	11,853.7	1,629.2	29,251.4

Numbers in rows and columns may not sum to totals due to rounding.

0.0 = no sample for the cell or a value of >0.0 but <0.05.

[a] Excludes rotten, missing, and form cull defects volume.

Table D.21—Aboveground dry weight[a] of live trees on timberland by species group and diameter class, Florida, 2013

Species group	All classes	Diameter class 1.0–2.9	3.0–4.9	5.0–6.9	7.0–8.9	9.0–10.9	11.0–12.9	13.0–14.9	15.0–16.9	17.0–18.9	19.0–20.9	21.0–24.9	25.0–28.9	29.0–32.9	33.0–36.9	37.0+
	thousand tons															
Softwood																
Cypress	60,868.3	1,078.4	2,691.6	4,051.6	6,078.9	8,012.2	8,619.1	7,945.2	6,667.1	5,000.9	3,214.6	3,745.4	1,836.6	690.5	384.2	851.9
Loblolly and shortleaf pines	40,033.3	386.8	1,742.6	4,750.5	6,265.4	5,362.4	4,942.7	4,047.0	3,488.2	3,295.1	1,507.4	2,842.8	948.6	454.0	0.0	0.0
Longleaf and slash pines	175,390.3	2,356.6	14,268.2	28,204.8	34,325.7	27,788.7	22,839.6	18,568.5	12,433.6	8,445.6	3,841.9	1,872.1	445.1	0.0	0.0	0.0
Other eastern softwoods	2,950.4	162.7	201.7	258.7	255.1	316.8	461.6	311.1	294.5	252.1	241.7	194.5	0.0	0.0	0.0	0.0
Other yellow pines	20,420.6	633.7	2,307.2	4,537.1	4,988.1	2,765.6	1,772.6	1,294.6	952.1	391.3	333.4	334.9	109.9	0.0	0.0	0.0
Total softwoods	299,662.8	4,618.2	21,211.3	41,802.6	51,913.2	44,245.6	38,635.7	32,166.2	23,835.4	17,385.1	9,139.0	8,989.6	3,340.3	1,144.5	384.2	851.9
Hardwood																
Ash	9,265.5	381.6	1,075.1	1,158.0	1,035.5	1,011.1	1,000.5	1,371.8	624.2	351.1	310.6	678.7	181.0	86.4	0.0	0.0
Basswood	813.4	15.5	80.3	29.8	41.3	36.5	106.2	72.9	98.4	135.6	0.0	196.9	0.0	0.0	0.0	0.0
Beech	266.4	5.2	0.0	2.0	22.8	0.0	0.0	36.7	46.5	0.0	0.0	153.3	0.0	0.0	0.0	0.0
Black walnut	82.6	0.0	0.0	0.0	0.0	0.0	0.0	25.1	25.4	0.0	32.0	0.0	0.0	0.0	0.0	0.0
Cottonwood and aspen	16.0	0.5	0.0	2.1	2.9	0.0	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eastern noncommercial hardwoods	33,156.4	1,691.1	2,627.0	2,503.3	3,660.8	5,743.6	6,161.5	4,115.9	2,766.7	1,535.9	865.3	1,115.5	296.7	73.0	0.0	0.0
Hard maple	187.3	5.6	0.0	25.3	21.7	24.4	16.9	0.0	0.0	48.9	44.3	0.0	0.0	0.0	0.0	0.0
Hickory	4,770.7	79.9	160.8	114.2	308.2	421.8	409.3	479.9	678.4	410.8	288.9	993.8	424.8	0.0	0.0	0.0
Other eastern hard hardwoods	1,279.6	367.5	296.5	198.1	158.0	68.4	84.3	0.0	48.9	57.9	0.0	0.0	0.0	0.0	0.0	0.0
Other eastern soft hardwoods	16,390.4	1,460.7	2,490.6	2,064.6	2,002.6	1,875.6	1,600.4	1,110.9	1,070.5	666.8	828.1	722.3	384.1	113.2	0.0	0.0
Other red oaks	66,046.2	2,831.9	4,331.5	5,443.5	6,444.3	7,105.7	7,092.8	6,746.0	5,629.8	4,871.9	3,950.9	6,439.5	2,408.7	1,446.6	560.9	742.1
Other white oaks	43,035.9	802.9	1,625.7	2,057.1	2,145.9	2,686.8	2,637.1	3,469.2	3,088.9	3,014.1	2,994.8	5,370.5	3,450.6	3,850.0	2,005.1	3,837.2
Select red oaks	142.1	0.0	0.0	0.0	4.4	21.1	21.2	0.0	0.0	0.0	0.0	95.4	0.0	0.0	0.0	0.0
Select white oaks	944.7	3.0	18.7	52.8	46.2	43.1	129.9	112.5	109.0	37.6	56.3	208.2	127.5	0.0	0.0	0.0
Soft maple	14,980.8	922.6	1,772.7	1,773.6	1,795.3	1,895.6	1,567.8	1,361.3	1,003.4	781.4	528.6	758.6	313.5	100.8	143.4	262.4
Sweetgum	15,653.0	504.0	911.1	1,037.1	1,262.3	1,683.6	1,834.6	1,642.6	1,992.5	1,484.9	445.4	1,546.7	1,308.2	0.0	0.0	0.0
Tupelo and blackgum	43,757.2	1,486.0	3,460.2	3,624.6	4,688.2	5,340.7	5,131.4	4,779.9	4,713.8	3,473.0	2,170.9	2,687.3	1,434.0	227.6	331.7	207.9
Yellow-poplar	2,328.0	43.2	41.0	157.1	212.5	185.3	185.2	240.1	197.2	231.9	163.9	456.4	85.8	128.5	0.0	0.0
Total hardwoods	253,116.2	10,601.1	18,891.4	20,243.1	23,852.9	28,143.5	27,989.4	25,564.7	22,093.6	17,101.7	12,680.0	21,423.0	10,415.1	6,026.0	3,041.1	5,049.6
All species	552,779.0	15,219.3	40,102.7	62,045.7	75,766.1	72,389.1	66,625.1	57,731.0	45,929.0	34,486.8	21,819.0	30,412.6	13,755.4	7,170.5	3,425.3	5,901.4

Numbers in rows and columns may not sum to totals due to rounding.

0.0 = no sample for the cell or a value of >0.0 but <0.05.

