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Southern
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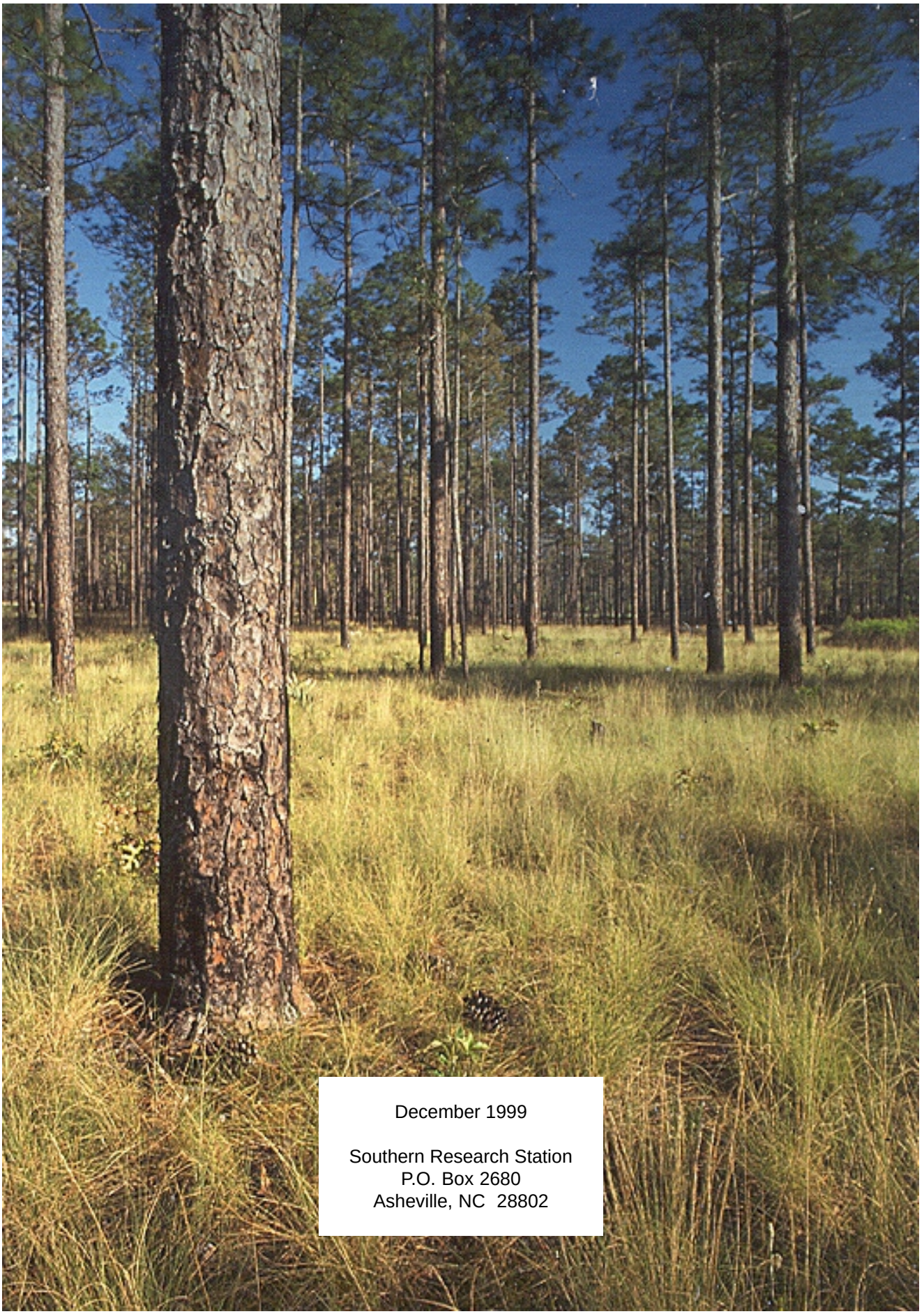
Resource Bulletin
SRS-48

Florida's Forests, 1995

Mark J. Brown



Photo—Bill Lea

December 1999

Southern Research Station
P.O. Box 2680
Asheville, NC 28802

Longleaf pine *(Pinus palustris* Mill.*)* savannah

Florida's Forests, 1995

Photo—USDA Forest Service

Alligator *(Alligator mississipiensis)*—often a wetland forest inhabitant

Mark J. Brown, Forester

Forest Inventory and Analysis
Asheville, North Carolina

Cover photo—Bill Lea
Bald cypress *(Taxodium distichum* (L.) Rich.*)* and cabbage palm *(Sabal palmetto* Walt.*)*

Foreword

This resource bulletin describes the principal findings of the seventh inventory of Florida's forest resources. Data on the extent, condition, and classification of forest land and associated timber volumes, growth, removals, and mortality are described and interpreted. Whereas data on nontimber commodities associated with forests were also collected, evaluations of these data are not included in this report.

Periodic surveys of our Nation's forest resources are mandated by the Forest and Rangeland Renewable Resources Research Act of 1978. These surveys are part of a continuing, nationwide undertaking by the regional experiment stations of the U.S. Department of Agriculture, Forest Service. Inventories of the 13 Southern States (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia) and the Commonwealth of Puerto Rico are conducted by the Southern Research Station, Forest Inventory and Analysis Research Work Unit (FIA) operating from its headquarters in Asheville, NC, and from an office in Starkville, MS. The primary objective of these periodic appraisals is to develop and maintain the resource information needed to formulate sound forest policies and programs. More information is available about Forest Service resource inventories (U.S. Department of Agriculture, Forest Service 1992).

Field work for the seventh survey of Florida began in June 1993 and was completed in May 1995. Six previous surveys, completed in 1936, 1949, 1959, 1970, 1980, and 1987, provide statistics for measuring changes and trends over a 59-year span. This analysis focuses mainly on changes and trends in recent years and their implications for the future.

The combined efforts of many people have gone into this evaluation of Florida's forest resources. Appreciation is expressed to all Research Work Unit and Station personnel who participated in the field and office work. The Southern Research Station gratefully acknowledges the cooperation and assistance provided by the Florida Department of Agriculture and Consumer Services, Division of Forestry, in collecting field data. Appreciation is also expressed for the excellent cooperation of other public agencies, forest industries, and private landowners in providing information and allowing access to the sample locations.

Tabular data included in FIA reports are designed to provide a comprehensive array of forest resource statistics, but additional data can be obtained for those who require more specialized information. The forest resource data for Southern States can be accessed directly via the Internet at www.srsfia.usfs.msstate.edu. Data in a format common to the three FIA units in the Eastern United States (Eastwide Data Base) are also available (Hansen and others 1992). These data may be obtained at the Internet site referenced above.

Information concerning any aspect of this survey may be obtained from:

Forest Inventory and Analysis
USDA Forest Service
Southern Research Station
P.O. Box 2680
Asheville, NC 28802
Phone: 828-257-4350

James H. Perdue
Project Leader

Photo—Florida Division of Forestry

Hiking—a popular forest recreation

Photo—USDA Forest Service

Forest recreation includes canoeing

Contents

Highlights from the Seventh Inventory of Florida

Area

- Forty-nine percent of Florida's 14.7 million acres of timberland was under nonindustrial private forest (NIPF) ownership, the lowest proportion of any Southern State.
- Florida had the highest percentage of State-owned timberland in the South, with more than 1.2 million acres.
- Timberland under forest industry control decreased from 5.4 million acres in 1987 to 4.6 million acres in 1995.
- Planted pine accounted for 4.6 million acres, or 32 percent of Florida's timberland, the highest proportion of any Southern State.
- Yellow pine forest types accounted for 7.4 million acres, or one-half of Florida's timberland.
- Total regeneration averaged 311 thousand acres annually, exceeding the average of 249 thousand acres of final harvest annually. Artificial regeneration accounted for three-fourths of total regeneration.

Volume

- Hardwood volume continued to climb, totaling 5.9 billion cubic feet in 1995. Two-thirds of the hardwood volume was in lowland stands.
- Yellow pine volume increased to 7.1 billion cubic feet. Slash pine, loblolly pine, and sand pine increased, but longleaf pine and pond pine decreased.
- Cypress volume decreased by 6 percent to 2.3 billion cubic feet.
- Net annual growth of hardwood and yellow pine increased to 161 and 492 million cubic feet, respectively. In contrast, net annual growth of cypress decreased to 40 million cubic feet.
- Yellow pine dominated annual removals despite a slight decrease to 432 million cubic feet. Annual removals of hardwood and cypress increased to 88 and 41 million cubic feet, respectively.

Photo—USDA Forest Service

Bradwell Bay Wilderness area on the Apalachicola National Forest

Products

- Lumber, paper, and wood products together ranked fourth in the State's manufacturing economy; stemming from the operation of 113 primary wood-using plants.
- Total output of timber products averaged 607 million cubic feet annually. Pulpwood was the leading product and accounted for 58 percent of total output, averaging 352 million cubic feet annually.
- Mulch production contributed to a 58-percent increase in output of other industrial products to 47 million cubic feet annually.
- Saw logs were the second leading product, accounting for 24 percent of total output, averaging 146 million cubic feet annually.

Projections

- Area of planted pine/oak-pine is projected to increase, from 4.9 million acres in 1995 to almost 6.0 million acres by 2025.
- Inventory of southern yellow pine is projected to increase, from nearly 7.0 billion cubic feet in 1995 to 9.8 billion cubic feet in 2025. Inventory of hardwood will increase from 8.4 billion cubic feet in 1995 to 8.8 billion cubic feet in 2025.
- Net annual growth of pine is projected to increase, from 489 million cubic feet in 1995 to 543 million cubic feet in 2025. Pine growth will exceed removals throughout the projection period.
- Average annual removals of pine are projected to increase, from 431 million cubic feet in 1995 to 492 million cubic feet in 2025.
- Net annual growth of hardwood is projected to steadily decrease over the next 30 years, from 204 million cubic feet in 1995 to 146 million cubic feet in 2025.
- Average annual removals of hardwood are projected to increase slightly, from 129 million cubic feet in 1995 to 142 million cubic feet in 2025.

Photo—USDA Forest Service

Bobcat *(Lynx rufus)*

Overview

Geography

Florida's boundaries encompass 34.6 million acres of land and 7.5 million acres of census water (includes inland water, coastal water, and the territorial sea). About 47 percent of the land area (16.2 million acres) is forested, which includes both timberland and other forest land (formerly woodland or unproductive), and both reserved and nonreserved forests. Satellite imagery clearly shows most of the forests occur in north Florida (fig. 1). Forests are concentrated inland from Apalachicola (southernmost coastal, panhandle city), around the Big Bend (juncture of the State's panhandle and peninsula), and west of Jacksonville (large Atlantic coast city in the northeast corner of the State). Florida ranks seventh out of the 13 Southern States (those States between and including Texas and Virginia) in area of timberland. At least 90 percent of the forest land qualifies as timberland, 7 percent is classified as other

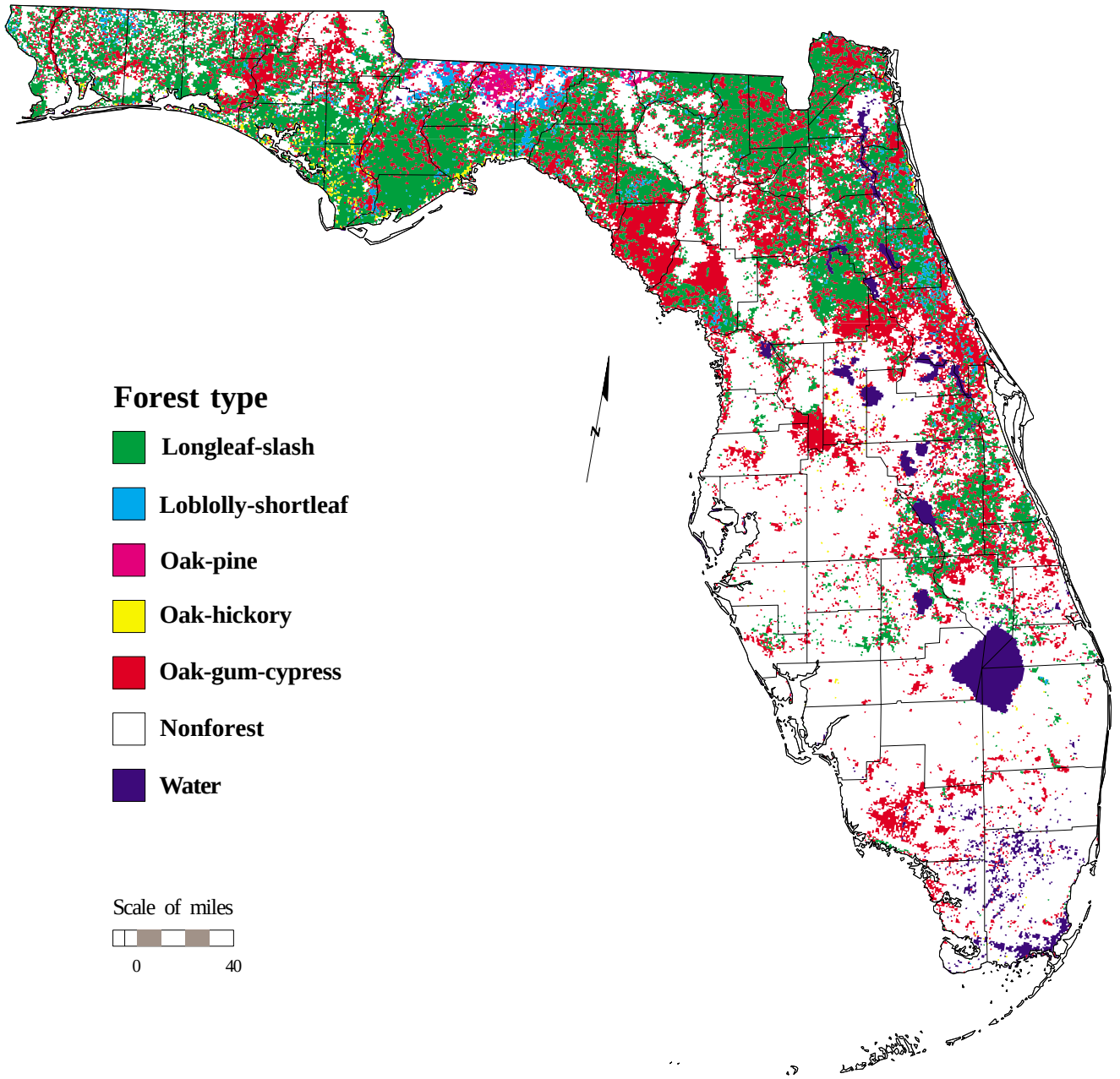


Figure 1—Forest-type distribution in Florida derived from 1993 digital satellite imagery (Powell and others 1993) (map created from various data sources by J. McCollum, U.S. Department of Agriculture, Forest Service).

forest land, and 3 percent is reserved timberland. The 14.7 million acres of timberland are those capable of producing 20 cubic feet of wood per acre per year and are assumed to be available for timber utilization. Florida's 1.0 million acres of other forest land have tree cover, but site conditions limit significant amounts of wood production. Hatrack cypress stands on marl flats typify other forest land areas. Except for Texas and Oklahoma, Florida has more area classified as other forest land than the remaining Southern States. The 0.5 million acres of reserved timberland are those found in wilderness areas, parks, preserves, and historic sites, where timber utilization is prohibited by law. Florida ranks third among the Southern States in area designated as reserved timberland.

Topographically and provincially, the entire State is classified as Coastal Plain. Elevations range from sea level to 345 feet. Florida's Coastal Plain differs significantly from Coastal Plain regions in other Southern States, due primarily to its unique climate. Practically surrounded by oceans and bathed by the warm currents of the Gulf Stream, the State's winters are increasingly moderate progressing southward along the peninsula. This phenomenon draws retirees and seasonal tourists alike. It also has created conditions supporting more species of trees than any State in the Union except Hawaii (Florida Department of Agriculture & Consumer Services, Division of Forestry 1999). Wetlands abound, including not only depressional and floodplain swamps throughout the State, but those areas defined by the 1987 U.S. Army Corps of Engineers Manual (U.S. Army Corps of Engineers 1987) as having hydric vegetation, hydric soils, and a wetland hydrology present. Based on these criteria, Florida has approximately 5.2 million acres classified as wetland timberland (Brown, in press). Most riverine systems are blackwater, several are aquifer fed, and some red river bottoms also exist (origins in Georgia and Alabama). Significant areas of sand hills and ridges occur. Flatwoods are common throughout. The subtropical, southern end of Florida's peninsula harbors remnant tropical hardwood hammocks and ridges. South Florida's shallow limestone substrate supports the Everglades, its coastal fringes support dense mangroves, and palm hammocks are common. Even though many of these areas are classified as other forest land, others are not; experiments with eucalyptus plantations have shown exceptional growth capabilities in some.

Photo—USDA Forest Service

The Blackwater River in Florida's panhandle

Florida stretches 650 miles from Pensacola in the northwest to Miami at the southeast, and another 150 miles across the Florida Keys to Key West, the southernmost point in the United States. Change is quite evident from one part of the State to the next. The northern half of Florida contains 82 percent of the State's timberland (fig. 2); all but one of the northern counties has 50 percent or more of its area in forest. As a result, most of Florida's timber production occurs there. The southern half of the State contains more urban development and a larger population, as well as more of the citrus, cattle, and vegetable production. The northwest panhandle is the most heavily forested (77 percent of the land area). There, on its many sand hills, more than one-half of the State's longleaf pine stands are found. In the northeastern portion of the State, 70 percent of the area is forested. Flatwoods typify the northeast Florida landscape, and more than half of the State's slash pine forest type occurs there. Central Florida is known as lake country, and only 23 percent of that area is covered by forest. Most of the State's citrus is grown there. South Florida is 21 percent forested, but more than one-half of that area is classified as other forest land. Although known as the land of the Everglades, large amounts of vegetables and sugar cane are produced there. The exotic Australian melaleuca tree (*Melaleuca quinquenervia*) threatens to displace native vegetation in parts of south Florida (Bodle and others 1994).

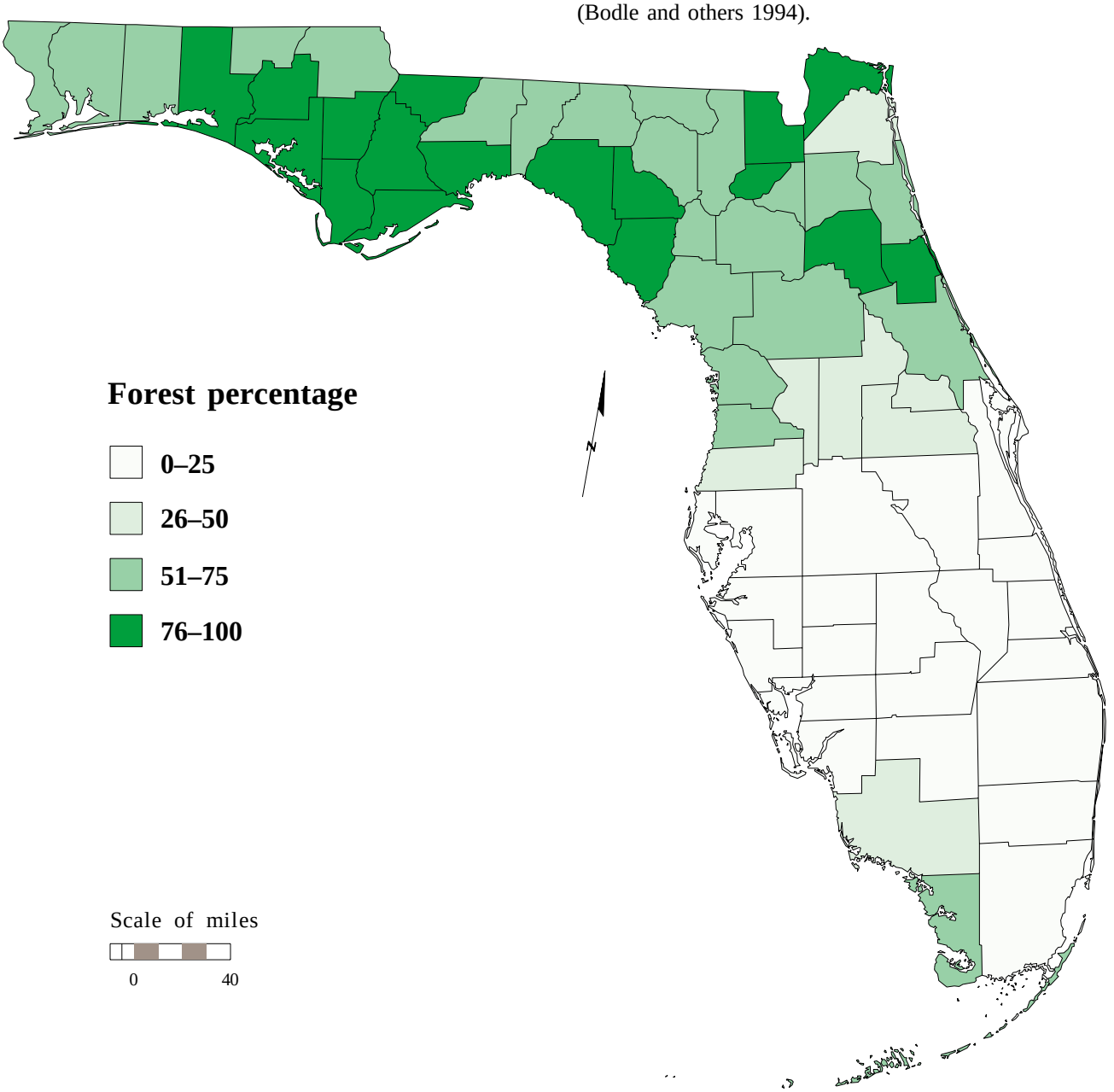


Figure 2—Florida counties by percentage of forest cover, 1995 (map created from chorographic data compiled by J. McCollum, U.S. Department of Agriculture, Forest Service).