[a] Calculations based on TREE_REGIONAL_BIOMASS.REGIONAL_DRYBIOT

Table D.22—Aboveground green weight[a] of live trees on timberland by species group and diameter class, Florida, 2013

Species group	All classes	Diameter class 1.0–2.9	3.0–4.9	5.0–6.9	7.0–8.9	9.0–10.9	11.0–12.9	13.0–14.9	15.0–16.9	17.0–18.9	19.0–20.9	21.0–24.9	25.0–28.9	29.0–32.9	33.0–36.9	37.0+
	thousand tons															
Softwood																
Cypress	121,736.5	2,156.8	5,383.2	8,103.2	12,157.9	16,024.3	17,238.2	15,890.4	13,334.2	10,001.9	6,429.3	7,490.7	3,673.2	1,381.1	768.4	1,703.8
Loblolly and shortleaf pines	80,066.6	773.5	3,485.1	9,500.9	12,530.8	10,724.8	9,885.5	8,093.9	6,976.3	6,590.2	3,014.8	5,685.6	1,897.3	907.9	0.0	0.0
Longleaf and slash pines	350,780.5	4,713.2	28,536.4	56,409.5	68,651.4	55,577.3	45,679.2	37,136.9	24,867.1	16,891.3	7,683.7	3,744.2	890.3	0.0	0.0	0.0
Other eastern softwoods	5,900.8	325.3	403.4	517.3	510.1	633.7	923.2	622.1	589.0	504.2	483.4	389.0	0.0	0.0	0.0	0.0
Other yellow pines	40,841.2	1,267.5	4,614.4	9,074.2	9,976.3	5,531.1	3,545.2	2,589.1	1,904.2	782.7	666.8	669.8	219.9	0.0	0.0	0.0
Total softwoods	599,325.6	9,236.3	42,422.5	83,605.2	103,826.4	88,491.2	77,271.3	64,332.5	47,670.9	34,770.2	18,278.0	17,979.3	6,680.6	2,289.0	768.4	1,703.8
Hardwood																
Ash	18,531.0	763.2	2,150.3	2,316.0	2,071.0	2,022.3	2,000.9	2,743.5	1,248.4	702.1	621.1	1,357.3	362.1	172.8	0.0	0.0
Basswood	1,626.9	31.0	160.7	59.6	82.7	73.0	212.4	145.8	196.8	271.1	0.0	393.8	0.0	0.0	0.0	0.0
Beech	532.7	10.3	0.0	4.0	45.6	0.0	0.0	73.3	92.9	0.0	0.0	306.5	0.0	0.0	0.0	0.0
Black walnut	165.2	0.0	0.0	0.0	0.0	0.0	0.0	50.3	50.8	0.0	64.1	0.0	0.0	0.0	0.0	0.0
Cottonwood and aspen	31.9	1.1	0.0	4.3	5.7	0.0	20.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eastern noncommercial hardwoods	66,312.8	3,382.1	5,254.1	5,006.6	7,321.6	11,487.2	12,323.0	8,231.9	5,533.5	3,071.8	1,730.6	2,230.9	593.4	146.0	0.0	0.0
Hard maple	374.5	11.3	0.0	50.6	43.5	48.8	33.8	0.0	0.0	97.8	88.7	0.0	0.0	0.0	0.0	0.0
Hickory	9,541.4	159.7	321.7	228.3	616.3	843.7	818.5	959.7	1,356.7	821.6	577.9	1,987.7	849.6	0.0	0.0	0.0
Other eastern hard hardwoods	2,559.1	734.9	593.1	396.1	316.1	136.7	168.6	0.0	97.7	115.9	0.0	0.0	0.0	0.0	0.0	0.0
Other eastern soft hardwoods	32,780.9	2,921.4	4,981.1	4,129.3	4,005.3	3,751.1	3,200.9	2,221.7	2,140.9	1,333.7	1,656.2	1,444.7	768.3	226.3	0.0	0.0
Other red oaks	132,092.5	5,663.7	8,663.0	10,887.0	12,888.7	14,211.5	14,185.6	13,492.0	11,259.6	9,743.8	7,901.8	12,878.9	4,817.4	2,893.3	1,121.9	1,484.2
Other white oaks	86,071.8	1,605.9	3,251.4	4,114.2	4,291.8	5,373.7	5,274.1	6,938.5	6,177.7	6,028.1	5,989.6	10,740.9	6,901.2	7,700.0	4,010.2	7,674.3
Select red oaks	284.1	0.0	0.0	0.0	8.7	42.3	42.4	0.0	0.0	0.0	0.0	190.7	0.0	0.0	0.0	0.0
Select white oaks	1,889.5	6.0	37.4	105.5	92.4	86.1	259.8	224.9	218.0	75.1	112.7	416.4	255.1	0.0	0.0	0.0
Soft maple	29,961.6	1,845.2	3,545.4	3,547.1	3,590.5	3,791.2	3,135.6	2,722.5	2,006.8	1,562.9	1,057.1	1,517.2	627.0	201.5	286.8	524.8
Sweetgum	31,306.1	1,008.1	1,822.1	2,074.2	2,524.5	3,367.3	3,669.1	3,285.2	3,985.1	2,969.7	890.8	3,093.4	2,616.5	0.0	0.0	0.0
Tupelo and blackgum	87,514.4	2,972.0	6,920.5	7,249.2	9,376.3	10,681.4	10,262.8	9,559.7	9,427.7	6,945.9	4,341.8	5,374.7	2,868.1	455.2	663.4	415.8
Yellow-poplar	4,656.0	86.3	82.0	314.1	424.9	370.7	370.4	480.3	394.4	463.7	327.8	912.7	171.7	256.9	0.0	0.0
Total hardwoods	506,232.4	21,202.2	37,782.9	40,486.2	47,705.8	56,287.0	55,978.8	51,129.5	44,187.1	34,203.4	25,360.0	42,845.9	20,830.3	12,052.0	6,082.2	10,099.1
All species	1,105,558.0	30,438.5	80,205.4	124,091.4	151,532.2	144,778.2	133,250.1	115,462.0	91,858.0	68,973.6	43,638.0	60,825.2	27,510.9	14,341.0	6,850.7	11,802.9

Numbers in rows and columns may not sum to totals due to rounding.

0.0 = no sample for the cell or a value of >0.0 but <0.05.