Photo—Florida Division of Forestry

A natural pine stand in Florida

Timberland

Area

The first forest survey of Florida in 1936, recorded 19.7 million acres of timberland (fig. 3). Each subsequent survey recorded a decrease in area of timberland; in 1995 it was 14.7 million acres. However, the rate of decrease slowed to under 50,000 acres per year between 1987 and 1995. It had been 88,000 acres per year between 1980 and 1987; but the most rapid rate of decline occurred during the 1950's, when it was 200,000 acres per year (Bechtold and others 1990). Over half the recent net loss of timberland has been due to increases in urban and related land uses (table I). All net declines in timberland were in Florida's peninsula; the panhandle region experienced a slight increase.

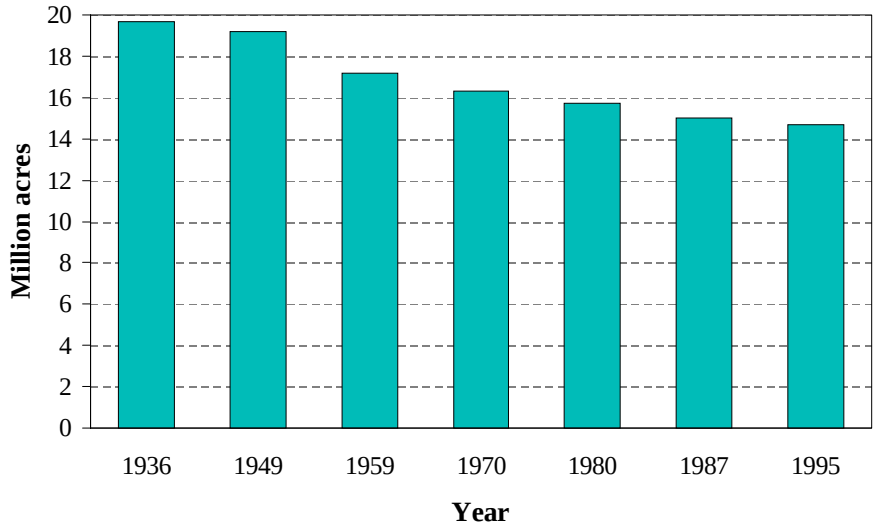
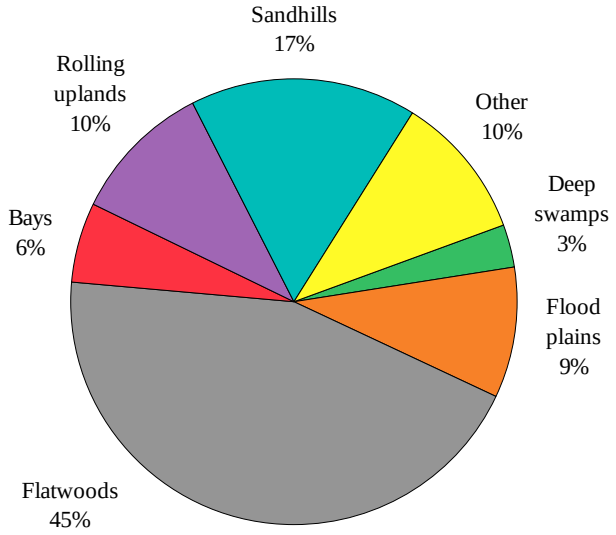


Figure 3—Area trends of Florida's timberland from 1936 to 1995.

Table I Changes in area of Florida's timberland between 1987 and 1995, by survey unit

Survey unit	Area of timberland in 1987	Area of timberland in 1995	Net change	Changes: Total gain	Additions from: Nonforest	Additions from: Other forest land	Total loss	Diversions to: Other forest land	Diversions to: Agriculture	Diversions to: Urban and other	Diversions to: Water
	Thousand acres										
Northwest	5,346.5	5,493.4	+146.9	268.8	266.7	2.1	121.9	12.4	42.7	64.1	2.7
Northeast	6,662.1	6,557.1	-105.0	174.6	174.6	0.0	279.6	44.3	79.7	148.0	7.6
Central	2,315.3	2,123.4	-191.9	107.3	107.3	0.0	299.2	92.3	50.8	148.8	7.3
South	658.7	476.7	-182.0	33.1	5.7	27.4	215.1	3.4	70.6	127.0	14.1
State	14,982.6	14,650.7	-332.0	583.8	554.3	29.5	915.8	152.4	243.8	487.9	31.7

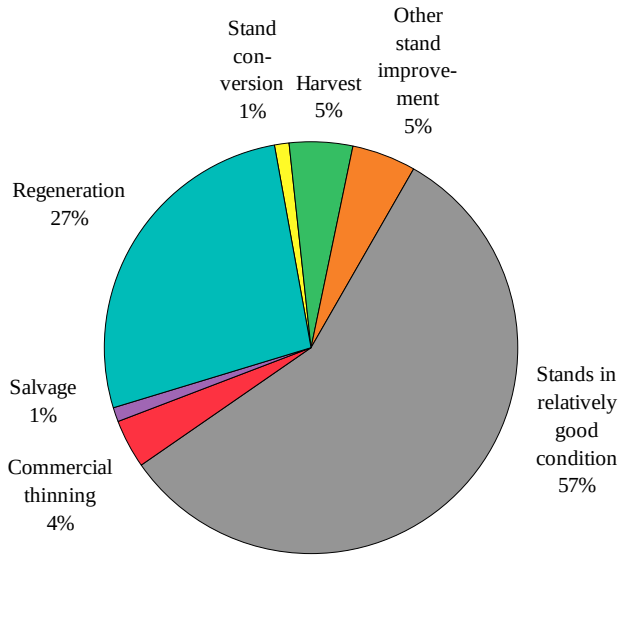
FIA categorized the State's timberland by physiographic class. Results show that the decline in timberland occurred across all physiographic classes except rolling uplands, which increased slightly. This correlates well with the timberland increase in the State's panhandle, where over two-thirds of Florida's rolling uplands are found. The gain was due to tree planting on former pasture land. However, 45 percent of the State's timberland is classified as flatwoods, more than any other category (fig. 4). Flatwoods are generally level sites outside the flood plains of rivers and streams. Sand hills account for 17 percent of Florida's timberland area, while rolling uplands account for 10 percent. Contrary to popular perceptions, deep swamps make up only 3 percent. Deep swamps account for less than one-half million acres of timberland, likely far below what many people would expect.



Total 14.7 million acres of timberland

Figure 4—Physiographic classes of Florida's timberland, 1995.

FIA rated forest stands according to condition of the forest and the need for treatment, if any. Identifying categories of condition and treatment opportunities enabled FIA to gauge the general condition of the State's forests. Fifty-seven percent, or 8.4 million acres, of Florida's timberland were judged to be in relatively good condition and in need of no further treatment (fig. 5). On



Total 14.7 million acres of timberland

Figure 5—Condition and treatment of Florida's timberland, 1995.

27 percent of timberland, regeneration was determined to be the greatest treatment need. Other private ownerships and upland hardwood stands accounted for more area needing regeneration than other categories. An estimated 5 percent of timberland was ready for harvest, and commercial thinning was needed on 4 percent. Fortunately, as of 1995, less than 1 percent of the timberland required salvage harvest as a result of fire, insect, or weather damage. Most (94 percent) of the

State's total timberland was considered an operable site, capable of sustaining normal forestry operations at some point in any given year. Under 1.0 million acres of timberland were considered an adverse site. Adverse sites in Florida are typically areas with year-round water problems that are incapable of normal forestry operations in any given year.

Ownership

FIA classified ownership of Florida's timberland into three broad categories: forest industry, nonindustrial private, and public. Forest industry lands are those owned by companies or individuals operating primary wood-using plants. NIPF lands are those held by farmers, other individuals, or other corporations. Public lands are those under Federal, State, or local municipality ownerships. Of Florida's 14.7 million acres of timberland, 49 percent is under NIPF ownership, 32 percent is owned by forest industry, and 19 percent is publicly owned. Timberland owned by forest industry is concentrated in the northern half of the State, whereas NIPF ownership of timberland extends into central and south Florida (fig. 6). Florida has the lowest percentage of NIPF-owned

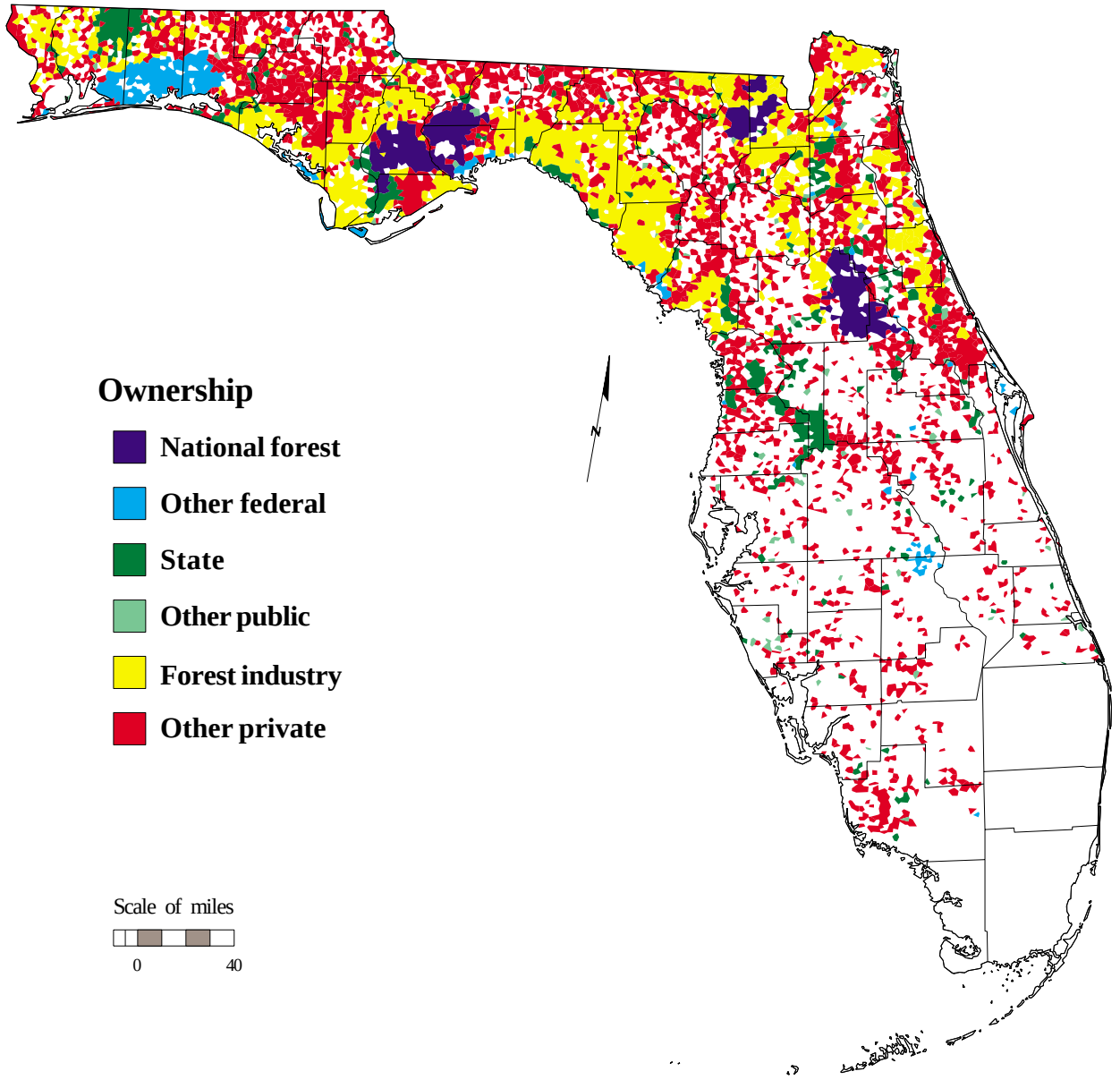


Figure 6—Ownership patterns of Florida's timberland, 1995 (map compiled from Florida demographic data by J. McCollum, U.S. Department of Agriculture, Forest Service).

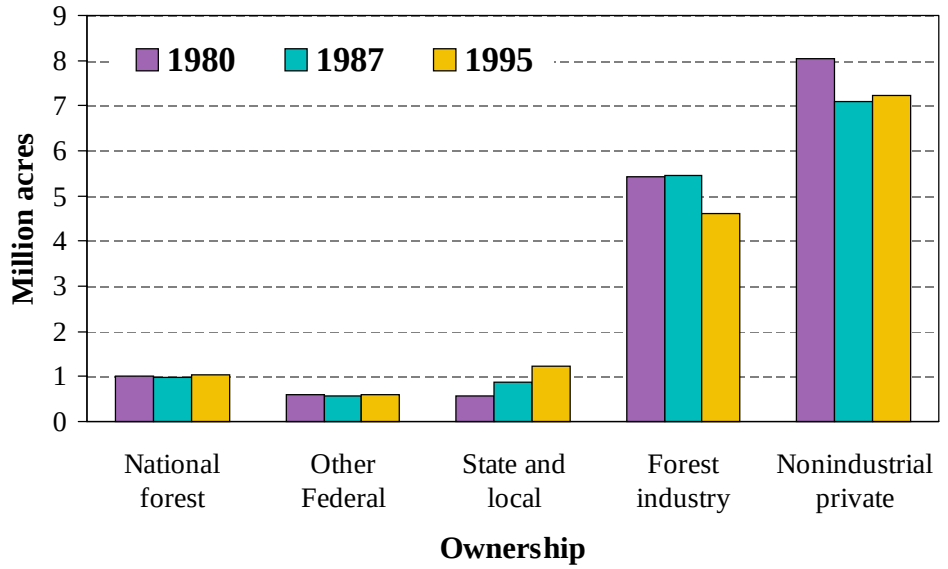


Figure 7—Ownership patterns of Florida's timberland, 1980, 1987, and 1995.

timberland of the 13 Southern States. This is a result of high levels of forest industry and public ownership. Florida's 2.8 million acres of timberland under public ownership constitutes the second highest State percentage in the South; only Arkansas is higher. However, Florida has the highest percentage of State-owned timberland in the South. State-owned timberland has increased rapidly, up from 0.8 million acres in 1987 to 1.2 million acres in 1995 (fig. 7). Florida has one of the nation's most active land acquisition programs aimed at protecting unique or endangered lands and preserving the quality of its water resources. National forests and other Federal lands have remained fairly stable since 1980, at around 1.6 million acres. Forest industry ownership of timberland has decreased from 5.4 million acres in 1987 to 4.6 million acres in 1995. NIPF timberland in Florida dropped over the last decade but increased slightly since 1987 to 7.2 million acres in 1995.

Forest Management Type

To better describe Florida's timberland, FIA classified it into five forest management types. These classes are pine plantation, natural pine, oak-pine, upland hardwood, and lowland hardwood (fig. 8). Pine plantations accounted for 32 percent of Florida's timberland, the

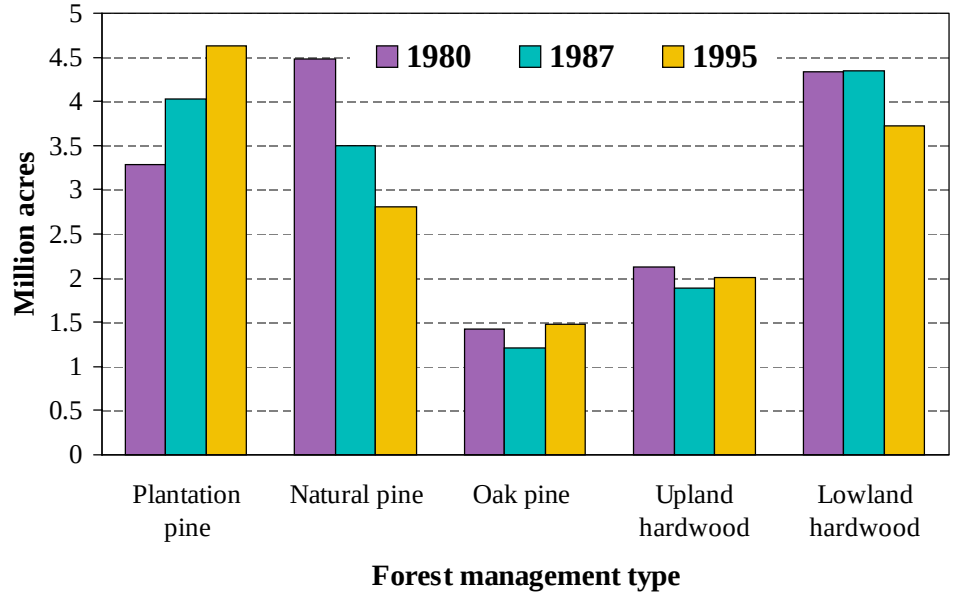


Figure 8—Forest management type trends of Florida's timberland, 1980, 1987, and 1995.

highest proportion of any Southern State. The area in pine plantations increased by 15 percent after 1987 and totaled 4.6 million acres in 1995. Area of natural pine stands continued its decrease, falling by 20 percent since 1987. Natural pine stands accounted for just 19 percent, or 2.8 million acres of Florida's timberland in 1995. Although some of the downward trend in area of natural pine resulted from urban development, much can be attributed to artificial regeneration of natural pine stands after harvest. It should be noted that not all the increase in area of pine plantations was at the expense of natural pine stands, because a significant portion of pine plantations originated on former pasture or cropland.

Stands classified as oak-pine accounted for 10 percent, or nearly 1.5 million acres of Florida's timberland. Upland hardwood stands covered 2.0 million acres and accounted for 14 percent. Stands classified as lowland hardwood, which includes cypress, totaled 3.7 million acres and accounted for 25 percent of the State's timberland. The area in lowland hardwood stands decreased since 1987. However, because lowland stands are not typically suitable for development—either due to poor drainage, high water tables, or possible wetland designation—most of their decline occurred as a result of shifts or reclassification to other forest management types. Past examples of how this occurred included drainage and/or bedding and planting to pine. Recent examples include the removal of a particular component in mixed stands that can change the species stocking ratios enough to reclassify a stand to another type. In Coastal Plains, as little as a 1-foot change in elevation can alter drainage or water table influence enough to permit changes in species occurrence from upland to lowland, or vice versa. This also creates extensive interfaces where species mixtures form transition zones not typical of individual forest types. Florida has an abundance of mixed species sites, which are difficult to classify.

Photo—Bill Lea

Red-cockaded woodpecker *(Picoides borealis)*

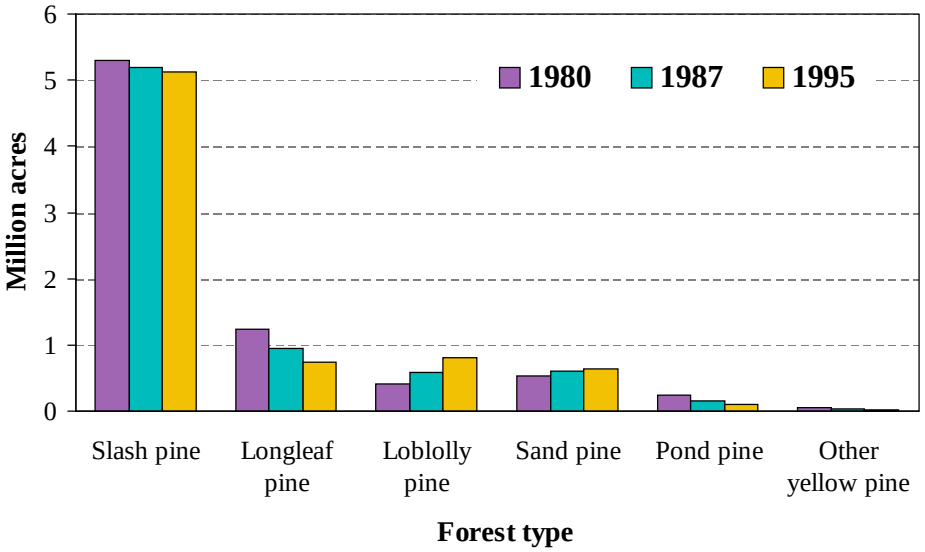


Figure 9–Yellow pine forest-type trends of Florida's timberland, 1980, 1987, and 1995.

Yellow Pines

Florida has 7.4 million acres of timberland classified as yellow pine forest types, with concentrations in northern Florida (fig. 1). In 1995, slash pine was still the most dominant pine type in the State, despite a slight decrease to 5.1 million acres (fig. 9). The area in loblolly pine increased 40 percent to 0.8 million acres, replacing the longleaf pine type as second in abundance. Gains in the area of loblolly pine are due to its wide use in plantations, particularly in north Florida. The longleaf pine type, now third in abundance, decreased 22 percent in area to 0.7 million acres. Declines in the longleaf pine type resulted from development and from replacement after harvest with slash pine, sand pine, loblolly pine, and hardwood in the absence of planting. Most remaining large, contiguous areas of the longleaf pine type were located on publicly owned lands, such as the Blackwater River State Forest, Eglin Air Force Base, the Apalachicola National Forest, and the Withlacoochee State Forest. The area of the sand pine type continued its upward trend, increasing 4 percent to 0.6 million acres. Although large natural stands of the sand pine type occurred in places like the Ocala National Forest, it was found on other remnant sand dunes around the State, such as Jonathan Dickinson State Park. The sand pine type was also frequently found planted in deep sands typical of former longleaf pine sites. Eighty-eight percent of the sand pine type occurred in the northern half of Florida. Florida contains more area of the sand pine type than any other State. The pond pine type continued to disappear in area with just 0.1 million acres left, most of which occurred on NIPF land. The already nominal area of shortleaf pine also continued to decline.