[a] Calculations based on TREE_REGIONAL_BIOMASS.REGIONAL_DRYBIOT

Table D.23—Merchantable dry weight[a] of live trees on timberland by species group and diameter class, Florida, 2013

Species group	All classes	Diameter class 5.0–6.9	7.0–8.9	9.0–10.9	11.0–12.9	13.0–14.9	15.0–16.9	17.0–18.9	19.0–20.9	21.0–24.9	25.0–28.9	29.0–32.9	33.0–36.9	37.0+
	thousand tons													
Softwood														
Cypress	45,445.8	2,750.6	4,706.6	6,421.8	7,036.3	6,557.8	5,509.6	4,153.8	2,659.1	3,129.4	1,530.9	579.4	212.6	197.8
Loblolly and shortleaf pines	31,975.0	3,386.8	5,123.4	4,567.2	4,281.9	3,545.0	3,060.5	2,910.6	1,335.7	2,526.3	841.0	396.5	0.0	0.0
Longleaf and slash pines	132,632.6	20,270.9	28,238.5	23,854.5	19,958.4	16,361.2	11,017.7	7,500.1	3,377.7	1,653.9	399.7	0.0	0.0	0.0
Other eastern softwoods	2,154.9	196.2	208.6	265.0	393.6	259.2	254.0	207.7	209.0	161.6	0.0	0.0	0.0	0.0
Other yellow pines	14,120.2	3,172.1	4,041.9	2,357.5	1,540.3	1,138.9	840.9	347.1	286.4	297.9	97.4	0.0	0.0	0.0
Total softwoods	226,328.5	29,776.6	42,318.9	37,466.0	33,210.5	27,862.1	20,682.7	15,119.3	7,867.9	7,769.2	2,868.9	975.9	212.6	197.8
Hardwood														
Ash	6,289.0	793.3	806.8	818.4	840.0	1,135.8	511.5	298.0	260.7	588.3	159.8	76.3	0.0	0.0
Basswood	590.9	20.9	32.8	30.5	90.4	62.6	81.1	117.4	0.0	155.3	0.0	0.0	0.0	0.0
Beech	207.7	1.3	17.3	0.0	0.0	29.6	37.7	0.0	0.0	121.9	0.0	0.0	0.0	0.0
Black walnut	59.5	0.0	0.0	0.0	0.0	17.3	17.5	0.0	24.8	0.0	0.0	0.0	0.0	0.0
Cottonwood and aspen	12.8	1.6	2.3	0.0	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eastern noncommercial hardwoods	23,376.7	1,765.2	2,923.6	4,649.9	5,054.3	3,418.3	2,271.8	1,285.3	722.1	961.1	259.7	65.3	0.0	0.0
Hard maple	132.3	16.6	16.5	19.2	13.5	0.0	0.0	35.8	30.7	0.0	0.0	0.0	0.0	0.0
Hickory	3,686.8	72.1	230.7	332.9	331.7	393.7	558.0	341.3	240.7	830.3	355.5	0.0	0.0	0.0
Other eastern hard hardwoods	449.8	127.7	118.1	51.2	66.0	0.0	39.6	47.1	0.0	0.0	0.0	0.0	0.0	0.0
Other eastern soft hardwoods	10,123.8	1,455.5	1,590.7	1,560.1	1,355.5	920.6	925.0	573.5	715.1	613.6	328.2	86.1	0.0	0.0
Other red oaks	44,945.1	3,469.3	4,754.1	5,458.3	5,520.2	5,287.0	4,424.6	3,874.2	3,118.5	5,094.7	1,923.8	1,066.9	415.0	538.5
Other white oaks	31,862.8	1,381.0	1,614.8	2,083.6	2,075.4	2,714.5	2,454.7	2,419.5	2,385.2	4,349.2	2,770.1	3,063.6	1,574.3	2,976.9
Select red oaks	111.1	0.0	3.3	16.8	17.0	0.0	0.0	0.0	0.0	74.1	0.0	0.0	0.0	0.0
Select white oaks	714.5	34.4	34.6	34.0	103.6	89.0	88.4	30.4	46.0	160.4	93.5	0.0	0.0	0.0
Soft maple	9,625.8	1,246.7	1,393.3	1,524.1	1,242.0	1,095.9	821.4	623.7	429.6	586.6	246.0	85.2	109.2	222.2
Sweetgum	12,083.8	706.6	1,015.2	1,410.9	1,571.9	1,419.3	1,743.0	1,303.6	383.3	1,369.7	1,160.3	0.0	0.0	0.0
Tupelo and blackgum	31,830.9	2,573.2	3,734.4	4,390.9	4,286.2	4,030.5	3,990.1	2,939.6	1,831.3	2,259.2	1,172.4	175.5	286.2	161.6
Yellow-poplar	1,915.4	117.1	174.0	158.6	160.1	206.9	170.1	202.5	145.7	400.3	65.2	114.9	0.0	0.0
Total hardwoods	178,018.7	13,782.4	18,462.5	22,539.2	22,736.6	20,821.0	18,134.4	14,091.9	10,333.6	17,564.9	8,534.6	4,733.9	2,384.7	3,899.1
All species	404,347.2	43,559.0	60,781.4	60,005.3	55,947.1	48,683.0	38,817.1	29,211.2	18,201.5	25,334.1	11,403.5	5,709.8	2,597.3	4,097.0

Numbers in rows and columns may not sum to totals due to rounding.

0.0 = no sample for the cell or a value of >0.0 but <0.05.

[a] Calculations based on TREE_REGIONAL_BIOMASS.REGIONAL_DRYBIOM

Table D.24—Total carbon[a] of live trees on forest land by ownership class and land status, Florida, 2013

Ownership class	All forest land	Unreserved			Reserved		
		Total	Timberland	Unproductive	Total	Productive	Unproductive
	thousand tons						
U.S. Forest Service							
National Forest	21,164.5	20,502.8	20,347.6	155.2	661.7	661.7	0.0
Total	21,164.5	20,502.8	20,347.6	155.2	661.7	661.7	0.0
Other Federal							
National Park Service	8,343.9	0.0	0.0	0.0	8,343.9	7,650.2	693.8
Bureau of Land Management	34.8	34.8	34.8	0.0	0.0	0.0	0.0
U.S. Fish and Wildlife Service	4,488.5	0.0	0.0	0.0	4,488.5	4,359.1	129.5
Dept. of Defense/Dept. of Energy	7,295.1	7,295.1	7,130.8	164.3	0.0	0.0	0.0
Other Federal	948.6	948.6	948.6	0.0	0.0	0.0	0.0
Total	21,110.9	8,278.4	8,114.2	164.3	12,832.5	12,009.2	823.2
State and local government							
State	58,717.9	52,809.4	52,687.2	122.2	5,908.5	5,589.7	318.7
Local	8,017.3	5,847.6	5,746.8	100.8	2,169.7	2,123.5	46.2
Other nonfederal public	3.3	3.3	0.0	3.3	0.0	0.0	0.0
Total	66,738.5	58,660.3	58,434.0	226.3	8,078.2	7,713.2	364.9
Forest industry							
Corporate	11,943.3	11,943.3	11,852.1	91.2	0.0	0.0	0.0
Individual	104.9	104.9	104.9	0.0	0.0	0.0	0.0
Total	12,048.2	12,048.2	11,957.0	91.2	0.0	0.0	0.0
Nonindustrial private							
Corporate	97,864.1	97,864.1	97,525.0	339.1	0.0	0.0	0.0
Conservation/natural resources organization	353.2	353.2	353.2	0.0	0.0	0.0	0.0
Unincorporated local partnership/ association/club	679.2	679.2	679.2	0.0	0.0	0.0	0.0
Native American	527.3	527.3	440.2	87.1	0.0	0.0	0.0
Individual	78,604.2	78,604.2	78,539.3	64.9	0.0	0.0	0.0
Total	178,027.9	178,027.9	177,536.8	491.1	0.0	0.0	0.0
All classes	299,089.9	277,517.6	276,389.5	1,128.1	21,572.3	20,384.1	1,188.2

Numbers in rows and columns may not sum to totals due to rounding.

0.0 = no sample for the cell or a value of >0.0 but <0.05.

[a] Estimates of carbon calculated by multiplying aboveground dry tree biomass by 0.5. Calculations based on TREE_REGIONAL_BIOMASS.REGIONAL_DRYBIOT

Table D.25—Average annual net growth of live trees on timberland by forest-type group and stand-size class, Florida, 2013 (2002–2007 to 2009–2013)

Forest-type group[a]	All size classes	Stand-size class: Large diameter	Stand-size class: Medium diameter	Stand-size class: Small diameter	Non-stocked
	million cubic feet				
Softwood types					
Longleaf-slash pine	402.8	75.9	197.4	129.5	0.0
Loblolly-shortleaf pine	147.0	35.7	78.2	33.0	0.0
Other eastern softwoods	0.0	0.0	0.0	0.1	0.0
Total softwoods	549.8	111.6	275.7	162.5	0.0
Hardwood types					
Oak-pine	65.1	27.4	16.7	21.1	0.0
Oak-hickory	91.3	43.9	24.9	22.5	0.0
Oak-gum-cypress	144.8	86.7	44.3	13.8	0.0
Elm-ash-cottonwood	4.4	2.5	0.3	1.6	0.0
Other hardwoods	1.4	1.0	0.2	0.2	0.0
Tropical hardwoods	7.7	6.3	1.1	0.3	0.0
Exotic hardwoods	1.3	0.0	0.4	0.9	0.0
Total hardwoods	316.0	167.8	87.8	60.4	0.0
Nonstocked	3.7	0.0	0.0	0.0	3.7
All groups	869.5	279.4	363.5	222.9	3.7

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.
[a]Based on past conditions.

Table D.26—Average annual net growth of live trees on timberland by species group and ownership group, Florida, 2013 (2002–2007 to 2009–2013)

Species group[a]	All ownerships	Ownership group				
		U.S. Forest Service	Other Federal	State and local government	Forest industry	Nonindustrial private
	million cubic feet					
Softwood						
Cypress	50.8	2.8	0.4	16.4	2.2	29.0
Loblolly and shortleaf pines	132.2	0.9	0.0	10.1	16.8	104.5
Longleaf and slash pines	424.7	16.4	6.4	54.5	35.1	312.2
Other eastern softwoods	-1.6	0.2	0.7	-2.0	0.0	-0.5
Other yellow pines	48.5	4.1	3.2	8.0	0.4	32.8
Total softwoods	654.5	24.4	10.7	87.1	54.4	477.9
Hardwood						
Ash	6.3	-0.1	0.0	2.2	1.0	3.1
Basswood	-0.3	0.0	0.0	0.2	-0.1	-0.5
Beech	0.4	0.0	0.0	0.1	0.0	0.3
Black walnut	0.4	0.0	0.0	0.0	0.0	0.4
Cottonwood and aspen	0.1	0.0	0.0	0.1	0.0	0.0
Eastern noncommercial hardwoods	23.6	1.3	0.5	3.2	-0.7	19.3
Hard maple	-0.2	0.0	0.0	0.0	0.0	-0.2
Hickory	3.9	0.0	0.0	1.4	0.1	2.5
Other eastern hard hardwoods	1.0	0.0	0.0	0.2	0.0	0.8
Other eastern soft hardwoods	8.7	-1.9	0.1	1.3	0.6	8.7
Other red oaks	71.5	0.5	2.4	8.3	2.2	58.0
Other white oaks	33.6	0.2	1.9	6.1	0.1	25.2
Select red oaks	0.2	0.0	0.0	0.2	0.0	0.0
Select white oaks	0.3	0.0	0.0	0.0	0.0	0.4
Soft maple	6.0	-0.1	0.1	2.3	0.7	3.0
Sweetgum	17.1	0.2	0.0	2.4	0.7	13.8
Tupelo and blackgum	39.6	3.1	0.5	11.8	1.4	22.8
Yellow-poplar	2.8	0.0	0.0	0.4	0.0	2.4
Total hardwoods	215.0	3.1	5.6	40.1	6.0	160.1
All species	869.5	27.5	16.4	127.2	60.4	638.0

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.
[a]Based on current conditions.

Table D.27—Average annual net growth of growing-stock trees on timberland by species group and ownership group, Florida, 2013 (2002–2007 to 2009–2013)