Hardwoods

Florida had more than 7.2 million acres classified as hardwood forest types in 1995 (fig. 10), nearly as large an area as was classified yellow pine forest. It should be acknowledged that there is a pine component within these hardwood types, just as there is some hardwood within many yellow pine types, particularly natural pine stands. Among the hardwood types, the oak-pine type group contains the highest percentage pine component, ranging from 25 to 49 percent. The oak-pine type group includes individual oak-pine forest types, such as slash pine-hardwood and loblolly pine-hardwood. The oak-pine type group accounted for nearly 1.5 million acres, up from the area recorded in 1980 and 1987. The oak-hickory type group was up from that recorded in 1980 and 1987, as well. The oak-hickory type group accounted for more than 1.4 million acres in 1995.

Oak-gum-cypress stands occupied nearly 3.7 million acres, one-half of Florida's hardwood acreage. Oak-gum-cypress types included pure cypress stands as well as pure gum swamps. It also included stands with varying mixtures of these species, as is so often the case in Florida. Area of oak-gum-cypress dropped significantly after 1987. The recent decrease in oak-gum-cypress is correlated with the increase in oak-pine and oak-hickory types, and involves the previously discussed shifts among forest types.

Southern scrub oak type experienced the most noticeable change among hardwood types. Southern scrub oak continued a rapid downward trend in area. At just 0.6 million acres in 1995, it is less than one-half of the area

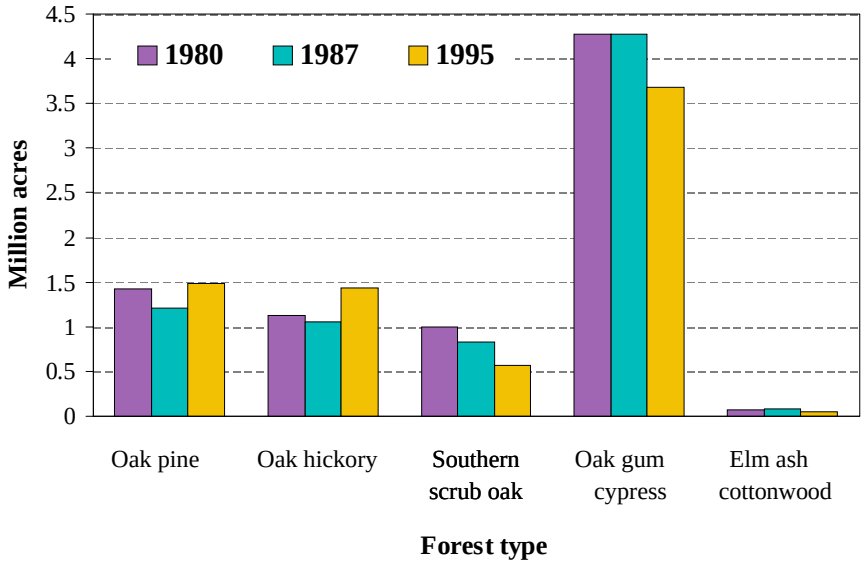


Figure 10—Hardwood forest-type trends of Florida's timberland, 1980, 1987, and 1995.

Photo—Bill Lea

Bald cypress *(Taxodium distichum* (L.) Rich.*)* swamp

it occupied before 1980. The high and dry nature of southern scrub oak sites makes them most suitable for urban development, which is one factor behind the decline.

Cypress

Demand for cypress resurged in the State's wood-using industry. Cypress was always valued for lumber, but the availability of sawlog-size cypress has diminished over time. Many large cypress are cull trees left on sites that were high graded in the early 1900's, while others are located along stream margins or lakeshores. Cypress growth rates are slow relative to other softwood species, and most harvested cypress stands are left to regenerate naturally. Fortunately, however, cypress differs from most other softwoods, in that stump sprouting can occur after harvest. This, coupled with regeneration from seed and a site subject to water level fluctuations that restrict some hardwood competition, can give cypress a distinct advantage over other softwoods left to regenerate naturally. The recent increased demand for cypress has been for mulch. Along with sound, merchantable-sized cypress, those with poor form, cubic cull, or small size can still produce mulch. Historically, FIA could produce tree numbers and volume data for individual cypress species, but not acreage figures for a cypress forest type. As a result of increased demand for cypress and because current forest-type classification does not fully address the cypress resource, FIA developed a temporary cypress forest type. The procedures were based on minimum stocking percentages of cypress trees to allow acres tantamount to a cypress forest type to be produced. Cypress stocking of 25 to 100 percent (the sum of medium, high, and pure stocking [fig. 11]) in a stand was chosen to represent a cypress forest type. This threshold was based on minimum stocking percentages required for pine in the oak-pine forest type definition.

To capture all acres where cypress occurs is unrealistic, because the degree of cypress stocking in stands can range from a low of 1 percent to 90 percent or better in essentially pure stands. However, for comparison and to show trends and acreage for other cypress stocking densities, FIA developed stocking categories of 1 to 24 percent (low stocking), 25 to 49 percent (medium stocking), 50 to 89 percent (high stocking), and 90 to 100 percent (pure stocking).

According to FIA's temporary cypress forest-type definition (the sum of medium, high, and pure stocking), in 1995 there were 1.4 million acres of cypress forest type in Florida. This figure decreased steadily from about 1.8 million acres in 1980. The same downward trend was evident in those stands where cypress was present at the medium, high, and pure stocking levels. Those stands where cypress was present but constituted less than 25 percent of the stocking, were represented by

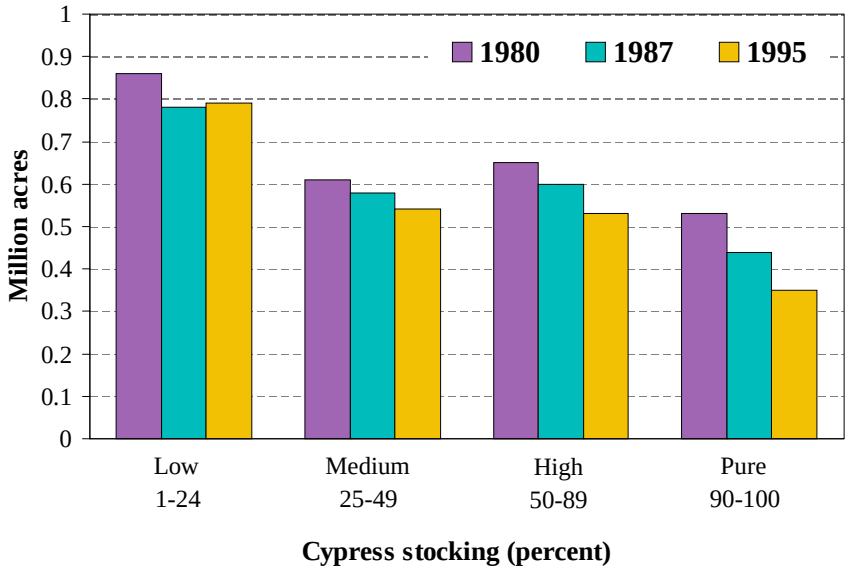


Figure 11—Cypress forest-type designations and trends of Florida's timberland, 1980, 1987, and 1995.

Photo—Florida Division of Forestry

Cypress *(Taxiodium distichum* (L.) Rich*)* regeneration from stump sprouts

low stocking figures and were considered separately from those included in the temporary cypress forest type. The recent trend in stands with low cypress stocking was more stable than in stands with higher cypress stocking; declines were proportionately less from 1980 to 1995. Perhaps these stands did not have enough cypress to warrant industrial harvesting of the species.

Harvest and Regeneration

Rates of harvest and regeneration for all species combined depict the dynamics of change occurring within Florida's timberland. The latest average annual rate of final harvest was 249 thousand acres (fig. 12), a decrease of 16 percent from the 296 thousand-acre annual average measured in the 1987 survey. This drop occurred even as the total volume removed increased slightly. Behind this phenomenon, however, was an increase in removals from pine plantations, which tend to provide higher volumes per acre harvested. Increased hardwood and cypress removals enlarged total removals as well. Also, according to definition, removals include volume on any acreage removed from the timberland base. This is illustrated by the 119,000-acre increase in reserved timberland since 1987 to 522,000 acres in 1995 (appendix tables 1 and 16). Most of the increase in reserved timberland occurred in central and northeast Florida.

Seventy-nine percent of the final harvest area came from pine stands. Lowland hardwood stands accounted for more than half the remaining acreage receiving a final harvest. Over one-half of the final harvest was on forest industry lands. NIPF ownerships accounted for 39 per-

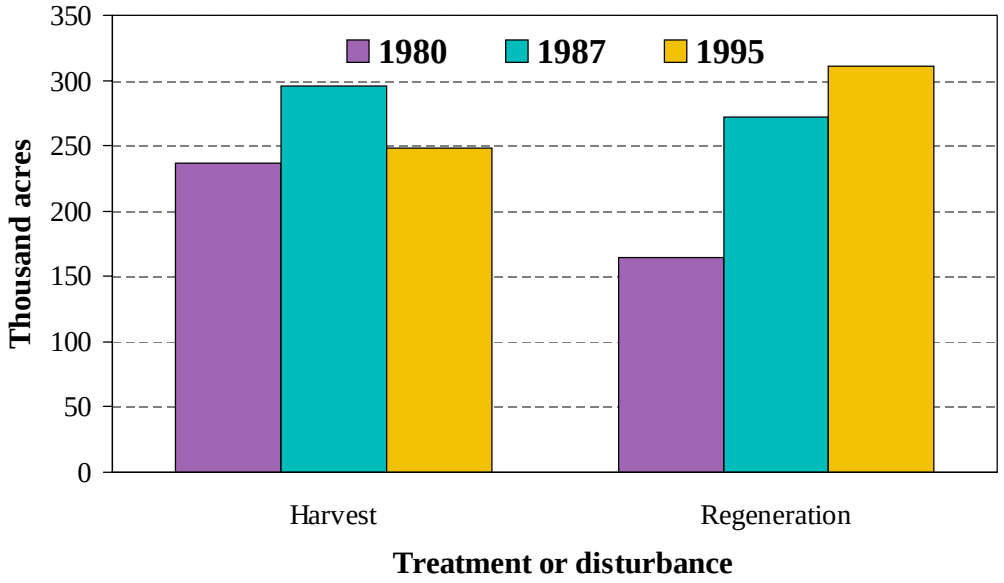


Figure 12—Trends in average annual rates of harvest and regeneration on Florida timberland for surveys completed in 1980, 1987, and 1995.

cent of the final harvest area. Just 8 percent of the final harvest area involved public lands. Partial harvest or thinning occurred on an additional average of 63,000 acres annually.

Total area regenerated (artificially and naturally) increased steadily since 1980 (fig. 12). Regeneration between 1987 and 1995 averaged 311 thousand acres annually. Not surprisingly, 79 percent of the acreage regenerated to new pine stands. The area regenerated to pine exceeds the area of pine harvested by 26 percent.

Total area artificially regenerated increased each survey period as well (fig. 13). Artificial regeneration accounted for approximately three-fourths of total regeneration in each of the last three survey periods. Over one-half of the area artificially regenerated was forest industry lands; 40 percent was NIPF ownership. Only 7 percent of the area artificially regenerated was public lands. In contrast, areas left to regenerate naturally occurred mostly on NIPF lands. NIPF ownerships accounted for 71 percent of the natural regeneration, and forest industry lands accounted for 21 percent.

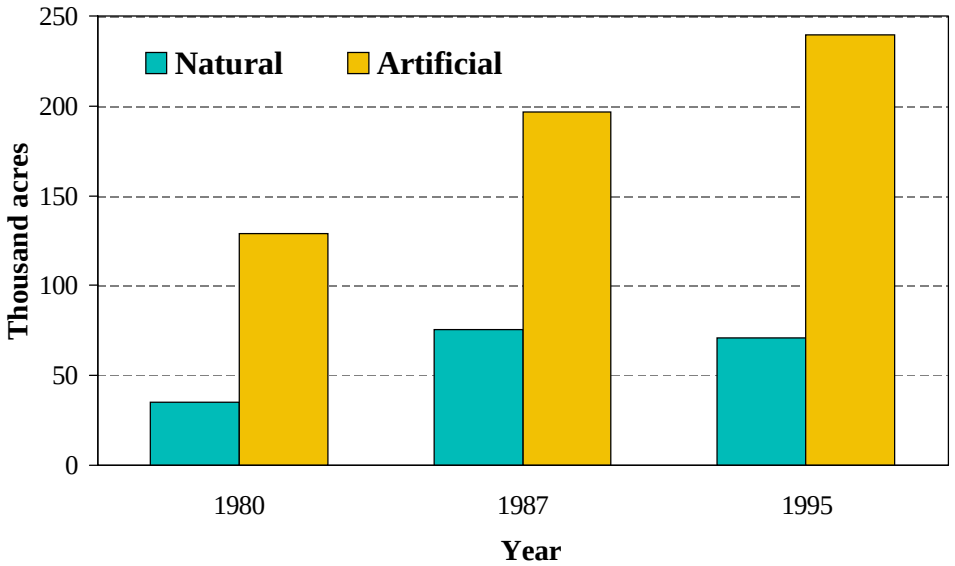


Figure 13—Trends in average annual rates of natural and artificial regeneration on Florida timberland for surveys completed in 1980, 1987, and 1995.

Public lands accounted for 8 percent of the natural regeneration. Proportionately, natural regeneration was practiced more on public lands to favor uneven-aged stands and promote longleaf pine and other species. Public land management plans must consider recreational use and the preservation of certain ecotypes, as well as timber production, which typically is the primary management goal in the private sector.

Stand-Age Profiles

The age structure of stands, for a particular component of the forest resource, can provide evidence of harvest regimes, future timber supplies, and possible management influences. In 1995, the age structure was skewed toward younger stands for the 4.6 million acres of pine plantations (fig. 14a). Most of the pine plantation resource was less than 30 years old. This age structure is excellent for providing sustainable supplies of pulpwood and small sawtimber. The comparatively low acreage in what FIA calls the no manageable stand (NMS) category indicates intensive management and successful levels of regeneration and stocking. NMS acres are less than 60 percent stocked with growing-stock trees of similar sizes to feature together in a management scheme.

The age structure for the 2.8 million acres of natural pine stands peaked in the 31- to 60-year age classes (fig. 14b). The natural pine age structure appeared to be the current source for larger sawlogs. However, fewer acres of natural pine stands were present to replace this part of the resource at the 1995 levels. This would be particularly true for the next 10 to 20 years. Planted stands could fill these potential shortfalls if managed on longer rotations than traditionally occurs. A high percentage of the natural pine stand acreage lacked a manageable stand. This indicates either a lower level of regeneration or a less successful regeneration that resulted in low stocking levels. The situation on lands with natural pine stands present suggests less intensive forest management, if any.

The age structure for the 1.5 million acres classified as oak-pine was more difficult to assess (fig. 14c). Like natural pine stands, it also has a disproportionate amount of acreage in the NMS category. This suggested little management, delayed management, or less than successful regeneration. However, the oak-pine type can be a transitional type, particularly due to partial cuttings, which can change stocking levels and forest-type classifications. Therefore, some oak-pine acres are more easily subject to change. Some oak-pine stands include planted trees, e.g., where pine regeneration either had unsuccessfully competed with natural hardwood regeneration or, in stands less than 10 years old, had not yet outgrown natural hardwood regeneration.

The age structure for the 2.0 million acres of upland hardwoods peaked in the 0- to 10-year-old age class (fig. 14d). Numerous and prolific hardwood sprouting after a cutting could contribute to the higher acreage in this youngest age class. It may also include acres where pines were removed with no provision for replanting. Regardless, upland hardwoods had the highest amount of acres with NMS present. This suggests that upland hardwoods received virtually no management influence.

The age structure for 3.7 million acres of lowland hardwoods, which included cypress, was skewed toward the older age classes. Lowland hardwood acreage age structure peaked in the 41- to 80-year-old age classes (fig. 14e). The accessibility to and operability in lowland sites were problems that contributed to the number of older stands in this group. Even so, lowland hardwoods accounted for the second highest area with NMS present. This suggests a general lack of management efforts.

The temporary cypress forest type, a subset of the lowland hardwood group, accounted for over 1.4 million acres of the lowland hardwoods. The cypress type age structure (fig. 14f) paralleled that of lowland hardwoods, i.e., there was more acreage in older stands that peaked in the 51- to 80-year-old age classes. Despite a slight increase in area of stands less than 10 years old, there were fewer acres of younger stands to replace 1995 levels of older stands, should they be harvested. The fact that acreage of cypress stands less than 10 years old exceeded the acreage of 11- to 20-year-old stands may be the result of increased seedlings naturally regenerated after harvest. The cypress type had a high percentage of NMS acres without a manageable stand present. However, the cypress type had proportionately fewer NMS acres than the remaining lowland hardwoods and all other groups but planted pine. This was unusual, because cypress typically receives little or no management. In the absence of management, perhaps water levels play a role in controlling understory vegetation, fire, harvest frequency, regeneration levels, and competition from other species, all of which influence stocking levels and the reduced area with NMS present.

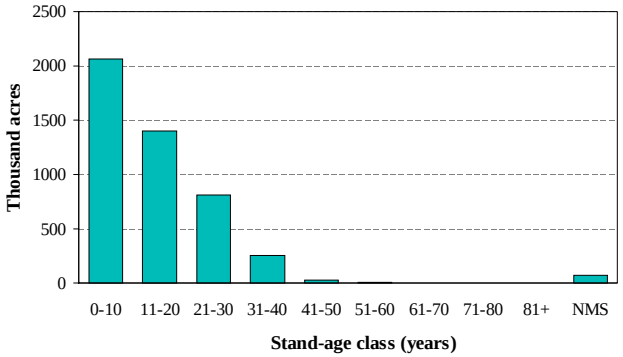


Figure 14a—Stand-age structure of planted pine stands in Florida, 1995.

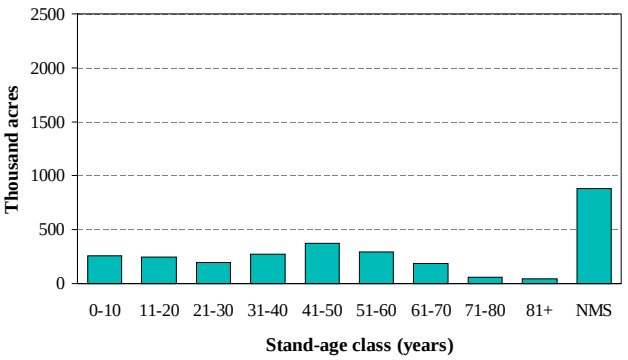


Figure 14b—Stand-age structure of natural pine stands in Florida, 1995.

Figure 14c—Stand-age structure of oak-pine stands in Florida, 1995.

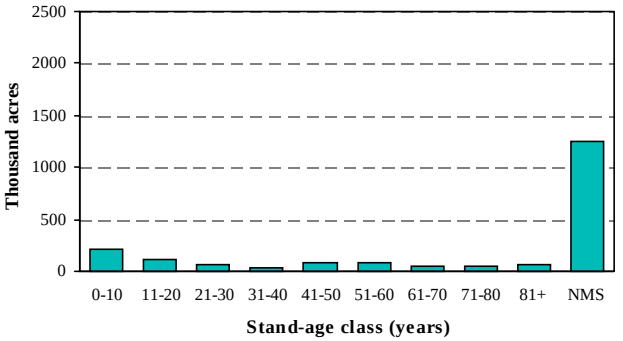


Figure 14d—Stand-age structure of upland hardwood stands in Florida, 1995.

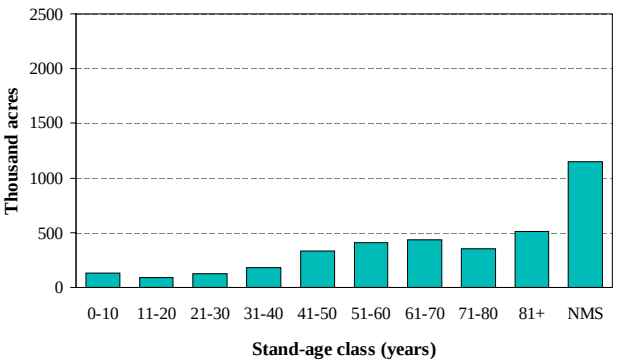


Figure 14e—Stand-age structure of lowland hardwood stands in Florida, 1995.

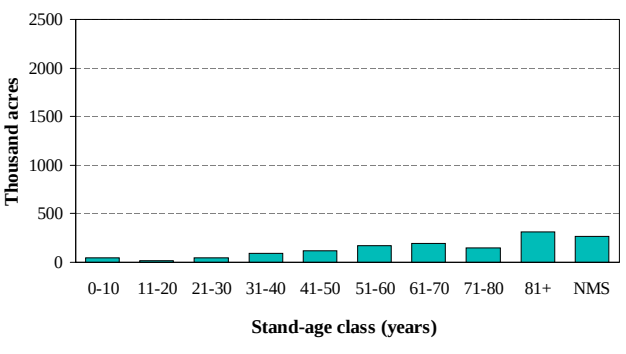


Figure 14f—Stand-age structure of cypress stands in Florida, 1995 (cypress forest type based on 25- to 100-percent stocking with cypress).

Photo—Bill Lea

Long leaf pine *(Pinus palustris* Mill.*)* on the Ocala National Forest

Volume

Tree Populations

Trends in numbers of trees by species (figs. 15a, 15b, and 15c) are not related to acreage trends by forest type and, therefore, offer a different perspective on changes in the timber resource. A look at the population of trees for a specific species or group in the timber resource can reveal the past, present, and future status of potentially available supplies from that species or group.

In 1995, trends for yellow pines (including cedar) showed significant increases in tree numbers for the 2- and 4-inch diameter classes (fig. 15a). The 6- and 8-inch diameter classes also increased. The rise in the smaller diameter classes primarily reflects high levels of artificial regeneration in the mid-to-late 1980's (fig. 16). The 1987 survey identified reductions in the numbers of small diameter yellow pines, and this represents a notable turnaround.