Species group[a]	All ownerships	Ownership group				
		U.S. Forest Service	Other Federal	State and local government	Forest industry	Nonindustrial private
	million cubic feet					
Softwood						
Cypress	46.2	2.1	0.4	15.1	2.0	26.6
Loblolly and shortleaf pines	125.3	0.9	0.0	9.8	16.2	98.4
Longleaf and slash pines	412.6	16.0	6.4	52.7	33.0	304.5
Other eastern softwoods	-2.8	0.1	0.6	-2.0	0.0	-1.5
Other yellow pines	39.2	1.6	2.5	6.7	0.0	28.3
Total softwoods	620.4	20.6	9.8	82.4	51.3	456.3
Hardwood						
Ash	2.9	0.0	0.0	1.1	0.5	1.3
Basswood	-0.1	0.0	0.0	0.0	-0.1	0.0
Beech	0.4	0.0	0.0	0.1	0.0	0.3
Black walnut	0.0	0.0	0.0	0.0	0.0	0.0
Cottonwood and aspen	0.0	0.0	0.0	0.0	0.0	0.0
Eastern noncommercial hardwoods	0.0	0.0	0.0	0.0	0.0	0.0
Hard maple	-0.3	0.0	0.0	0.0	0.0	-0.3
Hickory	3.5	0.1	0.0	1.0	0.1	2.3
Other eastern hard hardwoods	0.5	0.0	0.0	0.1	0.0	0.4
Other eastern soft hardwoods	4.0	-1.4	0.1	-0.4	0.3	5.4
Other red oaks	51.0	0.5	2.1	5.8	1.7	40.8
Other white oaks	6.0	0.0	0.4	1.3	0.0	4.3
Select red oaks	0.2	0.0	0.0	0.2	0.0	0.0
Select white oaks	0.0	0.0	0.0	0.0	0.0	0.0
Soft maple	2.6	-0.2	0.0	0.4	0.4	1.9
Sweetgum	13.6	0.1	0.0	2.3	0.5	10.7
Tupelo and blackgum	27.8	2.3	0.4	7.3	1.0	16.8
Yellow-poplar	3.6	0.0	0.0	0.6	0.0	3.0
Total hardwoods	116.0	1.5	3.0	19.9	4.5	86.9
All species	736.4	22.2	12.9	102.3	55.8	543.2

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.
[a]Based on current conditions.

Table D.28—Average annual net growth of sawtimber on timberland by species group and ownership group, Florida, 2013 (2002–2007 to 2009–2013)

Species group[a]	All ownerships	Ownership group				
		U.S. Forest Service	Other federal	State and local government	Forest industry	Nonindustrial private
	million board feet					
Softwood						
Cypress	193.0	9.1	1.7	68.0	7.8	106.5
Loblolly and shortleaf pines	454.0	5.4	0.0	42.3	41.7	364.6
Longleaf and slash pines	1,047.0	57.1	31.7	174.3	49.6	734.3
Other eastern softwoods	-17.4	0.4	2.5	-11.2	0.0	-9.1
Other yellow pines	59.1	5.9	12.1	6.7	0.0	34.5
Total softwoods	1,735.8	77.8	48.0	280.1	99.1	1,230.8
Hardwood						
Ash	13.1	0.2	0.0	7.8	0.9	4.1
Basswood	0.2	0.0	0.0	0.0	0.1	0.0
Beech	1.7	0.0	0.0	0.4	0.0	1.3
Black walnut	0.0	0.0	0.0	0.0	0.0	0.0
Cottonwood and aspen	0.2	0.0	0.0	0.2	0.0	0.0
Eastern noncommercial hardwoods	0.0	0.0	0.0	0.0	0.0	0.0
Hard maple	-1.5	0.0	0.0	0.0	0.0	-1.5
Hickory	16.2	0.6	0.0	5.8	0.2	9.7
Other eastern hard hardwoods	0.9	0.0	0.0	0.0	0.0	0.9
Other eastern soft hardwoods	9.4	-1.5	0.0	-4.5	1.6	13.8
Other red oaks	170.4	2.1	8.5	22.1	4.4	133.4
Other white oaks	23.1	0.0	0.0	5.2	0.3	17.7
Select red oaks	1.1	0.0	0.0	1.1	0.0	0.0
Select white oaks	-0.3	0.0	0.0	0.0	0.0	-0.3
Soft maple	1.1	-0.3	0.3	-2.5	-0.3	4.0
Sweetgum	60.9	0.4	0.0	10.3	1.8	48.4
Tupelo and blackgum	95.9	7.5	1.8	32.8	3.1	50.7
Yellow-poplar	16.3	0.2	0.0	3.0	0.0	13.0
Total hardwoods	408.8	9.2	10.6	81.7	12.2	295.1
All species	2,144.6	87.0	58.6	361.8	111.3	1,525.9

Numbers in rows and columns may not sum to totals due to rounding.

0.0 = no sample for the cell or a value of >0.0 but <0.05.

[a] Based on current conditions.

Table D.29—Average annual mortality of live trees on timberland by forest-type group and stand-size class, Florida, 2013 (2002–2007 to 2009–2013)

Forest-type group	All size classes	Stand-size class			Non-stocked
		Large diameter	Medium diameter	Small diameter	
	million cubic feet				
Softwood types					
Longleaf-slash pine	66.5	37.7	27.2	1.6	0.0
Loblolly-shortleaf pine	26.1	15.1	10.1	0.9	0.0
Other eastern softwoods	0.3	0.3	0.0	0.0	0.0
Total softwoods	93.0	53.1	37.3	2.6	0.0
Hardwood types					
Oak-pine	21.4	16.1	3.0	2.3	0.0
Oak-hickory	36.6	27.5	6.3	2.8	0.0
Oak-gum-cypress	103.7	88.3	13.6	1.8	0.0
Elm-ash-cottonwood	1.5	0.2	1.2	0.2	0.0
Other hardwoods	1.1	0.9	0.1	0.2	0.0
Tropical hardwoods	5.7	3.6	1.9	0.1	0.0
Exotic hardwoods	0.1	0.0	0.0	0.1	0.0
Total hardwoods	170.2	136.6	26.0	7.5	0.0
Nonstocked	0.4	0.0	0.0	0.0	0.4
All groups	263.6	189.7	63.3	10.1	0.4

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.
[a]Based on past conditions.

Table D.30—Average annual mortality of live trees on timberland by species group and ownership group, Florida, 2013 (2002–2007 to 2009–2013)

Species group[a]	All ownerships	Ownership group				
		U.S. Forest Service	Other Federal	State and local government	Forest industry	Nonindustrial private
	million board feet					
Softwood						
Cypress	20.1	0.3	0.0	8.2	0.2	11.6
Loblolly and shortleaf pines	11.9	0.0	0.0	1.7	1.2	9.1
Longleaf and slash pines	68.1	13.5	2.1	14.6	2.7	35.2
Other eastern softwoods	6.3	0.0	0.1	3.3	0.0	2.9
Other yellow pines	16.6	7.4	1.7	2.5	0.0	5.0
Total softwoods	123.0	21.2	3.8	30.3	4.0	63.7
Hardwood						
Ash	5.9	0.6	0.0	3.0	0.1	2.2
Basswood	0.7	0.0	0.0	0.0	0.1	0.5
Beech	0.1	0.0	0.0	0.0	0.0	0.1
Black walnut	0.0	0.0	0.0	0.0	0.0	0.0
Cottonwood and aspen	0.0	0.0	0.0	0.0	0.0	0.0
Eastern noncommercial hardwoods	20.0	1.4	0.6	5.0	1.1	12.0
Hard maple	0.5	0.0	0.0	0.0	0.0	0.5
Hickory	1.1	0.3	0.0	0.5	0.0	0.3
Other eastern hard hardwoods	0.3	0.0	0.0	0.1	0.0	0.2
Other eastern soft hardwoods	22.7	4.7	0.1	5.2	0.5	12.0
Other red oaks	36.6	1.0	0.4	8.6	0.9	25.8
Other white oaks	11.2	0.5	0.5	1.9	0.1	8.2
Select red oaks	0.0	0.0	0.0	0.0	0.0	0.0
Select white oaks	0.6	0.0	0.0	0.1	0.0	0.6
Soft maple	18.6	0.6	0.1	4.4	0.5	13.1
Sweetgum	6.6	0.0	0.0	1.7	0.1	4.7
Tupelo and blackgum	13.6	0.7	0.0	4.4	0.3	8.2
Yellow-poplar	2.1	0.0	0.0	0.4	0.0	1.7
Total hardwoods	140.5	9.9	1.6	35.3	3.7	90.0
All species	263.6	31.1	5.4	65.5	7.8	153.8