The numbers of all live hardwood trees from 2 through 10 inches in diameter have continued to decrease since 1980 (fig. 15b). However, the declines were proportionately nominal, and represented little actual change in the timber resource.

The number of cypress trees decreased in all diameter classes from 2 through 12 inches (fig. 15c). These decreases are steeper than the decreases for hardwood trees, and could suggest downsizing of the cypress resource if older trees were harvested. In the absence of harvest, this might suggest an older, larger sized cypress resource in the future. However, similar to some large hardwoods, many of these larger trees may remain because they were unavailable or inaccessible. Compared to the number of all live hardwood and yellow pine trees (fig. 17), cypress is a much smaller component of the total tree inventory in Florida. If the number of cypress trees continues to decrease, their portion of the total tree inventory could become even smaller. It is also evident from these data that hardwoods dominate numbers in the smallest diameter classes, whereas pines dominate numbers in the poletimber-sized diameter classes. Both of these situations result from the high degree of pine plantations in the State.

Inventory

Trends in the volume of growing-stock trees are indicative of changes in the harvestable portion of the inventory. Volume is computed for those trees at least 5.0 inches in d.b.h. and includes the stem volume between a 1-foot stump and a 4.0-inch top diameter. Growing-stock trees are those judged to satisfy or prospectively satisfy minimum log lengths and log grade standards of quality. The volume presented for a tree species or species group is the cumulative volume for that species wherever it occurs. For instance, the volume for yellow pine would be all inclusive, counting volume from those pines scattered within a hardwood forest type as well as volume from pines found in a pure longleaf pine stand.

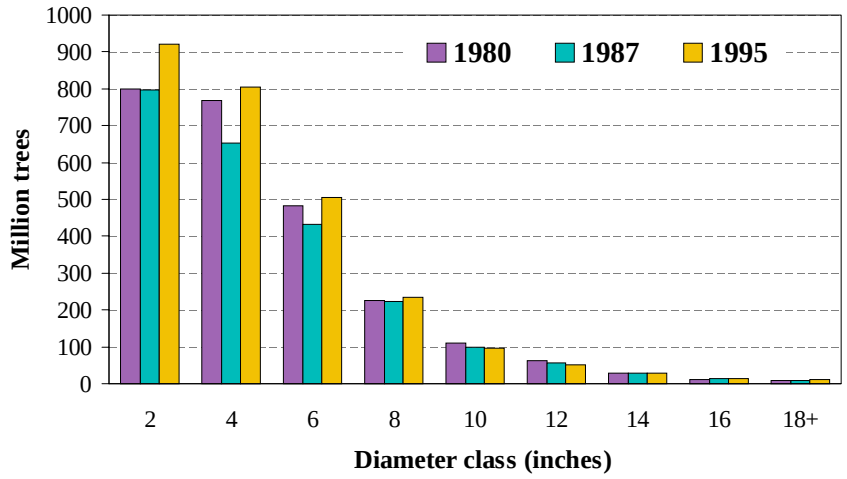


Figure 15a—Trends in number of all live yellow pine trees on Florida timberland by d.b.h. class, 1980, 1987, and 1995.

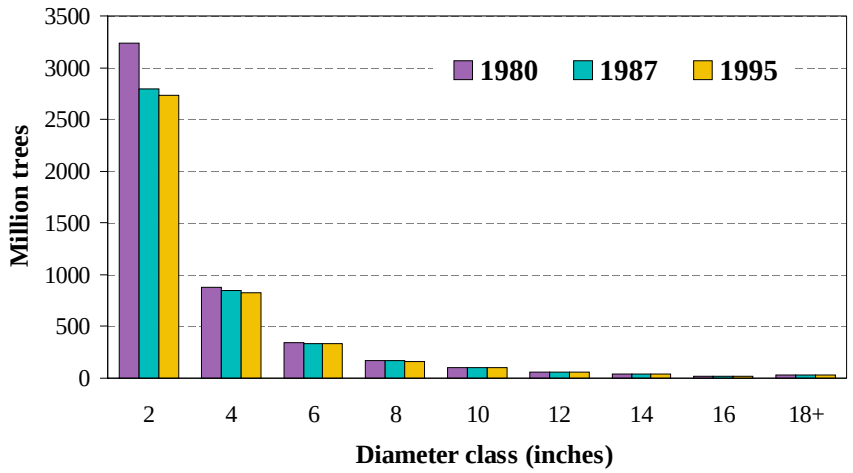


Figure 15b—Trends in number of all live hardwood trees on Florida timberland by d.b.h. class, 1980, 1987, and 1995.

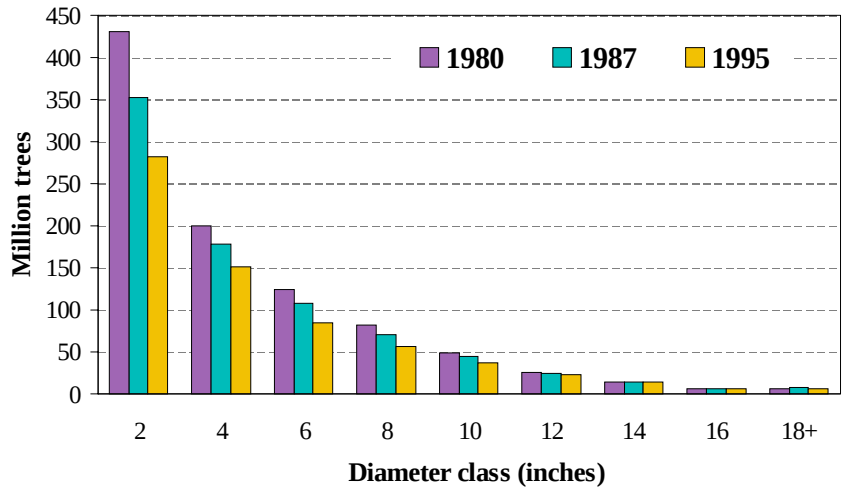


Figure 15c—Trends in number of all live cypress trees on Florida timberland by d.b.h. class, 1980, 1987, and 1995.

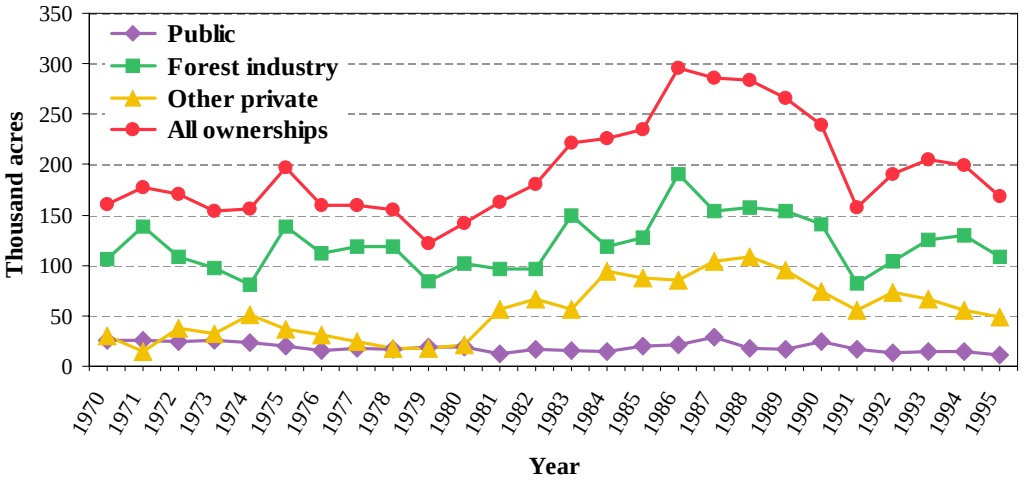


Figure 16—Trends in acres planted to trees in Florida by ownership, 1970 to 1995 (U.S. Department of Agriculture, Forest Service 1995).

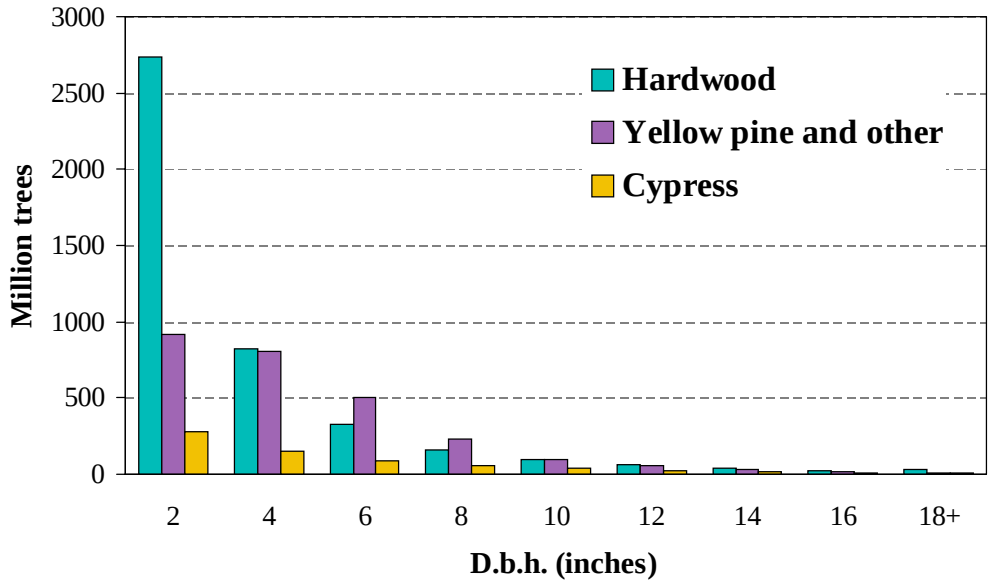


Figure 17—Comparison of all live tree numbers for hardwood, yellow pine, and cypress on Florida timberland, 1995.

Overall, Florida's total growing-stock volume approached 15.4 billion cubic feet, an increase of 7 percent since 1987. Gains in volume of hardwoods accounted for more than one-half (56 percent) of the overall increase.

The volume of hardwood growing stock increased by 10 percent after 1987 to 5.9 billion cubic feet in 1995 (fig. 18). This increase continues an upward trend in hardwood volume that began in 1970. Over two-thirds of the hardwood growing-stock volume was located in lowland hardwood stands. Collectively, all species of oak totaled 1.8 billion cubic feet and made up 31 percent of the hardwood growing-stock volume. Tupelo and blackgum totaled 1.5 billion cubic feet and accounted for 25 percent of the hardwood growing-stock volume. Bays and magnolias totaled 0.9 billion cubic feet, or 14 percent of the hardwood volume. Sweetgum totaled 0.6 billion cubic feet, or 9 percent of hardwood volume. Soft maple totaled 0.4 billion cubic feet and ash totaled 0.3 billion cubic feet, or 7 and 6 percent of hardwood volume, respectively. Among the hardwoods, the oak group increased in volume, whereas tupelos and blackgums remained relatively unchanged. Bays and magnolias, as well as soft maples and sweetgum, increased in volume, but ash decreased.

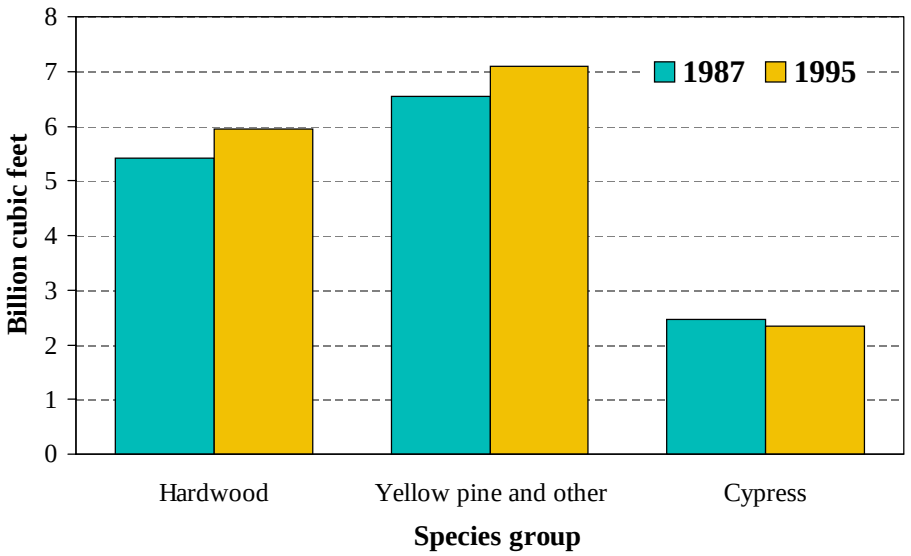


Figure 18—Volume trends for hardwood, yellow pine, and cypress growing stock in Florida for surveys completed in 1987 and 1995.

Photo—USDA Forest Service

Foresters checking age and growth of pine stand

The volume of yellow pine growing stock (including cedar) increased by 9 percent after 1987 to 7.1 billion cubic feet in 1995. Despite continued gains in hardwood volume, yellow pines also increased in volume, maintaining the majority of Florida's total wood volume. Eighty-eight percent of the State's yellow pine volume consists of just three species: slash, longleaf, and loblolly pines. Volume of slash pine totaled 4.3 billion cubic feet, representing 61 percent of the total yellow pine volume. Volume of longleaf pine totaled 1.1 billion cubic feet, or 15 percent; and loblolly pine volume totaled 0.9 billion cubic feet, or 13 percent of all yellow pine volume. Within the yellow pine group, the volume of slash pine, loblolly pine, and sand pine increased, but the volume of longleaf pine and pond pine decreased. Changes in volume of individual yellow pine species correspond well with the changes in area for these forest types.

Unlike volume trends for hardwoods and yellow pine, cypress volume decreased by 6 percent after 1987 to 2.3 billion cubic feet in 1995. This trend is consistent with the reduction in timberland area dominated by the species.

Growth

Analysis of average net annual growth for a species or species group is important when assessing resource trends, and an essential step in determining net change. By definition, net annual growth is gross growth minus mortality. Mortality estimates will be addressed in the next section.

Between 1987 and 1994, average net annual growth of all growing stock in Florida totaled 693 million cubic feet, an increase of 10 percent from that reported in

Photo—USDA Forest Service

Fire—forest friend and foe

1987 for the 1980 to 1986 period. Hardwood net annual growth increased 14 percent to 161 million cubic feet (fig. 19). Hardwoods accounted for 23 percent of Florida's total net annual growth. Lowland hardwood stands provided 59 percent of the total net annual hardwood growth. Oak species accounted for nearly all of the increase in hardwood growth.

Net annual growth of yellow pines was up by 14 percent to 492 million cubic feet. Yellow pines accounted for 71 percent of the State's net growth from 1987 to 1994. Two-third's of the pine growth occurred in pine plantations. Most of the yellow pine net growth increase came from slash pines, even though the rate of increase in growth was higher for loblolly pine.

In contrast, net annual growth of cypress decreased by 30 percent to 40 million cubic feet. Cypress accounted for 6 percent of the State's total net annual growth. The State's overall increase in net annual growth would have been higher if it were not offset by the decrease in cypress growth.

Mortality

Mortality is one component of change in the forest resource. Cumulative mortality reduces cumulative gross growth; net growth is the difference. Net growth less removals equals net change in the resource. The ability to minimize mortality can effect positive changes in the resource. The causes of mortality include weather, fire, insects, disease, animals, and suppression.

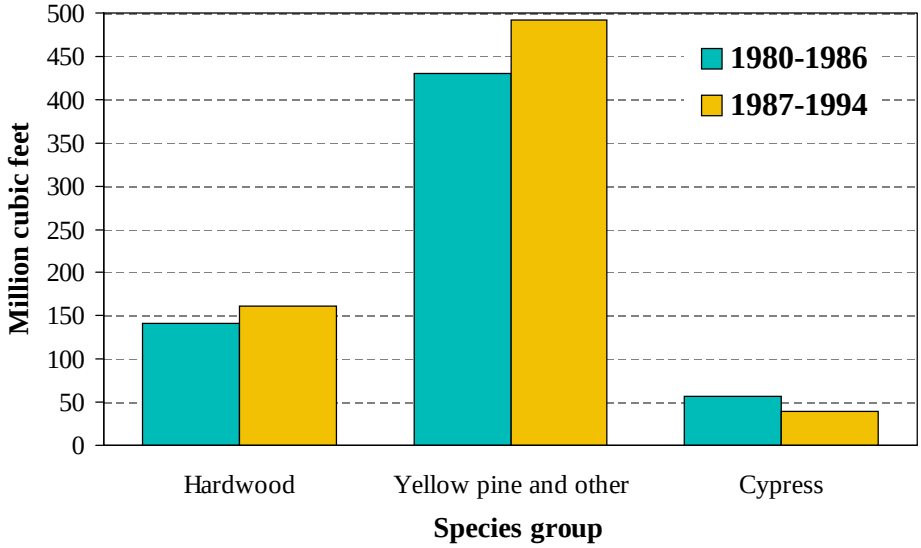


Figure 19—Average net annual growth trends for hardwood, yellow pine, and cypress growing stock in Florida for survey periods 1980-1986 and 1987-1994.

Resource managers have no control over the weather, but proper forest management can reduce the impacts of fire, insects, disease, and suppression (competing vegetation). The cause of death was not apparent in a significant portion of mortality due to the passage of time and wood decomposition.

Between 1987 and 1994, the average annual rate of mortality declined for all major species groups (fig. 20). According to the 1995 survey, weather was the leading cause of death in each major species group. The top three causes of hardwood mortality were weather, disease, and suppression. Total hardwood mortality averaged 52 million cubic feet annually between 1987 and 1994, which reduced gross growth of hardwoods by 24 percent. In yellow pines and other softwoods, the four main causes of death were weather, insects, disease, and fire. Total yellow pine and other softwood mortality averaged 46 million cubic feet annually between 1987 and 1994, and reduced gross growth of these species by 9 percent. Major contributors to cypress mortality were weather, fire, and suppression. Total cypress mortality averaged 7.7 million cubic feet annually between 1987 and 1994, which reduced gross growth of cypress by 16 percent.

Photo—Florida Division of Forestry

Cypress and hardwood removals

Removals

Estimates of average annual removals also help identify resource trends and, ultimately, enable us to determine net change in the resource. Between 1987 and 1994, average annual removals of growing stock in Florida totaled 561 million cubic feet, an increase of 4 percent. Even though yellow pines continued to dominate removals (77 percent of total), the overall increase in total removals for the State was driven by increased hardwood and cypress removals.

Hardwood removals were up by 33 percent to an average of 88 million cubic feet annually (fig. 21). Lowland hardwood stands were the source for two-thirds of the hardwood removals. Oak species made up almost one-half (46 percent) of the hardwood removals. Tupelo and blackgum accounted for the next largest portion of hardwood removals at 15 percent, followed by sweetgum at 13 percent.

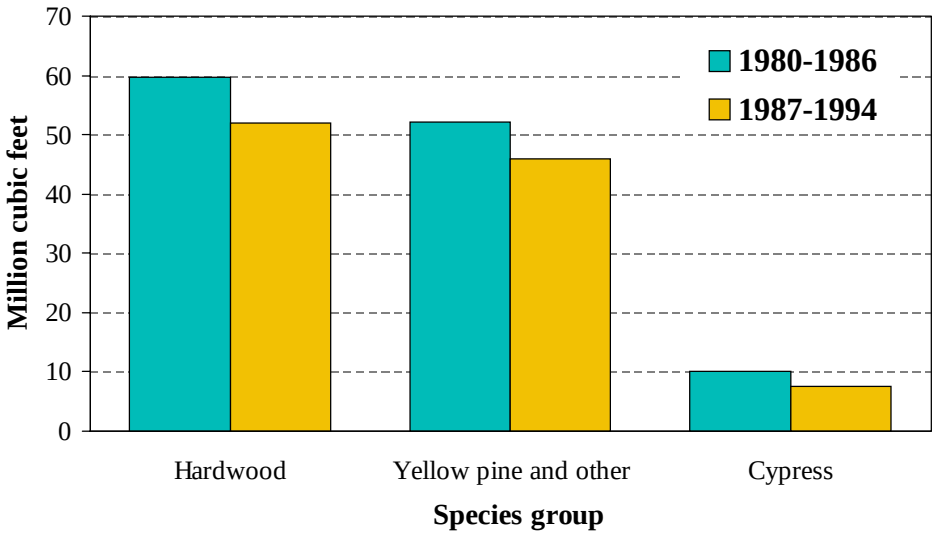


Figure 20—Average annual mortality trends for hardwood, yellow pine, and cypress growing stock in Florida for survey periods 1980-1986 and 1987-1994.

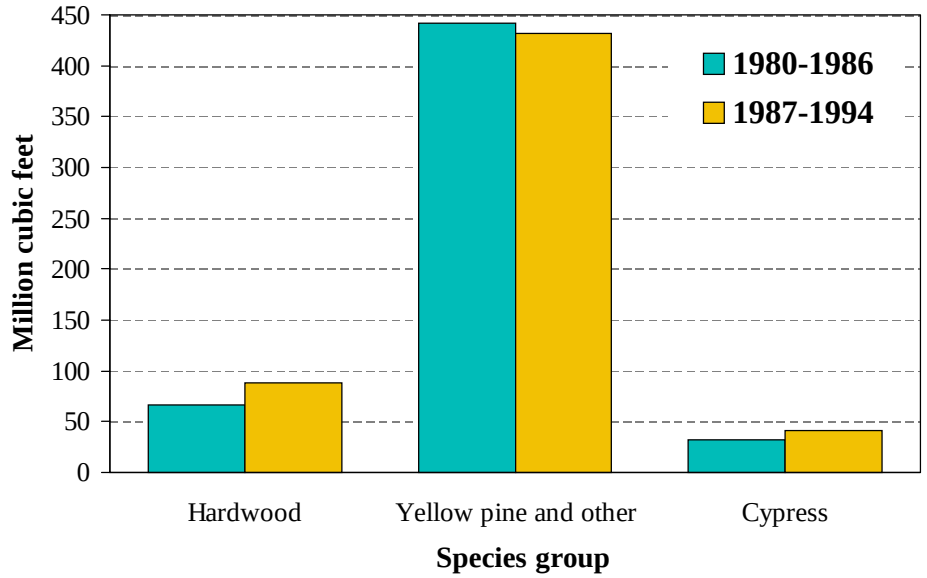


Figure 21—Average annual removal trends for hardwood, yellow pine, and cypress growing stock in Florida for survey periods 1980-1986 and 1987-1994.