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.
[a]Based on current conditions.

Table D.31—Average annual mortality of growing-stock trees on timberland by species group and ownership group, Florida, 2013 (2002–2007 to 2009–2013)

Species group[a]	All ownerships	Ownership group				
		U.S. Forest Service	Other Federal	State and local government	Forest industry	Nonindustrial private
	million cubic feet					
Softwood						
Cypress	17.3	0.2	0.0	7.3	0.1	9.6
Loblolly and shortleaf pines	11.3	0.0	0.0	1.6	1.1	8.6
Longleaf and slash pines	65.2	13.4	1.9	13.8	2.7	33.4
Other eastern softwoods	5.6	0.0	0.1	2.8	0.0	2.7
Other yellow pines	14.1	6.1	1.5	2.4	0.0	4.2
Total softwoods	113.5	19.7	3.5	27.9	4.0	58.5
Hardwood						
Ash	3.6	0.3	0.0	1.7	0.0	1.6
Basswood	0.1	0.0	0.0	0.0	0.1	0.0
Beech	0.1	0.0	0.0	0.0	0.0	0.1
Black walnut	0.0	0.0	0.0	0.0	0.0	0.0
Cottonwood and aspen	0.0	0.0	0.0	0.0	0.0	0.0
Eastern noncommercial hardwoods	0.0	0.0	0.0	0.0	0.0	0.0
Hard maple	0.4	0.0	0.0	0.0	0.0	0.4
Hickory	0.7	0.0	0.0	0.5	0.0	0.2
Other eastern hard hardwoods	0.1	0.0	0.0	0.0	0.0	0.0
Other eastern soft hardwoods	12.7	3.4	0.0	3.1	0.2	6.1
Other red oaks	19.9	0.8	0.0	5.5	0.4	13.2
Other white oaks	1.2	0.0	0.0	0.7	0.0	0.5
Select red oaks	0.0	0.0	0.0	0.0	0.0	0.0
Select white oaks	0.6	0.0	0.0	0.0	0.0	0.6
Soft maple	9.6	0.5	0.0	2.7	0.3	6.1
Sweetgum	4.8	0.0	0.0	1.1	0.1	3.6
Tupelo and blackgum	9.4	0.5	0.0	3.0	0.2	5.7
Yellow-poplar	0.7	0.0	0.0	0.0	0.0	0.7
Total hardwoods	64.1	5.5	0.0	18.2	1.4	38.9
All species	177.6	25.2	3.5	46.1	5.4	97.3

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.
[a]Based on current conditions.

Table D.32—Average annual mortality of sawtimber on timberland by species group and ownership group, Florida, 2013 (2002–2007 to 2009–2013)

Species group[a]	All ownerships	Ownership group				
		U.S. Forest Service	Other Federal	State and local government	Forest industry	Nonindustrial private
	million board feet					
Softwood						
Cypress	66.6	0.3	0.0	31.3	0.4	34.6
Loblolly and shortleaf pines	44.1	0.0	0.0	7.3	4.1	32.8
Longleaf and slash pines	206.7	49.1	7.3	49.8	4.0	96.6
Other eastern softwoods	29.5	0.0	0.2	15.5	0.0	13.8
Other yellow pines	51.5	16.5	5.6	8.8	0.0	20.7
Total softwoods	398.5	65.9	13.1	112.7	8.5	198.4
Hardwood						
Ash	10.9	1.0	0.0	4.0	0.0	5.8
Basswood	0.4	0.0	0.0	0.0	0.4	0.0
Beech	0.0	0.0	0.0	0.0	0.0	0.0
Black walnut	0.0	0.0	0.0	0.0	0.0	0.0
Cottonwood and aspen	0.0	0.0	0.0	0.0	0.0	0.0
Eastern noncommercial hardwoods	0.0	0.0	0.0	0.0	0.0	0.0
Hard maple	1.7	0.0	0.0	0.0	0.0	1.7
Hickory	3.0	0.0	0.0	2.8	0.0	0.2
Other eastern hard hardwoods	0.0	0.0	0.0	0.0	0.0	0.0
Other eastern soft hardwoods	32.7	8.5	0.0	9.4	0.5	14.3
Other red oaks	77.8	3.7	0.0	26.4	0.8	46.9
Other white oaks	4.2	0.0	0.0	3.3	0.0	0.9
Select red oaks	0.0	0.0	0.0	0.0	0.0	0.0
Select white oaks	2.4	0.0	0.0	0.0	0.0	2.4
Soft maple	33.8	2.1	0.0	9.9	1.3	20.5
Sweetgum	11.6	0.0	0.0	3.0	0.4	8.2
Tupelo and blackgum	21.1	1.2	0.0	8.4	0.2	11.3
Yellow-poplar	1.1	0.0	0.0	0.0	0.0	1.1
Total hardwoods	200.8	16.6	0.0	67.4	3.5	113.4
All species	599.4	82.4	13.1	180.0	12.0	311.8

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.
[a]Based on current conditions.