Like hardwoods, removals of cypress increased. Cypress removals were up by 28 percent to an average of 41 million cubic feet annually. Cypress removals accounted for 7 percent of the State's total average annual removals. Increased demand for cypress mulch is one factor contributing to the rise in cypress removals.

In contrast, annual removals of yellow pine were down 2 percent to an average of 432 million cubic feet. More than one-half of the yellow pine removals was from pine plantations, up from 43 percent between 1980 and 1986. Slash pine made up 72 percent of yellow pine removals, longleaf pine 11 percent, and loblolly pine 8 percent. Sand pine, pond pine, shortleaf pine, spruce pine, and cedars made up the remaining 9 percent of the total yellow pine removals.

Net Change

By comparing growth to removals, we can identify net change in Florida's growing-stock inventory (fig. 22). The difference between average net annual growth and

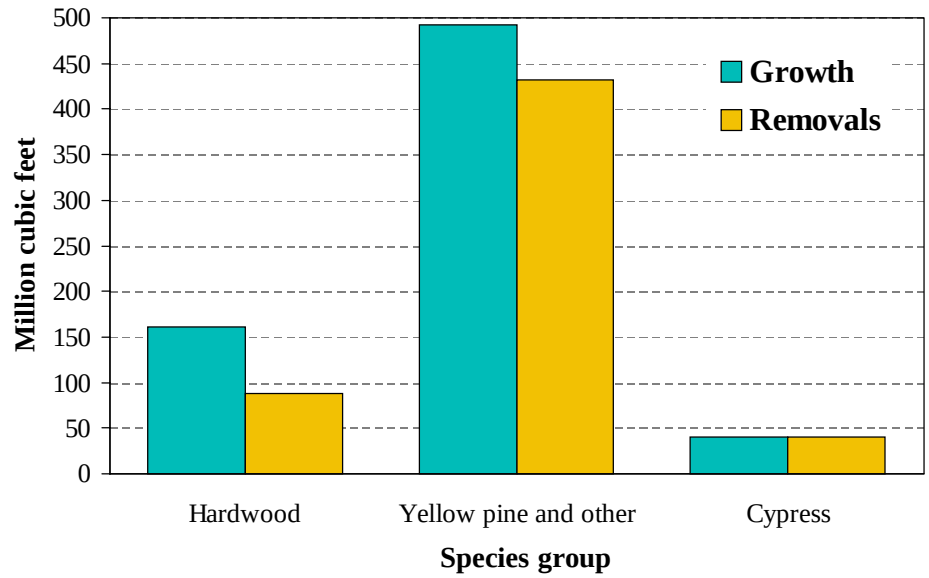


Figure 22—Net change in inventory expressed as the difference between growth versus removals for hardwood, yellow pine, and cypress growing stock in Florida, 1995.

average annual removals yields net change in the inventory. Hardwood removals increased substantially, thus the ratio of hardwood growth to removals has narrowed from 2.1 to 1 recorded in 1987 to 1.8 to 1 in 1995. Hardwood growth still exceeded removals by a wide margin, a situation that still bodes well for the hardwood resource.

In 1995, growth of yellow pine exceeded removals by 14 percent. This represents a turnaround from the previous survey, where yellow pine growth did not surpass removals. The ratio of yellow pine growth to removals improved from a slight deficit of 0.97 to 1 in 1987 to 1.14 to 1 in 1995, an improvement that resulted from an increase in growth and a decrease in removals. A bright outlook for the yellow pine resource depends on sustained levels of growth and limited increases in removals.

In contrast, removals of cypress exceeded growth by 2 percent. This represents a major change from the previous survey, where cypress growth exceeded removals. The cypress growth to removals ratio decreased from 1.8 to 1 in 1987 to 0.98 to 1 in 1995. The 1995 ratio approximates sustainable levels of harvest. However, long-term prospects for the cypress resource depend on future levels of demand, as well as adequate regeneration and management. Without sustainable harvests, and if the availability of older stands ceased, the smaller areas in cypress forest type less than 30 years old (fig. 14f) could signal future supply problems.

Photo—Bill Lea

Slash pine *(Pinus elliottii* Engelm.*)* coastal scrub

Photo—USDA Forest Service

Preparations at the logging deck

Timber Products Output

Economy

At 13 million people (U.S. Department of Commerce 1997b) and growing, Florida was the fourth most populated State in the Nation during the survey period. Urban development both taxes the timberland resource for its products and reduces its land base. The State's forest industry meets most demands by managing for sustained yields. Despite the loss of forest land to urban and other nonforest uses, the manufacture of lumber, paper, and other primary wood products, combined, ranks fourth in the State's manufacturing economy in terms of number of employees; it ranks sixth in payroll dollars (U.S. Department of Commerce 1997a). Nearly 40,000 workers were employed in manufacture of primary wood products in 1995, with earnings over 1.0 billion dollars. Almost 1,800 firms were involved in the manufacture of primary wood products, while the processing of most roundwood originated at the operation of 113 primary wood-using plants. These were located in 40 of Florida's 67 counties (fig. 23). Plant numbers were down from 143 recorded at the time of the 1987 survey (Johnson and others 1997). The 113 primary mills operating in 1995 included 68 sawmills, 5 veneer mills, 8 pulpmills, and 32 other mills.

Sources

Timber products output (TPO) data are collected annually through canvasses of all primary wood-processing plants in Florida. These data supplement FIA's periodic inventory of timber volume and removals, and are necessary to track changes and trends in plant output levels. Total output, averaged over each survey period, is the sum of the volume of roundwood products from all sources and the volume of plant byproducts. Appendix tables 37 through 41 present estimates of average annual timber removals and products output from 1987 through 1994. The import and export of harvested wood across State boundaries is commonplace. The average total output includes exports, because it is wood removed from within Florida. For instance, Florida exported 78.6 million cubic feet of wood and imported 117.2 million cubic feet in 1995. Most imports were of pulpwood destined to mills near neighboring State lines.

Products

Florida's total output of timber products, including domestic fuelwood, averaged more than 607 million cubic feet annually between 1987 and 1994 (appendix table 37). Eighty-seven percent of the total output was from roundwood products, and the remainder was processed from plant byproducts. Plant byproducts were processed to produce the remaining timber products. The total output of timber products increased 10 percent over the average annual 552 million cubic feet reported between 1980 and 1986. Softwoods accounted for 87 percent of the TPO between 1987 and 1994, slightly less than the 89 percent recorded between 1980 and 1986, suggesting an increased use of hardwoods.

Pulpwood was the leading timber product in Florida, accounting for 58 percent of total TPO (fig. 24). Pulpwood output averaged 352 million cubic feet annually between 1987 and 1994, with 86 percent from roundwood and 14 percent from plant byproducts. Softwoods constituted 88 percent of the pulpwood volume, and hardwoods made up 12 percent. Pulpwood

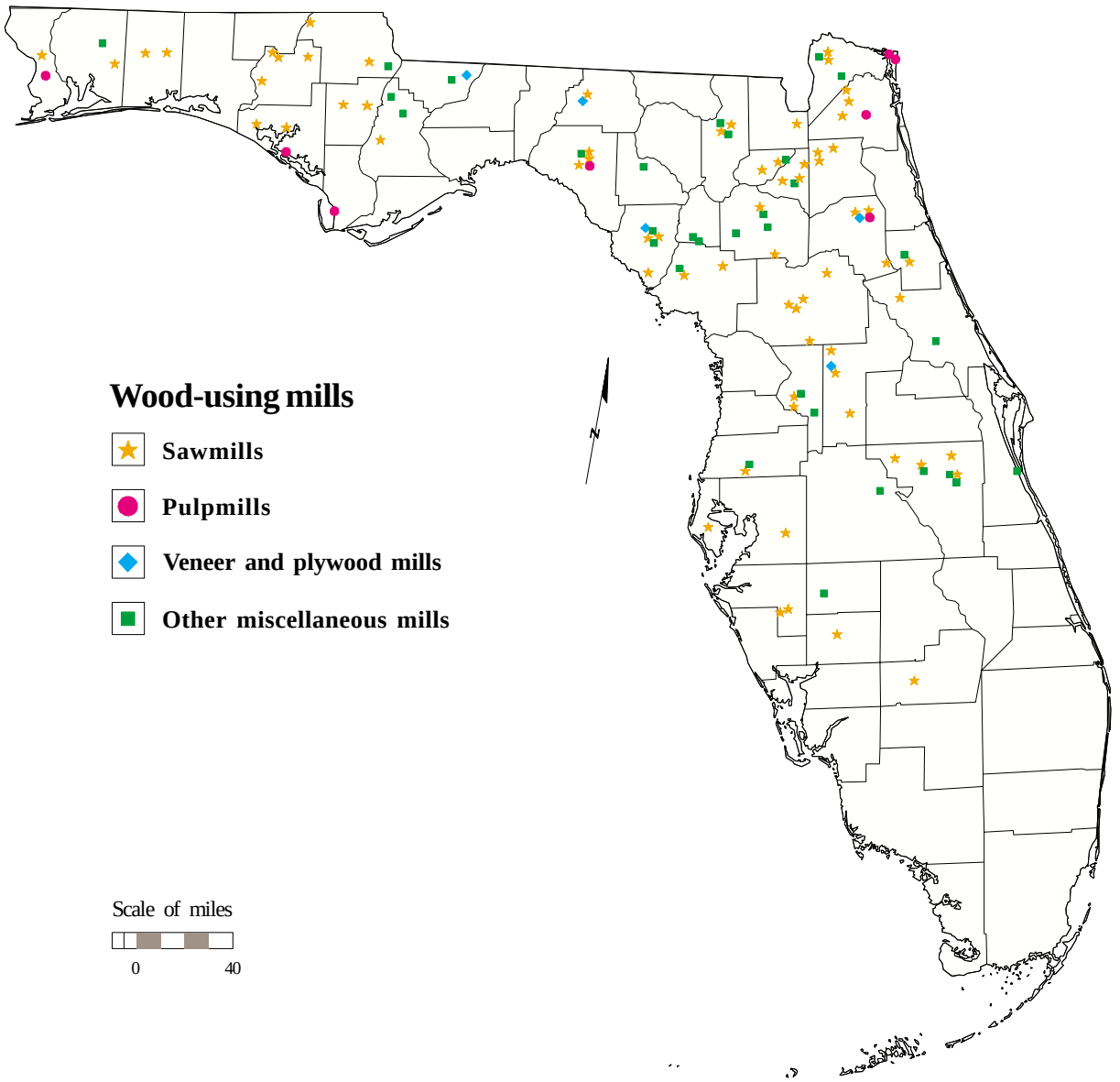


Figure 23—Primary wood-using mills in Florida, 1995 (map created from mill canvas data by J. McCollum, U.S. Department of Agriculture, Forest Service).

production increased significantly each of the last three survey periods (1970 to 1979, 1980 to 1986, and 1987 to 1994).

Saw logs were the second leading timber product from Florida's forests. They made up 24 percent of total TPO, averaging 146 million cubic feet annually between 1987 and 1994. Ninety-nine percent of saw logs came from roundwood, not plant byproducts, and 96 percent of the saw logs were softwoods. Production of saw logs has gradually increased over each of the last three survey periods.

Veneer logs and bolts accounted for 4 percent of Florida's total TPO, 90 percent of which were softwoods. All of the 26.5 million cubic feet of veneer produced annually came from roundwood products. Production of veneer logs has increased over recent survey periods, but is slowing.

Poles and pilings made up 1 percent of total products output, averaging 6.3 million cubic feet annually. All poles and pilings were produced from softwood roundwood. Production of poles and pilings remained fairly constant over the last three surveys. Posts constituted only a fraction of 1 percent of total output. There were 2.3 million cubic feet of posts, which were 92 percent softwood, and all were processed from roundwood. Post production was down slightly from the previous survey period.

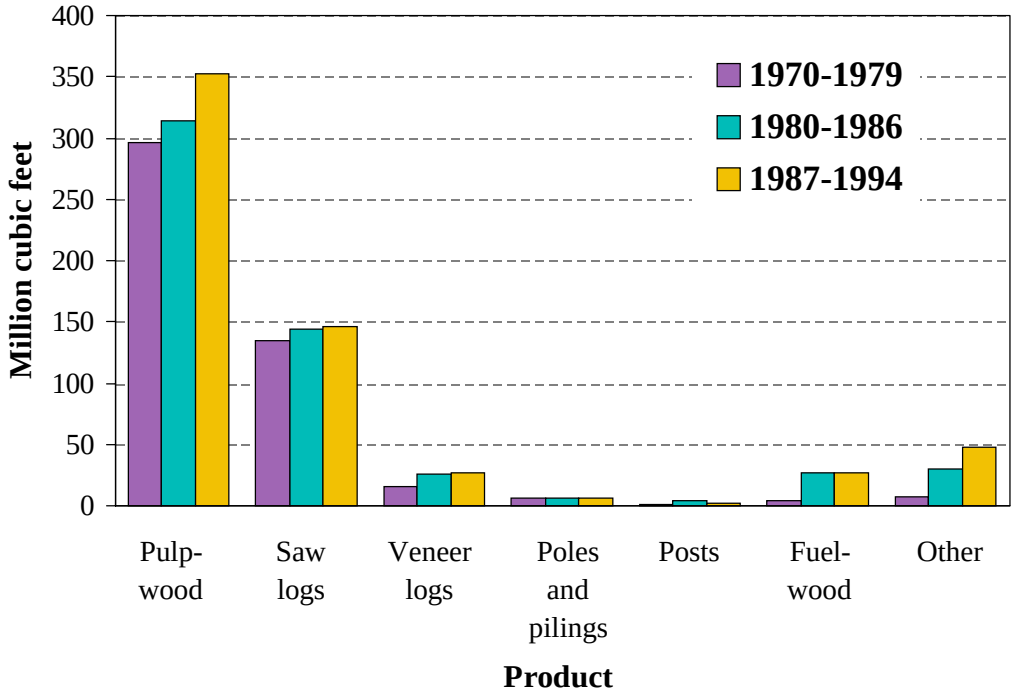


Figure 24—Average annual output of timber products by product, Florida, 1970-1994.

Domestic fuelwood accounted for 4 percent of total output, and averaged 27 million cubic feet annually. Eighty-five percent of fuelwood was hardwood, and all but a fraction was roundwood. Fuelwood production increased during the 1980 to 1986 period, but it leveled off during the 1987 to 1994 period.

Other industrial products, e.g., liter, mulch, particle board, charcoal, and other specialty items, averaged 47.3 million cubic feet annually, or 8 percent of total products output. The average annual production of other products increased by 58 percent from the 1980 to 1986 levels, and increased sixfold from the 1970 to 1979 average.

Photo—Florida Division of Forestry

Pine straw harvest and bales

Photo—Florida Division of Forestry

Seasonally flooded bottomland hardwoods

Timber Supply Outlook

Model

This report has assessed the situation of Florida's timberland in 1995. An assessment of future supplies is even more important in determining if the lumber, paper, and other wood-using industries will maintain their position in Florida's economy.

To project future supplies, the Aggregate Timberland Assessment System (ATLAS) (Mills and Kincaid 1992) model was used. Inputs to run ATLAS included stand volumes based on empirical yield tables, initial timberland acreage by management units and age class, inventory volume, and rates of net annual growth and removals from the 1995 survey. Estimates of future harvest levels were modeled on projected demand scenarios in the 1993 Resources Planning Act (RPA) Timber Assessment Update (Haynes and others 1995). Based on projected demand inputs, the ATLAS model simulates growth, harvest, and regeneration on timberland within each management unit and age class. Future timber inventory was projected for 30 years at 5-year intervals, using 1995 as the base year (Conner and Sheffield, in press).

To project future inventories, the model assumed all nonreserved timberland acres were available for timber production and harvest; although in reality, availability is not certain. Adverse sites (steep or wet), weather (storms, fire, or flooding), small tract sizes, and owner attitudes may limit or preclude logging. Therefore, inventory projections derived from the model will indicate a greater supply of wood than will probably be available for harvest.

Projected demand is based on input assumptions that may turn out to be invalid. Therefore, some outcomes may be different due to changes in demand.

Projected Change in Timberland Area

Change in timberland area by stand type is a major factor controlling current and future inventory levels. The trends up to and including the 1995 data showed a continued decline in the area of natural pine/oak-pine stands and a continued increase in the area of planted pine/oak-pine stands (fig. 25). Projected changes in area by management unit from 1995 to 2025 were taken from "The South's fourth forest: alternatives for the future" (U.S. Department of Agriculture, Forest Service 1988) study. Projected acreage figures were adjusted to coincide with actual values from the 1995 survey. The projections show planted pine/oak-pine stands continuing to increase through 2025, but at a decreasing rate after 2010. Planted pine/oak-pine stands reach almost 6.0 million acres by 2025. Natural pine/oak-pine stands

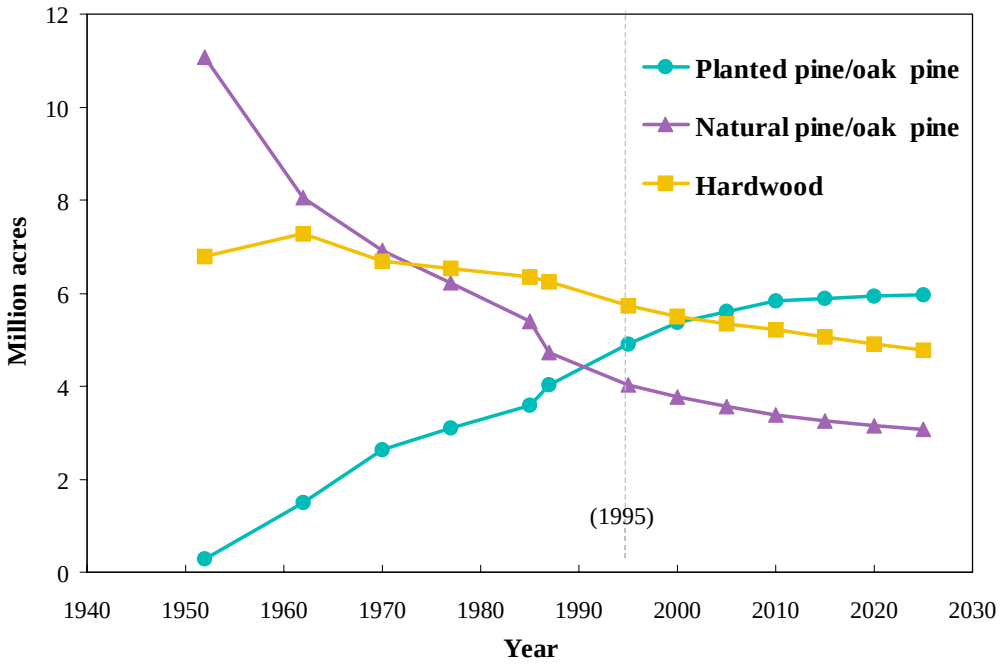


Figure 25—Past trends and projected changes in timberland area by stand type, Florida, 1952-2025.

continue decreasing through 2025, with some slowing in the rate of decrease after 2010. Area of natural pine/oak-pine stands is projected to drop to less than 3.1 million acres by 2025. Hardwood acres are expected to continue a gradual decline over the next three decades. Area of hardwood stands is projected to decline to 4.8 million acres by 2025.

Projected Inventory

The ATLAS model is area-based and, therefore, represents inventory as acres and volume per acre by age class aggregated into inventory units. Two inventory units were identified for the projections: yellow pine species and hardwoods. The hardwood group includes other softwoods, because cypress (the predominant other softwood species) is primarily a component of stands FIA classifies as a hardwood forest type.

Pine inventory is projected to increase throughout the 30-year projection period (1995 to 2025) by 41 percent to 9.8 billion cubic feet (fig. 26). Pine inventory on NIPF land is projected to increase from 2.9 billion cubic feet in 1995 to 4.8 billion cubic feet in 2025. By 2025, 49 percent of the pine volume in Florida will be on NIPF land, up from 42 percent in 1995. On forest industry land, pine volume will fluctuate for 15 years after 1995, then start a downward trend over the next 15 years. By the end of the projection period, pine inventory on industry land will drop from 2.1 billion cubic feet to less than 1.7 billion cubic feet. Proportionately, industry will control just 17 percent of the pine volume in 2025, compared with 30 percent in 1995. On the other hand, the southern yellow pine inventory is expected to increase significantly on public land. Volume on that acreage will increase from less than 2.0 billion cubic feet in 1995 to 3.3 billion in 2025. If these projections are accurate, one-third of the pine volume in Florida will be under public ownership in 30 years.

Total hardwood inventory (including cypress and cedars) is projected to increase gradually from 8.4 to 8.9 billion cubic feet until 2015, then decline slightly to 8.8 billion cubic feet in 2025 (fig.27). More than one-half (54 percent) of the hardwood inventory in 1995 was on NIPF land and remains so over the projection period. However, the NIPF hardwood inventory, after peaking at 4.7 billion cubic feet in 2005, will gradually decrease to 4.4 billion cubic feet by 2025. By then, private landowners will have 50 percent of the hardwood inventory. The other half of Florida's hardwood inventory was equally split between forest industry and public lands, and remains so throughout the projection period. The 1.9 billion cubic feet of hardwood inventory on forest industry land is expected to decrease slightly through 2000, then gradually increase through 2025 to nearly 2.2 billion cubic feet. The 1.9 billion cubic feet of hardwood inventory on public lands is projected to steadily increase through 2025, reaching 2.2 billion cubic feet as well.