Table D.33—Average annual removals of live trees on timberland by forest-type group and stand-size class, Florida, 2013 (2002–2007 to 2009–2013)

Forest-type group[a]	All size classes	Stand-size class: Large diameter	Stand-size class: Medium diameter	Stand-size class: Small diameter	Non-stocked
	million cubic feet				
Softwood types					
Longleaf-slash pine	305.0	113.2	185.3	6.5	0.0
Loblolly-shortleaf pine	130.4	53.5	74.1	2.8	0.0
Other eastern softwoods	0.0	0.0	0.0	0.0	0.0
Total softwoods	435.5	166.7	259.4	9.3	0.0
Hardwood types					
Oak-pine	34.1	18.1	10.3	5.7	0.0
Oak-hickory	35.2	21.7	8.8	4.8	0.0
Oak-gum-cypress	56.6	35.6	19.0	2.1	0.0
Elm-ash-cottonwood	0.6	0.0	0.0	0.6	0.0
Other hardwoods	0.0	0.0	0.0	0.0	0.0
Tropical hardwoods	5.7	5.4	0.2	0.1	0.0
Exotic hardwoods	2.3	0.0	1.7	0.6	0.0
Total hardwoods	134.5	80.8	39.9	13.8	0.0
Nonstocked	0.6	0.0	0.0	0.0	0.6
All groups	570.5	247.5	299.4	23.1	0.6

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.
[a]Based on past conditions.

Table D.34—Average annual removals of live trees on timberland by species group and ownership group, Florida, 2013 (2002–2007 to 2009–2013)

Species group[a]	All ownerships	Ownership group				
		U.S. Forest Service	Other Federal	State and local government	Forest industry	Nonindustrial private
	million cubic feet					
Softwood						
Cypress	12.5	0.0	0.0	0.8	1.4	10.3
Loblolly and shortleaf pines	91.8	0.0	0.0	0.9	14.3	76.5
Longleaf and slash pines	312.6	0.9	4.6	39.9	33.4	233.7
Other eastern softwoods	0.6	0.0	0.0	0.0	0.0	0.5
Other yellow pines	49.8	8.3	6.4	2.9	0.0	32.2
Total softwoods	467.2	9.2	11.0	44.5	49.1	353.3
Hardwood						
Ash	4.4	0.0	0.0	2.7	0.0	1.7
Basswood	0.0	0.0	0.0	0.0	0.0	0.0
Beech	0.0	0.0	0.0	0.0	0.0	0.0
Black walnut	0.0	0.0	0.0	0.0	0.0	0.0
Cottonwood and aspen	0.0	0.0	0.0	0.0	0.0	0.0
Eastern noncommercial hardwoods	19.4	0.0	0.6	9.4	0.3	9.1
Hard maple	0.0	0.0	0.0	0.0	0.0	0.0
Hickory	2.0	0.0	0.0	0.0	0.0	2.0
Other eastern hard hardwoods	0.3	0.0	0.0	0.1	0.0	0.3
Other eastern soft hardwoods	8.2	0.0	0.0	2.8	0.1	5.3
Other red oaks	25.6	0.0	0.3	6.2	0.5	18.7
Other white oaks	12.6	0.0	0.0	3.9	0.2	8.5
Select red oaks	0.0	0.0	0.0	0.0	0.0	0.0
Select white oaks	0.8	0.0	0.0	0.0	0.0	0.8
Soft maple	7.8	0.0	0.0	3.3	0.2	4.3
Sweetgum	6.1	0.0	0.0	1.2	0.2	4.7
Tupelo and blackgum	15.0	0.0	0.0	5.1	1.1	8.8
Yellow-poplar	1.0	0.0	0.0	0.0	0.0	1.0
Total hardwoods	103.4	0.1	0.9	34.6	2.6	65.2
All species	570.5	9.3	11.9	79.1	51.8	418.5

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.
[a]Based on current conditions.

Table D.35—Average annual removals of growing-stock trees on timberland by species group and ownership group, Florida, 2013 (2002–2007 to 2009–2013)

Species group[a]	All ownerships	Ownership group				
		U.S. Forest Service	Other Federal	State and local government	Forest industry	Nonindustrial private
	million cubic feet					
Softwood						
Cypress	11.1	0.0	0.0	0.5	0.7	10.0
Loblolly and shortleaf pines	88.7	0.0	0.0	0.9	14.2	73.6
Longleaf and slash pines	306.0	0.9	4.4	38.7	32.7	229.3
Other eastern softwoods	0.1	0.0	0.0	0.0	0.0	0.1
Other yellow pines	42.4	8.0	3.8	2.6	0.0	28.0
Total softwoods	448.4	8.9	8.3	42.6	47.6	341.0
Hardwood						
Ash	4.1	0.0	0.0	2.7	0.0	1.5
Basswood	0.0	0.0	0.0	0.0	0.0	0.0
Beech	0.0	0.0	0.0	0.0	0.0	0.0
Black walnut	0.0	0.0	0.0	0.0	0.0	0.0
Cottonwood and aspen	0.0	0.0	0.0	0.0	0.0	0.0
Eastern noncommercial hardwoods	0.0	0.0	0.0	0.0	0.0	0.0
Hard maple	0.0	0.0	0.0	0.0	0.0	0.0
Hickory	1.3	0.0	0.0	0.0	0.0	1.3
Other eastern hard hardwoods	0.1	0.0	0.0	0.0	0.0	0.0
Other eastern soft hardwoods	3.9	0.0	0.0	1.5	0.0	2.3
Other red oaks	16.0	0.0	0.3	3.3	0.4	12.1
Other white oaks	2.9	0.0	0.0	1.4	0.1	1.4
Select red oaks	0.0	0.0	0.0	0.0	0.0	0.0
Select white oaks	0.8	0.0	0.0	0.0	0.0	0.8
Soft maple	5.8	0.0	0.0	3.0	0.0	2.8
Sweetgum	5.2	0.0	0.0	1.1	0.2	4.0
Tupelo and blackgum	12.1	0.0	0.0	5.0	0.8	6.3
Yellow-poplar	0.8	0.0	0.0	0.0	0.0	0.8
Total hardwoods	53.2	0.0	0.3	18.0	1.6	33.4
All species	501.6	8.9	8.5	60.6	49.2	374.4

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.
[a] Based on current conditions.

Table D.36—Average annual removals of sawtimber on timberland by species group and ownership group, Florida, 2013 (2002–2007 to 2009–2013)

Species group[a]	All ownerships	Ownership group				
		U.S. Forest Service	Other Federal	State and local government	Forest industry	Nonindustrial private
	million cubic feet					
Softwood						
Cypress	29.1	0.0	0.0	0.0	1.5	27.6
Loblolly and shortleaf pines	235.8	0.0	0.0	2.4	37.0	196.5
Longleaf and slash pines	638.2	1.4	14.0	101.9	62.0	458.9
Other eastern softwoods	0.3	0.0	0.0	0.0	0.0	0.3
Other yellow pines	62.9	23.2	13.8	6.6	0.0	19.4
Total softwoods	966.4	24.7	27.8	110.8	100.5	702.6
Hardwood						
Ash	8.5	0.0	0.0	4.1	0.0	4.4
Basswood	0.0	0.0	0.0	0.0	0.0	0.0
Beech	0.0	0.0	0.0	0.0	0.0	0.0
Black walnut	0.0	0.0	0.0	0.0	0.0	0.0
Cottonwood and aspen	0.0	0.0	0.0	0.0	0.0	0.0
Eastern noncommercial hardwoods	0.0	0.0	0.0	0.0	0.0	0.0
Hard maple	0.0	0.0	0.0	0.0	0.0	0.0
Hickory	4.6	0.0	0.0	0.0	0.0	4.6
Other eastern hard hardwoods	0.0	0.0	0.0	0.0	0.0	0.0
Other eastern soft hardwoods	1.7	0.0	0.0	0.3	0.0	1.4
Other red oaks	39.6	0.0	0.4	8.9	0.2	30.2
Other white oaks	10.3	0.0	0.0	4.1	0.0	6.2
Select red oaks	0.0	0.0	0.0	0.0	0.0	0.0
Select white oaks	3.8	0.0	0.0	0.0	0.0	3.8
Soft maple	20.2	0.0	0.0	10.8	0.0	9.4
Sweetgum	15.4	0.0	0.0	5.1	0.2	10.0
Tupelo and blackgum	31.0	0.0	0.0	18.0	0.5	12.6
Yellow-poplar	1.0	0.0	0.0	0.0	0.0	1.0
Total hardwoods	136.2	0.0	0.4	51.3	0.9	83.6
All species	1,102.5	24.7	28.1	162.1	101.4	786.2

Numbers in rows and columns may not sum to totals due to rounding.
0.0 = no sample for the cell or a value of >0.0 but <0.05.
[a]Based on current conditions.

Brown, Mark J.; Nowak, Jarek; Vogt, James T. 2017. Florida's forests, 2013. Resour. Bull. SRS–213. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 94 p.

The principal findings from the five panels of the ninth forest survey of Florida are presented. In 2013, forests covered 17.3 million acres of the State, of which 15.4 million were classified as timberland. Longleaf-slash pine was the most common forest-type group and covered 5.3 million acres of the timberland. The second most common forest-type group was oak-gum-cypress, which covered 3.0 million acres of timberland. Nonindustrial private forest ownerships controlled 66 percent of the State's timberland. Softwood tree species accounted for 57 percent of the 20.8 billion cubic feet of all-live wood volume that occurred on the State's timberland. Total net growth of all-live trees on timberland averaged 870 million cubic feet and removals averaged 570 million cubic feet.

Keywords: FIA, forest health, forest ownership, timber growth, timber removals, timber volume, timberland.

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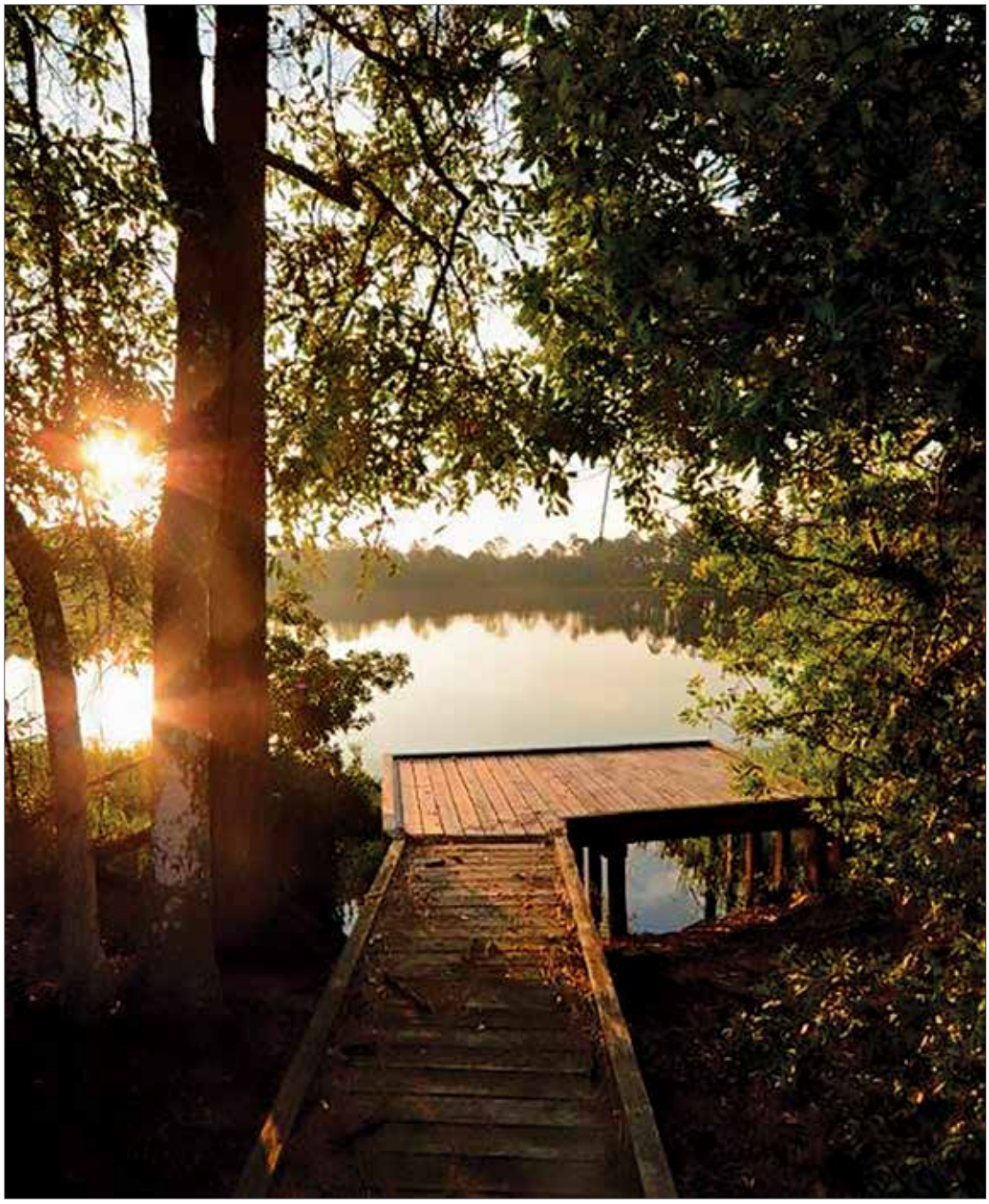

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