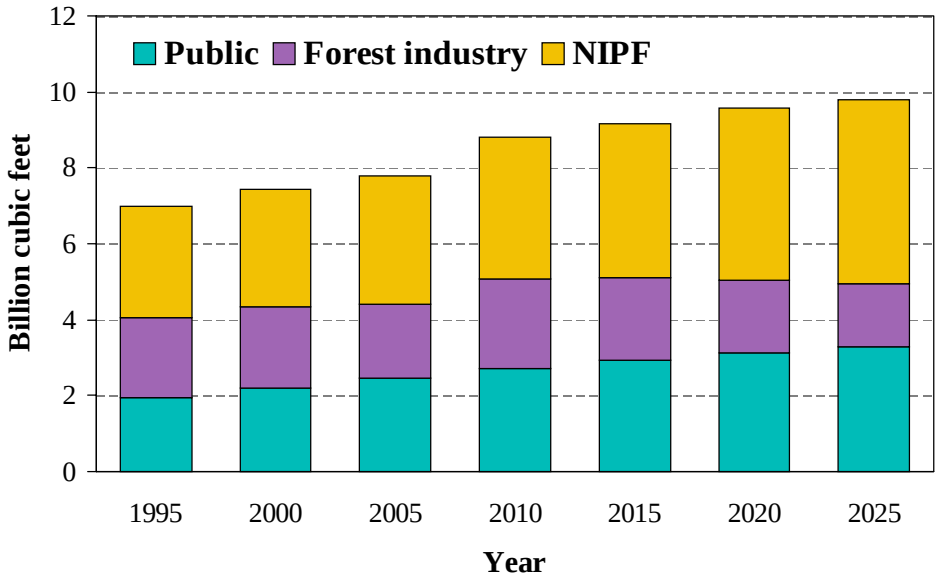


Figure 26—Projected trends in growing-stock volume of southern yellow pines by owner group, Florida, 1995-2025.

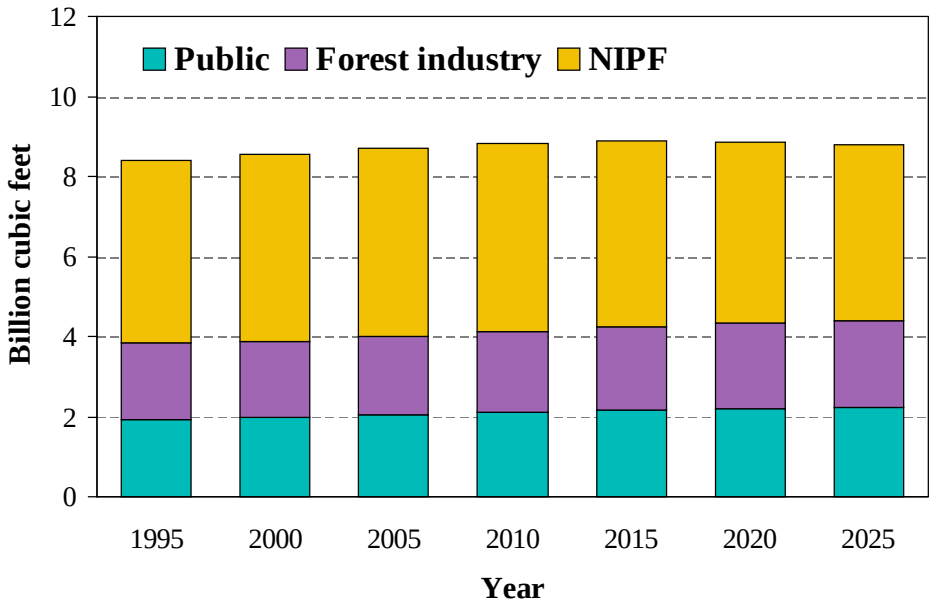


Figure 27—Projected trends in growing-stock volume of hardwoods by owner group, Florida, 1995-2025.

Projected Net Annual Growth and Removals for Pine

Pine net annual growth is expected to increase through 2010, then dip slightly and peak at 603 million cubic feet in 2020, followed by a significant drop to 543 million cubic feet in 2025 (fig. 28). The largest increase occurs between 1995 and 2000, from 489 to 554 million cubic feet. Another sizable increase occurs between 2005 and 2010, from 560 to 600 million cubic feet. Growth exceeds removals throughout the projection period.

Pine removal projections in figure 28 are based on projected changes in softwood removals described in the 1993 RPA Timber Assessment Update (Haynes and others 1995), using 1995 as the base year. The "demand" columns in figure 28 represent projected increases in demand for pine volume. The "removals" column represents volume available for harvest. In ATLAS, availability for harvest is simply a function of stands older than a minimum harvest age. Minimum age varies by ownership and harvest unit. A minimum harvest age of 18 years is required for planted pine/oak-pine stands

on NIPF and forest industry timberland. On these same ownerships, natural pine/oak-pine stands must be 28 years old, and hardwood stands must be at least 38 years old. On public timberland, the minimum harvest ages are 23, 33, and 43 years, respectively. If ample inventory volume exists in stands older than the minimum harvest age, the volume projected to be harvested will equal the anticipated demand.

Pine removals are projected to increase through 2005, but to fall short of demand in 2010. Removal volume recovers after 2010 and through 2020, until a lesser shortfall occurs in 2025. The largest increase in pine removals occurs between 1995 and 2005, rising from 431 to 487 million cubic feet. Pine removals fall to 393 million cubic feet in 2010, but rebound by 2015 and peak at 519 million cubic feet in 2020. The slight drop to 492 million cubic feet in 2025 is still well above 1995 removal levels. Pine removals never exceed net growth; they just fall short of supplying demand from within the State's boundaries in 2010 and 2025. These shortfalls may result from stand-age structures related to decreased planting in the 1990's (fig. 16).

Pine demand is projected to increase through 2020 before declining somewhat (fig. 28). The largest periodic increase in pine demand occurs between 2000 and 2010, rising from 462 to 513 million cubic feet. The demand then levels off through 2020, when it peaks at 519 million cubic feet. Pine demand finally decreases in 2025 to about 500 million cubic feet.

Projected Net Annual Growth and Removals for Hardwoods

Projections for hardwood net annual growth and removals vary greatly from those described for pine. Hardwood net growth decreases steadily throughout the projection period (fig. 29). Hardwood net growth peaked at 204 million cubic feet in 1995 and will reach a low of 146 million cubic feet in 2025. Throughout the 30-year period, growth remains above projected removal levels. However, the gap narrows considerably over time; hardwood net growth approximates removals by 2025.

Hardwood removals are projected to increase through 2000, then remain stable for the remainder of the projection period. Therefore, the only projected increase in hardwood removals is from 129 million cubic feet in 1995 to 144 million cubic feet in 2000. Hardwood removals remain virtually unchanged through 2025 at 142 million cubic feet.

Because of ample supply, hardwood removals meet projected demand throughout the projection period (fig. 29). This scenario could change after 2025, when the excess in growth dissipates. In the meantime, the apparently stable demand for hardwoods hides shifts among ownerships, e.g., demand for hardwoods from NIPF lands increases, as demand for hardwoods from forest industry and public lands decreases. Hardwood demand plateaus at 144 million cubic feet in 2000, then decreases to 142 million cubic feet by 2025.

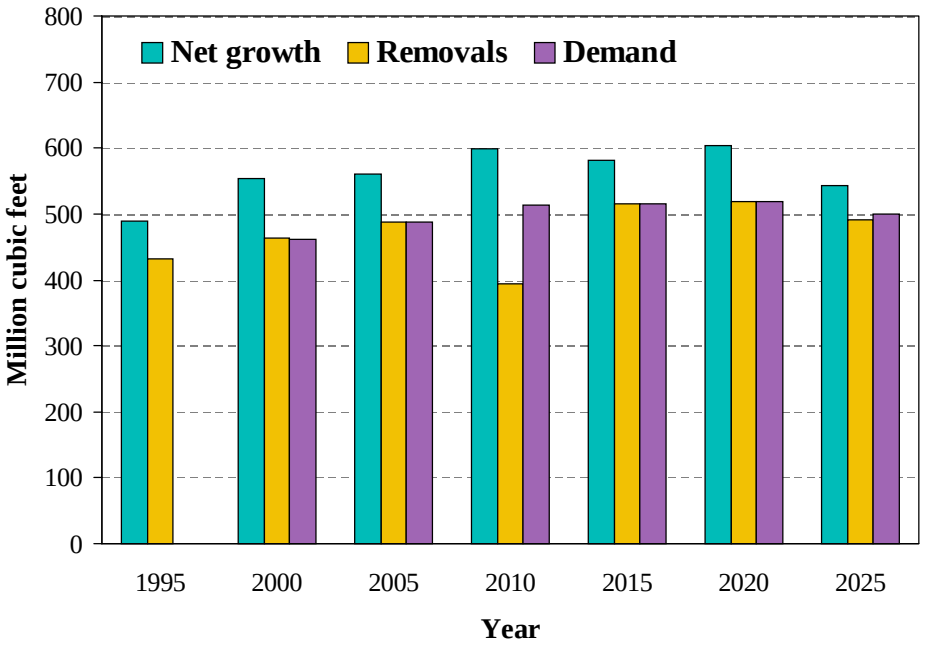


Figure 28—Projected trends in net annual growth, removals, and demand for southern yellow pine growing stock, Florida, 1995-2025.

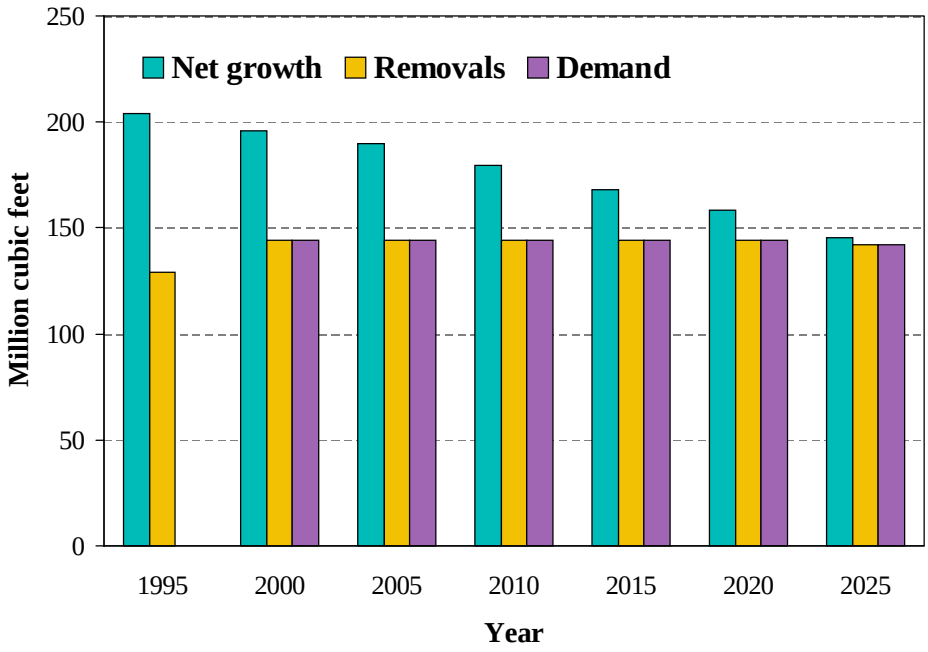


Figure 29—Projected trends in net annual growth, removals, and demand for hardwood growing stock, Florida, 1995-2025.

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Photo—Bill Lea

Live oak *(Quercus virginiana* Mill.*)* hammock

Appendix

Procedure

The procedures used in the seventh Statewide inventory and evaluation of Florida's forest resources included several basic steps.

1. In the Northwest and Northeast units, estimates of forest and nonforest areas were based on the ground classification of 85,107 sample clusters systematically spaced on the latest aerial photographs available. A subsample of 6,513 of the 16-point clusters was ground checked, and a linear regression was fitted to the data to develop the relationship between the photo and ground classification of the subsample. This procedure provides a means for adjusting initial estimates of area for changes in land use since date of photography and for photo misclassification. In the Central and South units, estimates of forest and nonforest areas were based on the ground classification of 6,030 sample clusters systematically distributed across the landscape. At each of the sample clusters, 16 points were classified as to land use.

2. Estimates of timber volume and forest classification were based on measurements recorded at 5,424 ground-sample locations systematically distributed on timberland. The plot design at each location was based on a cluster of 10 points. In most cases, variable plots, established by using a basal-area factor of 37.5 square feet per acre, were systematically spaced within a single forest condition at 5 of the 10 cluster points. Trees less than 5 inches in d.b.h. were tallied on a fixed-radius plot around each point center.

3. Seedlings, shrubs, vines, grasses, forbs, and other lesser vegetation occurring within a 35-foot radius of selected point centers were identified and recorded at each forest sample location. Each distinctive zone of lesser vegetation was classified by height, density, and species composition. When merged with the tree tally, this information provided a vegetative profile of each condition sampled. Additional nontimber attributes measured or classified included land use, terrain features, soils, erosion, litter, water, snags, tree cavities, livestock grazing, and recreational use.

4. Equations prepared from detailed measurements collected on standing trees in Florida, and similar measurements taken throughout the Southeast, were used to compute the volume of individual tally trees. A mirror caliper and sectional aluminum poles were used to obtain the additional measurements required to construct volume equations (Cost 1978). Forest biomass estimates were made with equations developed by the Ecology and Genetics of

Southern Pine Ecosystems Research Work Unit of the Southern Research Station in Athens, GA. In addition, felled trees were measured at 50 active cutting operations to provide utilization factors for the different timber products and species groups, and to supplement the standing-tree volume study.

5. Growth, removals, and mortality were estimated from the remeasurement of 5,591 permanent sample plots established at the time of the sixth inventory. Periodic surveys of timber products output, conducted in cooperation with the Florida Division of Forestry, along with the annual pulpwood production study for the South, provided additional information for breakdowns of removals by product.

6. Ownership information was collected from correspondence, public records, and local contacts. In counties where the sample missed a particular ownership class, temporary samples were added and measured to describe forest conditions within the ownership class.

7. All field data were sent to the Southern Research Station in Asheville for editing and were entered into disk and magnetic tape storage for processing. Final estimates were based on statistical summaries of the data.

Reliability of the Data

Statistical analysis of these data indicates a sampling error of ± 0.40 percent for timberland acreage, 1.65 percent for total growing-stock volume, 1.72 percent for growing-stock growth, and 3.59 percent for growing-stock removals. As the totals are broken down by forest type, species, tree diameter, or other subdivisions, the sampling error increases. If homogeneity of variances is assumed, the order of this increase may be approximated by using the following tabulation, showing the sampling errors in terms of one standard error, or two chances out of three. For example, a subset of the State totals with an estimate of 7.5 billion cubic feet would have an estimated sampling error of 2.37 percent, or 0.18 billion cubic feet. This means that, two times out of three, the true growing-stock volume for this subset would be within the range defined by 7.5 ± 0.18, or from 7.3 to 7.7 billion cubic feet.

Sampling error for selected areas and volumes[a]

Sampling error[b]	Timberland	Volume of growing stock		
		Inventory	Net growth	Removals
Percent	*M acres*	*Million cubic feet*		
1	2,344.5	41,834.2		
2	586.0	10,458.5		
3	260.5	4,648.2	227.7	
4	146.5	2,614.6	128.1	451.7
5	93.8	1,673.4	82.0	289.1
10	23.4	418.3	20.5	72.3
15	10.4	185.9	9.1	32.1
20	5.9	104.5	5.1	18.1
25	3.8	66.9	3.3	11.6

[a] Sampling error of value or area totals in question may be computed with the following formula:

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

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.

[b] By random-sampling formula.

Definitions

Basal area. The area in square feet of the cross section at breast height of a single tree or of all the trees in a stand, usually expressed in square feet per acre.

Biomass. The aboveground green weight of solid wood and bark in live trees 1.0 inch d.b.h. and larger from the ground to the tip of the tree. All foliage is excluded. The weight of wood and bark in lateral limbs, secondary limbs, and twigs under 0.5 inch in diameter at the point of occurrence on sapling-size trees is included but is excluded on poletimber and sawtimber-size trees.

Bole. That portion of a tree between a 1-foot stump and a 4-inch top diameter outside bark (d.o.b.) in trees 5.0 inches d.b.h. and larger.

Broad management class. A classification of timberland based on forest type and stand origin.

Pine plantation. Stands that have been artificially regenerated by planting or direct seeding and with a southern yellow pine, white pine-hemlock, or other softwood forest type.

Natural pine. Stands that have not been artificially regenerated and with a southern yellow pine, white pine-hemlock, or other softwood forest type.

Oak-pine. Stands with a forest type of oak-pine.

Upland hardwood. Stands with a forest type of oak-hickory, chestnut oak, southern scrub oak, or maple-beech-birch.

Lowland hardwood. Stands with a forest type of oak-gum-cypress, elm-ash-cottonwood, palm, or other tropical.

Census water. Streams, sloughs, estuaries, canals, and other moving bodies of water 200 feet wide and greater, and lakes, reservoirs, ponds, and other permanent bodies of water 4.5 acres in area and greater.

Commercial forest land. (see: Timberland).

Commercial species. Tree species currently or potentially suitable for industrial wood products. Noncommercial species are excluded.

Cropland. Land under cultivation within the past 24 months, including orchards and land in soil-improving crops but excluding land cultivated in developing improved pasture. Also includes idle farmland.

D.b.h. Tree diameter in inches (outside bark) at breast height (4.5 feet above the ground).

Diameter class. A classification of trees based on tree d.b.h. Two-inch diameter classes are commonly used by Forest Inventory and Analysis, with the even inch as the approximate midpoint for a class. For example, the 6-inch class includes trees 5.0-6.9 inches d.b.h.

Farm. Land on which agricultural operations are being conducted and sale of agricultural products totaled $1,000 or more during the year.

Farm operator. A person who operates a farm, either doing the work or directly supervising the work.

Farmer-owned land. (see: Other private land).

Forest industry land. Land owned by companies or individuals operating primary wood-using plants.

Forest industry-leased land. Land leased or under management contracts to forest industry from other owners for periods of one forest rotation or longer. Land under cutting contracts is not included.

Forest land. Land at least 16.7 percent stocked by forest trees of any size, or formerly having had such tree cover, and not currently developed for nonforest use.

Forest type. A classification of forest land based on the species forming a plurality of live-tree stocking.

White pine-hemlock. Forests in which eastern white pine, red pine, or jack pine, singly or in combination, constitute a plurality of the stocking. (Common associates include hemlock, birch, and maple.)

Spruce-fir. Forests in which spruce or true firs, singly or in combination, constitute a plurality of the stocking. (Common associates include maple, birch, and hemlock.)

Longleaf-slash pine. Forests in which longleaf or slash pine, singly or in combination, constitute a plurality of the stocking. (Common associates include oak, hickory, and gum.)

Loblolly-shortleaf pine. Forests in which loblolly pine, shortleaf pine, or other southern yellow pines, except longleaf or slash pine, singly or in combination, constitute a plurality of the stocking. (Common associates include oak, hickory, and gum.)

Oak-pine. Forests in which hardwoods (usually upland oaks) constitute a plurality of the stocking but in which pines account for 25 to 50 percent of the stocking. (Common associates include gum, hickory, and yellow-poplar.)

Oak-hickory. Forests in which upland oaks or hickory, singly or in combination, constitute a plurality of the stocking, except where pines account for 5 to 50 percent, in which case the stand would be classified oak-pine. (Common associates include yellow-poplar, elm, maple, and black walnut.)

Oak-gum-cypress. Bottom-land forests in which tupelo, blackgum, sweetgum, oaks, or southern cypress, singly or in combination, constitue a plurality of the stocking, except where pines account for 25 to 50 percent, in which case the stand would be classified oak-pine. (Common associates include cottonwood, willow, ash, elm, hackberry, and maple.)

Elm-ash-cottonwood. Forests in which elm, ash, or cottonwood, singly or in combination, constitute a plurality of the stocking. (Common associates include willow, sycamore, beech, and maple.)

Maple-beech-birch. Forests in which maple, beech, or yellow birch, singly or in combination, constitute a plurality of the stocking. (Common associates include hemlock, elm, basswood, and white pine.)

Palm, other tropicals. Forests in which palms and other tropicals constitute a plurality of the stocking.

Gross growth. Annual increase in merchantable volume of trees in the absence of cutting and mortality. (Gross growth includes survivor growth, ingrowth, growth on ingrowth, growth on removals prior to removal, and growth on mortality prior to death.)

Growing-stock trees. Live sawtimber-size trees of commercial species containing at least a 12-foot log, or two noncontiguous saw logs each 8 feet or longer, meeting minimum grade requirements (hardwoods must qualify as a log grade of either 3 or 4; softwoods must qualify as a log grade 3) with at least one-third of the gross board-foot volume (International 1/4-inch rule) between a 1-foot stump and the minimum saw-log top being sound, or a live tree below sawtimber size that will prospectively qualify under the above standards.

Growing-stock volume. Volume (cubic feet) of solid wood in growing-stock trees 5.0 inches d.b.h. and larger, from a 1-foot stump to a minimum 4.0-inch top diameter, outside bark, on the central stem. Volume of solid wood in primary forks from the point of occurrence to a minimum 4.0-inch top diameter outside bark is included.

Hardwoods. Angiosperms; dicotyledonous trees (including all palm species which are monocotyledonous), usually broadleaf and deciduous.

Soft hardwoods. Soft-textured hardwoods such as boxelder, red and silver maples, hackberry, loblolly-bay, sweetgum, yellow-poplar, magnolia, sweetbay, water tupelo, blackgum, sycamore, cottonwood, black cherry, willow, basswood, and elm.

Hard hardwoods. Hard-textured hardwoods such as sugar maple, birch, hickory, dogwood, persimmon (forest grown), black locust, beech, ash, honeylocust, holly, black walnut, mulberry, and all commercial oaks.

Idle farmland. Cropland, orchard, improved pasture, and farm sites not tended within the past 2 years, and currently less than 16.7 percent stocked with live trees.

Improved pasture. Land currently improved for grazing by cultivation, seeding, irrigation, or clearing of trees or brush.

Industrial wood. All roundwood products except fuelwood.

Ingrowth. The number or net volume of trees that grow large enough during a specified year to qualify as saplings, poletimber, or sawtimber.

Land area. The area of dry land and land temporarily or partly covered by water such as marshes, swamps, and river floodplains (omitting tidal flats below mean high tide), streams, sloughs, estuaries, and canals less than 200 feet wide, and lakes, reservoirs, and ponds less than 4.5 acres in area.

Live trees. All trees 1.0 inch d.b.h. and larger which are not dead at the time of inventory.

Live-tree volume. Volume (cubic feet) of wood above the ground line in live trees 1.0 inch d.b.h. and larger. The volume in twigs and lateral limbs smaller than 0.5 inch in diameter at the point of occurrence on sapling-size trees is included but is excluded on poletimber and sawtimber-size trees.

Log grade. A classification of logs based on external characteristics as indicators of quality or value.

Logging residues. The unused merchantable portion of growing-stock trees cut or destroyed during logging operations.

Manageable stand. Timberland at least 60 percent stocked with growing-stock trees that can be featured together under a management scheme.

Merchantable portion. That portion of live trees 5.0 inches d.b.h. and larger between a 1-foot stump and a minimum 4.0-inch top diameter outside bark on the central stem. That portion of primary forks from the point of occurrence to a minimum 4.0-inch top diameter outside bark is included.

Merchantable volume. Solid-wood volume in merchantable portion of live trees.

Miscellaneous Federal land. Federal land other than National forests, land administered by the Bureau of Land Management, and land administered by the Bureau of Indian Affairs.

Miscellaneous private land. (see: Other private land).

Mortality. The merchantable volume in trees that have died from natural causes during a specified period.

National forest land. Federal land that has been legally designated as national forests or purchase units, and other land under the administration of the Forest Service, including experimental areas and Bankhead-Jones Title III land.

Net annual growth. The net change in merchantable volume for a specific year in the absence of cutting (gross growth minus mortality for that specified year).

Net volume. Gross volume of wood less deductions for rot, sweep, or other defect affecting use for timber products.

Noncommercial species. Tree species of typically small size, poor form, or inferior quality which normally do not develop into trees suitable for industrial wood products.

Nonforest land. Land that has never supported forests and land formerly forested where timber production is precluded by development for other uses.

Nonindustrial private forest (NIPF) land. (see: Other private land).

Nonstocked forest land. Timberland less than 16.7 percent stocked with growing-stock trees.

Other forest land. Forest land other than timberland and productive forest land. It includes available and reserved forest land which is incapable of producing annually 20 cubic feet per acre of industrial wood under natural conditions, because of adverse site conditions such as sterile soils, dry climate, poor drainage, high elevation, steepness, or rockiness.

Other private land. Privately owned land excluding forest industry land or forest industry-leased land. Also referred to as nonindustrial private forest (NIPF) land.

Farmer-owned land. Owned by farm operators, excluding incorporated farm ownerships.

Other individual land. Owned by individuals other than farm operators.

Other corporate land. Owned by corporations, including incorporated farm ownerships.

Other removals. The growing-stock volume of trees removed from the inventory by cultural operations such as timber stand improvement, land clearing, and other changes in land use that result in the removal of the trees from timberland.

Plant residues. Wood material generated in the production of timber products at primary manufacturing plants.

Coarse residues. Material, such as slabs, edgings, trim, veneer cores and ends, which is suitable for chipping.

Fine residues. Material, such as sawdust, shavings, and veneer chippings, which is not suitable for chipping.

Plant byproducts. Residues (coarse or fine) utilized in the further manufacture of industrial products or for consumer use, or utilized as fuel.

Unused plant residues. Residues (coarse or fine) that are not used for any product, including fuel.

Poletimber-size trees. Live trees at least 5.0 inches d.b.h. but smaller than sawtimber size.

Primary wood-using plants. Industries that receive roundwood or chips from roundwood for the manufacture of products such as veneer, pulp, and lumber.

Productive-reserved forest land. (see: Reserved timberland).

Rangeland. Land on which the natural vegetation is predominantly native grasses, grasslike plants, forbs, or shrubs valuable for forage, not qualifying as timberland and not developed for another land use. Rangeland includes natural grassland and savannah.

Reserved timberland. Forest land sufficiently productive to qualify as timberland, but withdrawn from timber utilization through statute or administrative designation.

Rotten trees. Live trees of commercial species that do not contain at least one 12-foot saw log, or two noncontiguous saw logs, each 8 feet or longer, now or prospectively, primarily because of rot or missing sections, and with less than one-third of the gross board-foot tree volume in sound material.

Rough trees. Live trees of commercial species that do not contain at least one 12-foot saw log, or two noncontiguous saw logs, each 8 feet or longer, now or prospectively, primarily because of roughness, poor form, splits, and cracks, and with less than one-third of the gross board-foot tree volume in sound material; and live trees of noncommercial species.

Roundwood (roundwood logs). Logs, bolts, or other round sections cut from trees for industrial or consumer uses.

Roundwood chipped. Any timber cut primarily for pulpwood, delivered to nonpulpmills, chipped, and then sold to pulpmills as residues, including chipped tops, jump sections, whole trees, and pulpwood sticks.

Roundwood products. Any primary product such as lumber, poles, pilings, pulp, or fuelwood which is produced from roundwood.

Salvable dead trees. Standing or down dead trees considered utilizable by Forest Inventory and Analysis standards.

Saplings. Live trees 1.0 to 5.0 inches d.b.h.

Saw log. A log meeting minimum standards of diameter, length, and defect, including logs at least 8 feet long, sound and straight, and with a minimum diameter inside bark for softwoods of 6 inches (8 inches for hardwoods).

Saw-log portion. That part of the bole of sawtimber trees between a 1-foot stump and the saw-log top, including the portion of forks large enough to contain a saw log.

Saw-log top. The point on the bole of sawtimber trees above which a conventional saw log cannot be produced. The minimum saw-log top is 7.0 inches in diameter outside bark (d.o.b.) for softwoods and 9.0 inches (d.o.b.) for hardwoods.

Sawtimber-size trees. Softwoods 9.0 inches d.b.h. and larger and hardwoods 11.0 inches d.b.h. and larger.

Sawtimber volume. Growing-stock volume in the saw-log portion of sawtimber-size trees in board feet (International 1/4-inch rule).

Seedlings. Trees less than 1.0 inch in d.b.h. Only seedlings of a commercial species that are not overtopped and are more than 6 inches tall for softwoods and 1 foot tall for hardwoods are counted.

Site class. A classification of forest land in terms of inherent capacity to grow crops of industrial wood based on fully stocked natural stands, by annual production capacity.

Softwoods. Gymnosperms; in the order Coniferales, usually evergreen (includes the genus *Taxodium* which is deciduous), having needles or scalelike leaves.

Pines. Yellow pine species which include loblolly, longleaf, slash, pond, shortleaf, pitch, Virginia, sand, spruce, and Table Mountain pines.

Other softwoods. Cypress, eastern redcedar, white cedar, eastern white pine, eastern hemlock, spruce, and fir.

Stand-size class. A classification of forest land based on the diameter class distribution of live trees in the stand.

Sawtimber stands. Stands at least 16.7 percent stocked with live trees, with half or more of total stocking in sawtimber and poletimber trees, and with sawtimber stocking at least equal to poletimber stocking.

Poletimber stands. Stands at least 16.7 percent stocked with live trees, of which half or more of total stocking is in poletimber and sawtimber trees, and with poletimber stocking exceeding that of sawtimber.

Sapling-seedling stands. Stands at least 16.7 percent stocked with live trees of which more than half of total stocking is saplings and seedlings.

State, county, and municipal land. Land owned by States, counties, and local public agencies or municipalities, or land leased to these governmental units for 50 years or more.

Stocking. The degree of occupancy of land by trees, measured by basal area or the number of trees in a stand and spacing in the stand, compared with a minimum standard, depending on tree size, required to fully utilize the growth potential of the land.

Fully stocked. 100 percent or more stocking.

Medium stocked. 60 to 99 percent stocking.

Poorly stocked. Less than 60 percent stocking.

Density of trees and basal area per acre required for full stocking

D.b.h. class	Trees per acre for full stocking	Basal area per acre
Seedlings	600	—
2	560	—
4	460	—
6	340	67
8	240	84
10	155	85
12	115	90
14	90	96
16	72	101
18	60	106
20	51	111

Survivor growth. The merchantable volume increment on trees 5.0 inches d.b.h. and larger in the inventory at the beginning of the year and surviving to its end.

Timberland. Forest land that is capable of producing 20 cubic feet of industrial wood per acre per year and not withdrawn from timber utilization.

Timber products. Roundwood products and byproducts.

Timber removals. The merchantable volume of trees removed from the inventory by harvesting, cultural operations such as stand improvement, land clearing, or changes in land use.

Top. The portion of the main stem and forks from a 4.0-inch diameter outside bark to the tips of the main stem and forks, plus all other limbs above the 4.0-inch top at least 0.5 inch in diameter at their point of occurrence.

Treatment opportunity. A classification of the management or treatment that would most improve for timber production the existing condition of the stand being sampled.

Tree. Woody plants having one erect perennial stem or trunk at least 3 inches d.b.h., a more or less definitely formed crown of foliage, and a height of at least 13 feet.

Tree grade. A classification of sawtimber trees based on the log grade of the butt log in the tree.

Upper-stem portion. That part of the main stem or fork of sawtimber trees above the saw-log top to minimum top diameter 4.0 inches outside bark or to the point where the main stem or fork breaks into limbs.

Urban and other areas. Areas developed for residential, industrial, or recreational purposes, school yards, cemeteries, roads, railroads, airports, beaches, powerlines and other rights-of-way, or other nonforest land not included in any other specified land use class.

Conversion Factors

Cubic feet of wood per average cord (excluding bark)

D.b.h. class	All species	Pine	Other softwood	Hardwood
6	61.4	61.0	68.2	60.0
8	69.3	68.1	76.0	68.4
10	74.5	73.1	81.4	73.4
12	77.9	76.7	85.2	76.4
14	80.3	79.4	88.2	78.4
16	81.9	81.6	90.4	79.8
18	83.0	83.3	92.3	80.8
20	83.8	84.8	93.8	81.5
22	84.4	86.0	95.1	82.1
24+	84.8	87.7	98.0	83.2
Average	74.5	72.0	82.5	74.5

Rough cord per thousand cubic feet (without bark) =

$$a + b\left(\frac{1}{d.b.h.}\right) + c\left(\frac{1}{d.b.h.}\right)^2$$

Where	pine	other softwoods	hardwoods
a =	10.01850	9.15960	11.68410
b =	34.42135	28.75973	3.74431
c =	22.73994	25.54418	157.39417

Metric equivalents of units used in this report

1 acre = 4,046.86 square meters or 0.404686 hectare
1 cubic foot = 0.028317 cubic meter
1 inch = 2.54 centimeters or 0.0254 meter
Breast height = 1.4 meters aboveground level
1 square foot = 929.03 square centimeters or 0.0929 square meter
1 square foot per acre basal area = 0.229568 square meter per hectare
1 pound = 0.454 kilogram
1 ton = 0.907 metric ton

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Table 1—Area by land class, Florida, 1995

Land class	Area
	Thousand acres
Forest land	
Timberland	14,650.7
Reserved timberland	522.7
Other	1,047.9
Total	16,221.2
Nonforest land	
Cropland	3,616.3
Pasture and range	5,925.7
Other[a]	8,794.9
Total	18,336.9
All land[b]	34,558.1

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

[a] Includes swampland, industrial and urban areas, other nonforest land, and 153.1 thousand acres classed as water by Forest Inventory and Analysis standards but defined by Bureau of Census as land.

[b] From the U.S. Bureau of Census, 1990.

Table 2—Area of timberland by ownership class, Florida, 1995

Ownership class	Area
	Thousand acres
National forest	1,029.5
Other Federal	
Bureau of Land Management	—
Miscellaneous Federal	586.5
Total	586.5
State	1,138.3
County and municipal	77.5
Forest industry	4,015.5
Forest industry-leased	586.0
Other private	
Farmer	994.8
Other individual	3,592.9
Other corporate	2,629.8
Total	7,217.4
All ownerships	14,650.7

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Table 3—Area of timberland by stand-size and ownership classes, Florida, 1995

		Ownership class				
Stand-size class	All ownerships	National forest	Other public	Forest industry	Forest industry-leased	Other private
			Thousand acres			
Sawtimber	4,786.7	409.6	879.6	888.1	89.2	2,520.2
Poletimber	4,024.0	242.3	419.1	1,191.6	274.2	1,896.8
Sapling-seedling	5,412.3	348.7	462.7	1,804.1	205.1	2,591.6
Nonstocked	427.7	28.9	40.8	131.6	17.5	208.8
All classes	14,650.7	1,029.5	1,802.3	4,015.5	586.0	7,217.4

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

Table 4—Area of timberland by stand-volume and ownership classes, Florida, 1995

Stand-volume class	All ownerships	Ownership class				
		National forest	Other public	Forest industry	Forest industry-leased	Other private
Board feet/acre [a]			*Thousand acres*			
Less than 2,000	8,908.8	542.8	776.7	2,862.0	393.1	4,334.3
2,000 - 3,999	1,772.5	147.7	265.5	376.9	79.2	903.2
4,000 - 5,999	1,149.2	108.8	156.6	234.9	43.3	605.6
6,000 - 7,999	876.5	57.0	182.4	161.2	33.9	442.0
8,000 - 9,999	658.6	68.5	128.7	140.8	19.0	301.5
10,000 or more	1,285.0	104.7	292.4	239.7	17.4	630.8
All classes	14,650.7	1,029.5	1,802.3	4,015.5	586.0	7,217.4

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

[a] International 1/4-inch rule.

Table 5—Area of timberland by stocking class of growing-stock trees and ownership class, Florida, 1995

Stocking class	All ownerships	Ownership class				
		National forest	Other public	Forest industry	Forest industry-leased	Other private
			Thousand acres			
Overstocked	749.3	26.8	130.2	254.2	27.4	310.8
Fully stocked	3,330.8	228.5	291.4	1,040.3	222.5	1,548.1
Moderately stocked	5,547.2	416.2	641.6	1,654.5	248.0	2,586.8
Poorly stocked	3,670.1	282.6	562.1	806.1	57.2	1,962.0
Nonstocked	1,353.3	75.4	177.0	260.4	30.9	809.7
All classes	14,650.7	1,029.5	1,802.3	4,015.5	586.0	7,217.4

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

Table 6—Area of timberland by site and ownership classes, Florida, 1995

Site class	All ownerships	Ownership class				
		National forest	Other public	Forest industry	Forest industry-leased	Other private
Ft^3*/acre/year*			*Thousand acres*			
> 164	18.6	2.1	1.9	—	—	14.6
120-164	187.3	11.6	49.5	51.2	3.2	71.8
85-119	1,944.3	111.0	160.1	629.3	114.9	929.0
50-84	8,702.1	578.9	971.1	2,490.7	429.4	4,232.0
20-49	3,798.3	326.0	619.6	844.3	38.4	1,970.1
All classes	14,650.7	1,029.5	1,802.3	4,015.5	586.0	7,217.4

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Table 7—Area of timberland by forest type and site index class, Florida, 1995

Forest type	All classes	Site index class (50-year base)							
		< 50	50-59	60-69	70-79	80-89	90-99	100-109	110-119	> 119
	Thousand acres									
Softwood types										
Longleaf pine	740.5	2.7	244.5	221.9	182.5	78.2	10.7	—	—	—
Slash pine	5,130.9	70.5	451.5	1,468.5	2,106.3	856.4	159.0	18.8	—	—
Loblolly pine	807.3	2.5	21.9	160.5	351.4	158.6	77.2	33.3	1.9	—
Shortleaf pine	16.9	—	—	2.7	8.5	2.9	2.9	—	—	—
Sand pine	633.8	10.0	182.6	286.9	133.1	16.3	5.0	—	—	—
Pond pine	108.5	2.7	43.1	32.4	27.9	2.4	—	—	—	—
Total	7,437.8	88.4	943.5	2,172.8	2,809.6	1,114.9	254.7	52.1	1.9	—
Hardwood types										
Oak–pine	1,479.0	28.5	379.3	398.6	401.8	200.9	57.9	12.0	—	—
Oak–hickory	1,437.9	8.1	175.3	453.9	491.1	259.3	44.2	2.6	3.2	—
Southern scrub oak	575.5	16.3	363.8	142.2	50.4	2.9	—	—	—	—
Oak–gum–cypress	3,678.5	34.0	579.1	1,385.5	1,213.8	344.7	104.5	11.2	5.8	—
Elm–ash–cottonwood	42.0	—	4.9	18.5	7.9	2.9	7.8	—	—	—
Total	7,212.9	87.0	1,502.3	2,398.7	2,165.0	810.7	214.4	25.9	8.9	—
All types	14,650.7	175.3	2,445.8	4,571.5	4,974.6	1,925.5	469.0	78.0	10.9	—

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Table 8—Area of timberland by forest type and ownership class, Florida, 1995

Forest type	All ownerships	Ownership class				
		National forest	Other public	Forest industry	Forest industry-leased	Other private
	Thousand acres					
Softwood types						
Longleaf pine	740.5	175.8	225.4	72.7	—	266.6
Slash pine	5,130.9	328.6	425.3	1,994.1	347.2	2,035.6
Loblolly pine	807.3	7.1	23.9	299.0	22.4	454.9
Shortleaf pine	16.9	—	—	9.1	—	7.8
Sand pine	633.8	187.6	95.9	162.8	—	187.5
Pond pine	108.5	26.4	7.9	14.6	—	59.7
Total	7,437.8	725.5	778.4	2,552.3	369.6	3,012.1
Hardwood types						
Oak–pine	1,479.0	82.9	222.7	295.6	45.4	832.5
Oak–hickory	1,437.9	14.2	106.0	160.2	32.5	1,125.0
Southern scrub oak	575.5	33.8	100.6	29.8	7.9	403.4
Oak–gum–cypress	3,678.5	173.1	589.3	960.8	130.7	1,824.5
Elm–ash–cottonwood	42.0	—	5.2	16.8	—	20.0
Total	7,212.9	304.1	1,023.9	1,463.2	216.4	4,205.3
All types	14,650.7	1,029.5	1,802.3	4,015.5	586.0	7,217.4

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Table 9—Area of timberland by forest type and stand-size class, Florida, 1995

Forest type	All stands	Stand-size class			
		Sawtimber	Poletimber	Sapling-seedling	Nonstocked areas
		Thousand acres			
Softwood types					
Longleaf pine	740.5	402.7	77.8	234.9	25.1
Slash pine	5,130.9	929.4	1,895.6	2,080.1	225.6
Loblolly pine	807.3	164.8	223.6	419.0	—
Shortleaf pine	16.9	7.8	2.7	6.4	—
Sand pine	633.8	95.1	205.2	323.8	9.6
Pond pine	108.5	54.9	32.3	18.3	3.0
Total	7,437.8	1,654.7	2,437.2	3,082.5	263.3
Hardwood types					
Oak–pine	1,479.0	457.0	267.8	738.5	15.7
Oak–hickory	1,437.9	631.0	287.6	497.1	22.2
Southern scrub oak	575.5	20.4	62.3	482.6	10.2
Oak–gum–cypress	3,678.5	2,012.9	957.2	592.3	116.2
Elm–ash–cottonwood	42.0	10.7	12.0	19.3	—
Total	7,212.9	3,132.0	1,586.8	2,329.8	164.3
All types	14,650.7	4,786.7	4,024.0	5,412.3	427.7

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Table 10—Area of timberland by forest-type group, detailed forest type, and survey unit, Florida, 1995

Forest type-group and detailed forest type	State	Northeast	Northwest	Central	South
			Thousand acres		
Longleaf–slash					
Longleaf pine	740.5	190.9	434.3	109.5	5.7
Slash pine	5,130.9	2,776.4	1,811.0	392.1	151.3
Total	5,871.3	2,967.4	2,245.3	501.6	157.0
Loblolly–shortleaf					
Loblolly pine	807.3	282.2	520.0	5.1	—
Shortleaf pine	16.9	—	16.9	—	—
Sand pine	633.8	264.4	291.3	75.2	2.9
Pond pine	108.5	35.6	32.1	40.8	—
Total	1,566.4	582.1	860.4	121.1	2.9
Total, all softwoods	7,437.8	3,549.5	3,105.7	622.7	159.9
Oak–pine					
Eastern redcedar–hardwood	10.1	7.5	—	2.7	—
Longleaf pine–scrub oak	392.9	91.5	211.6	89.8	—
Shortleaf pine–oak	15.9	—	15.9	—	—
Loblolly pine–hardwood	292.2	136.8	144.8	10.6	—
Slash pine–hardwood	594.6	268.9	224.9	79.9	20.9
Other oak–pine	173.3	77.7	54.4	38.2	2.9
Total	1,479.0	582.4	651.6	221.2	23.7
Oak–hickory					
Post oak–black oak	2.4	—	2.4	—	—
White oak–red oak–hickory	19.0	7.9	2.8	8.2	—
Yellow-poplar–white oak–n. red oak	2.4	—	2.4	—	—
Southern scrub oak	575.5	251.1	188.4	133.2	2.8
Sweetgum–yellow-poplar	102.4	54.1	39.9	8.4	—
Mixed hardwood	1,311.7	583.0	386.8	319.3	22.7
Total	2,013.3	896.1	622.7	469.1	25.5
Oak–gum–cypress					
Swamp chestnut oak–cherrybark oak	4.3	2.9	1.4	—	—
Sweetgum–water oak–willow oak	616.9	344.3	209.2	57.8	5.7
Sugarberry–elm–green ash	192.5	88.1	36.7	64.9	2.8
Overcup oak–water hickory	24.7	3.8	20.9	—	—
Atlantic white cedar	37.2	—	37.2	—	—
Cypress–water tupelo	1,129.2	382.5	252.1	331.2	163.4
Sweetbay–blackgum–red maple	1,436.6	629.1	535.9	254.7	16.8
Total	3,441.3	1,450.7	1,093.4	708.5	188.7
Elm–ash–cottonwood					
River birch–sycamore	13.1	—	13.1	—	—
Willow	26.0	17.2	4.6	4.2	—
Sycamore–pecan–elm	2.9	2.9	—	—	—
Total	42.0	20.1	17.7	4.2	—
Palm–other tropical					
Palm	210.1	58.3	2.4	90.1	59.3
Other tropical	27.2	—	—	7.5	19.6
Total	237.2	58.3	2.4	97.6	78.9
Total, all hardwoods	7,212.9	3,007.6	2,387.7	1,500.7	316.9
All types	14,650.7	6,557.1	5,493.4	2,123.4	476.7

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Table 11—Area of timberland by stand-age class and forest management type, all ownerships, Florida, 1995

Stand-age class	All classes	Forest management type: Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
Years			*Thousand acres*			
0-10	2,935.9	2,059.9	257.7	277.0	206.8	134.5
11-20	1,980.7	1,404.6	241.7	132.1	112.7	89.6
21-30	1,249.0	807.0	192.0	55.8	72.7	121.5
31-40	807.1	255.8	275.4	61.1	36.3	178.5
41-50	915.3	25.0	373.7	100.7	80.6	335.4
51-60	890.4	6.9	291.6	96.7	85.1	410.1
61-70	736.4	—	189.3	55.8	54.0	437.3
71-80	482.8	2.6	56.5	26.4	42.3	355.1
81+	681.4	—	43.1	55.6	73.7	509.0
No manageable stand	3,971.7	72.1	883.2	617.7	1,249.1	1,149.6
All classes	14,650.7	4,633.7	2,804.1	1,479.0	2,013.3	3,720.5

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Table 12—Area of timberland by stand-age class and forest management type, public ownerships, Florida, 1995

Stand-age class	All classes	Forest management type: Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
Years			*Thousand acres*			
0-10	253.5	133.0	52.8	40.0	9.2	18.6
11-20	245.8	169.4	44.7	11.2	16.2	4.3
21-30	200.2	137.5	36.1	9.4	3.2	14.0
31-40	167.3	45.6	88.1	7.5	—	26.1
41-50	212.5	14.9	137.5	17.3	4.2	38.5
51-60	271.8	2.1	172.1	16.6	—	81.0
61-70	277.1	—	130.7	17.3	2.7	126.4
71-80	143.7	—	41.2	2.7	—	99.9
81+	215.5	—	37.9	10.4	10.1	157.0
No manageable stand	844.3	19.0	241.3	173.1	209.0	202.0
All classes	2,831.8	521.5	982.4	305.6	254.7	767.7

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Table 13—Area of timberland by stand-age class and forest management type, forest industry ownerships,[a] Florida, 1995

Stand-age class	All classes	Forest management type: Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
Years			*Thousand acres*			
0-10	1,321.4	1,100.3	44.2	83.6	42.1	51.2
11-20	946.8	794.1	36.0	57.4	14.5	44.8
21-30	521.3	449.1	19.3	13.5	4.7	34.7
31-40	201.5	102.8	33.8	10.9	5.7	48.2
41-50	220.2	5.6	71.0	22.0	8.4	113.2
51-60	195.4	2.4	30.2	36.3	2.6	123.9
61-70	169.0	—	27.3	11.1	14.3	116.4
71-80	98.4	2.6	5.4	3.2	10.6	76.6
81+	133.1	—	2.6	14.7	3.0	112.9
No manageable stand	794.2	25.2	170.1	88.3	124.3	386.4
All classes	4,601.5	2,482.0	439.9	341.0	230.3	1,108.3

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

[a] Includes 586.0 thousand acres of other private land under long-term lease.

Table 14—Area of timberland by stand-age class and forest management type, other private ownerships,[a] Florida, 1995

Stand-age class	All classes	Forest management type: Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
Years			*Thousand acres*			
0-10	1,360.9	826.6	160.7	153.4	155.5	64.7
11-20	788.1	441.2	160.9	63.6	82.0	40.5
21-30	527.5	220.4	136.6	32.9	64.8	72.8
31-40	438.2	107.3	153.4	42.6	30.6	104.2
41-50	482.5	4.5	165.1	61.3	68.0	183.6
51-60	423.2	2.4	89.3	43.8	82.5	205.2
61-70	290.2	—	31.2	27.5	37.0	194.5
71-80	240.7	—	10.0	20.5	31.6	178.6
81+	332.8	—	2.6	30.5	60.6	239.1
No manageable stand	2,333.2	27.9	471.9	356.4	915.8	561.2
All classes	7,217.4	1,630.3	1,381.8	832.5	1,528.3	1,844.5

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

[a] Excludes 586.0 thousand acres of other private land under long-term lease.

Table 15—Basal area per acre of live trees 5.0 inches d.b.h. and larger by forest management type, species group, and ownership class, Florida, 1995

Forest management type and species group	All ownerships	Ownership class: National forest	Other public	Forest industry	Forest industry-leased	Other private
		Square feet				
Pine plantation						
Softwood	35.3	22.7	46.8	34.7	40.5	35.8
Hardwood	1.3	1.2	2.0	1.0	0.9	1.5
Total	36.5	24.0	48.9	35.7	41.5	37.3
Natural pine						
Softwood	46.2	54.3	52.2	41.6	41.6	42.4
Hardwood	6.3	4.7	8.1	6.0	12.7	6.0
Total	52.5	59.0	60.3	47.7	54.3	48.4
Oak–pine						
Softwood	25.4	22.6	31.9	29.0	20.9	22.8
Hardwood	24.2	11.7	18.3	22.9	26.8	27.6
Total	49.6	34.3	50.1	51.9	47.8	50.4
Upland hardwood						
Softwood	3.7	4.7	5.4	3.0	2.7	3.6
Hardwood	40.9	12.9	40.4	28.9	42.9	43.3
Total	44.6	17.6	45.8	31.9	45.6	46.9
Lowland hardwood						
Softwood	32.9	42.1	34.0	25.6	33.4	35.3
Hardwood	64.5	72.0	83.5	58.6	63.1	60.8
Total	97.4	114.1	117.5	84.2	96.5	96.0
All classes						
Softwood	31.4	38.4	37.4	31.2	34.6	28.7
Hardwood	26.0	15.7	36.3	18.8	20.0	29.1
Total	57.4	54.1	73.7	50.0	54.6	57.8

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

Table 16—Area of reserved timberland by forest-type group and ownership class, Florida, 1995

Forest-type group	All areas	Ownership class: National forest	Miscellaneous Federal	State	County
		Thousand acres			
Longleaf–slash pine	34.2	10.8	1.4	19.7	2.3
Loblolly–shortleaf pine	58.5	12.9	23.9	20.7	1.0
Oak-pine	24.4	8.7	1.2	14.1	0.4
Oak–hickory	58.3	17.0	2.1	35.9	3.3
Oak–gum-cypress	330.6	21.7	225.7	75.9	7.3
Elm-ash-cottonwood	6.7	0.7	—	5.0	1.0
Other forest	10.0	3.8	0.5	5.3	0.4
All types	522.7	75.6	254.8	176.6	15.7

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Table 17—Number of live trees on timberland by species and diameter class, Florida, 1995

Species	All classes	Diameter class (inches at breast height) 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	21.0-28.9	29.0 and larger
						Thousand trees							
Softwood													
Longleaf pine	179,618	75,181	34,336	17,424	11,961	13,737	13,139	8,624	3,764	993	346	113	—
Slash pine	1,752,081	530,791	547,152	381,953	177,263	63,338	26,989	13,280	6,453	2,997	1,188	666	11
Shortleaf pine	4,483	1,846	499	624	506	155	234	238	216	76	49	40	—
Loblolly pine	327,082	118,507	107,765	57,262	20,255	9,103	5,502	3,261	2,301	1,284	915	897	30
Pond pine	24,930	5,012	6,423	3,780	3,701	2,334	1,549	1,188	517	255	85	86	—
Spruce pine	5,357	3,310	659	211	521	149	133	111	79	82	57	41	4
Sand pine	342,365	169,185	101,460	42,125	18,010	6,026	3,095	1,410	712	214	107	21	—
Baldcypress	68,636	18,232	14,169	9,606	8,145	6,177	4,391	3,567	1,966	1,089	595	594	105
Pondcypress	591,798	264,064	136,498	74,663	48,761	31,565	18,517	9,962	4,261	1,784	885	776	62
Cedars	33,503	16,750	6,153	3,217	2,331	1,998	1,375	852	401	211	132	79	4
Total softwoods	3,329,853	1,202,878	955,114	590,865	291,454	134,582	74,924	42,493	20,670	8,985	4,359	3,313	216
Hardwood													
Select white oaks[a]	8,555	3,955	1,982	1,183	539	235	268	121	89	74	58	44	7
Select red oaks[b]	430	340	—	—	67	—	—	16	—	—	—	7	—
Other white oaks	229,683	123,330	50,582	20,579	9,833	6,476	4,555	3,216	3,134	2,064	1,608	3,176	1,130
Other red oaks	830,230	574,266	126,593	51,582	26,785	17,905	13,001	7,724	4,677	3,091	1,892	2,274	440
Hickory	30,755	18,307	3,806	3,340	1,359	1,312	639	774	480	330	164	233	11
Hard maple	6,184	4,056	848	485	307	124	112	146	20	39	9	38	—
Soft maple	283,167	177,912	52,083	20,518	12,724	8,202	4,245	3,496	1,928	932	575	507	45
Beech	1,993	1,317	331	83	63	39	—	37	28	24	17	50	4
Sweetgum	233,007	138,247	45,382	19,950	9,983	7,889	4,744	3,371	1,704	796	471	442	28
Tupelo and blackgum	716,527	379,052	164,292	74,373	40,938	22,740	15,450	9,305	4,997	2,666	1,272	1,293	149
Ash	252,925	148,755	55,672	23,745	10,345	6,538	3,514	1,798	1,208	671	347	313	19
Cottonwood	419	342	—	—	71	—	—	—	—	—	—	6	—
Basswood	5,381	2,911	1,303	328	354	107	88	118	92	47	10	23	—
Yellow-poplar	15,372	6,759	3,336	1,842	787	1,068	528	385	233	184	134	108	8
Bay and magnolia	576,636	338,705	123,621	53,658	25,872	14,969	9,282	5,278	2,626	1,299	628	656	42
Black cherry	28,693	19,341	5,667	1,890	1,076	409	130	76	57	36	11	—	—
Black walnut	441	168	168	105	—	—	—	—	—	—	—	—	—
Sycamore	411	—	157	—	72	—	47	39	15	35	19	19	8
Elm	43,750	21,310	12,040	4,389	2,336	1,516	768	629	333	211	89	121	8
Other Eastern hardwoods	1,039,628	778,790	175,357	52,195	18,156	8,732	3,095	1,641	769	428	254	176	35
Total hardwoods	4,304,187	2,737,863	823,220	330,245	161,667	98,261	60,466	38,170	22,390	12,927	7,558	9,486	1,934
All species	7,634,040	3,940,741	1,778,334	921,110	453,121	232,843	135,390	80,663	43,060	21,912	11,917	12,799	2,150

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

[a] Includes white, swamp white, swamp chestnut, and chinkapin oaks.

[b] Includes cherrybark, northern red, and shumard oaks.

Table 18—Number of growing-stock trees on timberland by species and diameter class, Florida, 1995

Species	All classes	Diameter class (inches at breast height) 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	21.0-28.9	29.0 and larger
						Thousand trees							
Softwood													
Longleaf pine	175,735	71,885	34,171	17,120	11,961	13,737	13,062	8,605	3,747	993	346	108	—
Slash pine	1,726,560	513,651	542,401	379,127	176,824	63,068	26,966	13,241	6,438	2,985	1,188	660	11
Shortleaf pine	4,068	1,508	499	624	429	155	234	238	216	76	49	40	—
Loblolly pine	320,793	114,915	106,302	56,344	20,111	8,986	5,472	3,242	2,301	1,284	915	891	30
Pond pine	22,575	4,070	5,479	3,408	3,650	2,301	1,549	1,188	504	255	85	86	—
Spruce pine	4,528	2,481	659	211	521	149	133	111	79	82	57	41	4
Sand pine	328,971	158,094	100,041	41,702	17,745	5,914	3,028	1,393	712	214	107	21	—
Baldcypress	61,384	12,910	12,851	9,467	7,945	6,177	4,368	3,505	1,919	1,078	595	533	36
Pondcypress	531,362	225,867	124,456	69,650	46,319	30,304	17,977	9,642	3,975	1,652	817	663	40
Cedars	29,991	15,378	4,875	2,991	1,975	1,887	1,222	852	385	211	132	79	4
Total softwoods	3,205,967	1,120,759	931,734	580,644	287,480	132,678	74,011	42,017	20,276	8,830	4,291	3,122	125
Hardwood													
Select white oaks[a]	5,935	2,137	1,477	986	472	235	241	121	89	74	58	38	7
Select red oaks[b]	90	—	—	—	67	—	—	16	—	—	—	7	—
Other white oaks	42,018	16,075	9,070	4,269	3,239	1,799	1,165	1,254	1,320	885	737	1,617	588
Other red oaks	531,889	327,027	96,606	42,201	22,391	15,816	11,352	6,597	3,835	2,519	1,535	1,732	278
Hickory	14,138	4,974	1,746	2,802	995	1,204	586	719	408	318	155	220	11
Hard maple	1,238	321	—	274	307	87	57	86	20	39	9	38	—
Soft maple	121,155	56,079	28,365	12,732	8,953	6,048	3,237	2,695	1,392	766	464	399	25
Beech	1,121	652	175	83	63	39	—	37	—	24	17	27	4
Sweetgum	167,608	85,861	34,994	18,644	9,496	7,541	4,613	3,216	1,646	735	462	385	15
Tupelo and blackgum	391,743	132,619	112,889	61,084	34,935	19,995	13,317	8,241	4,402	2,259	998	918	86
Ash	86,315	37,784	18,589	12,121	6,393	5,051	2,932	1,403	940	602	256	241	3
Cottonwood	71	—	—	—	71	—	—	—	—	—	—	—	—
Basswood	2,920	1,616	644	125	177	65	50	98	77	35	10	23	—
Yellow-poplar	13,806	5,768	2,851	1,842	731	1,068	528	385	233	184	125	83	8
Bay and magnolia	368,085	193,993	80,789	42,608	21,480	12,196	8,072	4,542	2,200	1,172	470	529	34
Black cherry	15,437	8,189	4,058	1,543	1,012	361	105	76	57	25	11	—	—
Sycamore	411	—	157	—	72	—	47	39	15	35	19	19	8
Elm	21,169	7,137	6,736	2,645	1,855	1,116	472	588	275	165	71	105	4
Other Eastern hardwoods	19,779	9,191	5,186	2,447	1,200	672	472	334	167	35	45	30	—
Total hardwoods	1,804,928	889,423	404,332	206,406	113,909	73,293	47,246	30,447	17,076	9,872	5,442	6,411	1,071
All species	5,010,895	2,010,182	1,336,066	787,050	401,389	205,971	121,257	72,464	37,352	18,702	9,733	9,533	1,196

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

[a] Includes white, swamp white, swamp chestnut, and chinkapin oaks.

[b] Includes cherrybark, northern red, and shumard oaks.

Table 19—Merchantable volume of live trees on timberland by species and diameter class, Florida, 1995

Species	All classes	Diameter class (inches at breast height) 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	21.0-28.9	29.0 and larger
					Million cubic feet						
Softwood											
Longleaf pine	1,060.2	49.3	83.5	183.2	268.9	251.5	145.3	49.3	20.1	9.1	—
Slash pine	4,317.5	968.5	1,114.4	758.5	529.6	387.4	259.3	156.4	78.7	62.7	2.1
Shortleaf pine	39.4	1.7	3.0	1.9	5.0	7.9	9.1	3.9	3.3	3.6	—
Loblolly pine	899.0	140.4	114.7	106.7	107.1	99.4	94.8	70.5	65.9	92.8	6.7
Pond pine	161.6	9.8	22.4	26.2	28.0	30.7	19.7	11.7	5.6	7.7	—
Spruce pine	30.6	1.0	3.9	1.8	2.4	3.9	3.9	4.7	3.8	4.3	0.8
Sand pine	494.7	137.6	138.4	76.4	59.8	39.4	25.2	10.4	5.9	1.5	—
Baldcypress	556.8	32.0	57.0	74.1	79.4	94.7	71.3	50.6	34.9	46.6	16.2
Pondcypress	1,840.7	243.6	336.3	367.7	323.8	248.6	140.6	75.0	44.6	52.7	7.9
Cedars	125.1	9.1	13.1	20.6	22.1	22.0	13.7	9.6	7.7	6.6	0.6
Total softwoods	9,525.6	1,593.0	1,886.8	1,617.1	1,426.0	1,185.4	782.9	442.0	270.4	287.6	34.3
Hardwood											
Select white oaks[a]	31.5	3.3	2.4	2.7	4.5	3.1	3.7	3.7	3.7	3.0	1.3
Select red oaks[b]	1.6	—	0.4	—	—	0.6	—	—	—	0.6	—
Other white oaks	900.6	46.8	45.4	52.2	56.6	60.1	81.9	70.9	72.6	224.3	189.8
Other red oaks	1,569.0	146.7	160.0	197.5	225.6	188.2	154.8	135.9	104.2	188.5	67.6
Hickory	132.0	8.1	7.9	14.7	11.4	20.8	17.9	16.9	11.2	21.3	1.8
Hard maple	16.2	1.3	1.7	1.2	1.9	3.4	0.6	1.9	0.6	3.5	—
Soft maple	561.7	57.0	76.2	88.2	73.6	84.7	63.1	41.1	32.7	38.9	6.1
Beech	9.7	0.3	0.4	0.6	—	1.0	0.6	1.0	1.0	3.9	0.9
Sweetgum	584.9	52.4	62.5	97.4	93.2	96.1	65.8	41.9	32.0	39.9	3.7
Tupelo and blackgum	1,658.8	207.1	242.4	252.5	269.8	236.3	170.0	112.5	62.3	87.4	18.4
Ash	419.3	56.5	59.0	73.4	64.8	45.6	41.9	32.1	19.1	25.0	1.9
Cottonwood	0.6	—	0.3	—	—	—	—	—	—	0.3	—
Basswood	15.9	1.0	2.0	1.4	1.2	2.8	3.2	1.9	0.6	1.8	—
Yellow-poplar	85.3	6.3	6.0	12.7	10.3	10.2	10.1	9.8	8.5	10.2	1.2
Bay and magnolia	982.4	148.8	157.4	161.6	155.7	126.3	85.4	57.3	33.5	50.2	6.2
Black cherry	23.8	5.1	6.0	4.6	2.3	2.1	1.7	1.7	0.4	—	—
Black walnut	0.2	0.2	—	—	—	—	—	—	—	—	—
Sycamore	9.5	—	0.5	—	0.9	1.1	0.5	1.9	1.2	1.8	1.7
Elm	105.9	9.9	13.3	15.7	12.0	15.5	13.2	9.2	5.4	10.6	1.2
Other Eastern hardwoods	381.2	101.2	76.8	70.2	41.9	31.6	20.1	15.6	11.2	9.8	2.9
Total hardwoods	7,490.0	852.0	920.7	1,046.4	1,025.9	929.5	734.7	555.2	400.1	721.0	304.6
All species	17,015.7	2,445.0	2,807.5	2,663.5	2,451.9	2,114.9	1,517.6	997.2	670.6	1,008.6	338.9

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

[a] Includes white, swamp white, swamp chestnut, and chinkapin oaks.

[b] Includes cherrybark, northern red, and shumard oaks.

Table 20—Volume of growing stock on timberland by species and diameter class, Florida, 1995

Species	All classes	Diameter class (inches at breast height) 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	21.0-28.9	29.0 and larger
					Million cubic feet						
Softwood											
Longleaf pine	1,057.5	48.4	83.5	183.2	268.1	251.0	145.0	49.3	20.1	8.8	—
Slash pine	4,304.7	963.1	1,112.1	756.3	528.9	386.7	258.6	155.8	78.7	62.4	2.1
Shortleaf pine	39.1	1.7	2.7	1.9	5.0	7.9	9.1	3.9	3.3	3.6	—
Loblolly pine	893.5	138.6	113.9	105.7	106.5	98.5	94.8	70.5	65.9	92.3	6.7
Pond pine	160.1	9.1	22.2	25.8	28.0	30.7	19.3	11.7	5.6	7.7	—
Spruce pine	30.6	1.0	3.9	1.8	2.4	3.9	3.9	4.7	3.8	4.3	0.8
Sand pine	489.6	136.5	136.9	75.4	58.7	39.1	25.2	10.4	5.9	1.5	—
Baldcypress	541.6	31.8	56.3	74.1	79.2	93.6	70.6	50.3	34.9	43.7	7.1
Pondcypress	1,787.1	232.8	324.3	358.6	318.8	244.7	136.6	72.8	43.6	48.9	6.0
Cedars	120.6	8.6	11.7	19.8	20.6	22.0	13.3	9.6	7.7	6.6	0.6
Total softwoods	9,424.4	1,571.7	1,867.4	1,602.7	1,416.2	1,178.2	776.6	438.9	269.5	279.9	23.4
Hardwood											
Select white oaks[a]	30.4	2.8	2.3	2.7	4.1	3.1	3.7	3.7	3.7	2.9	1.3
Select red oaks[b]	1.6	—	0.4	—	—	0.6	—	—	—	0.6	—
Other white oaks	442.7	11.0	17.2	16.8	16.3	27.1	39.5	35.5	38.9	129.5	111.0
Other red oaks	1,373.7	125.5	139.6	179.3	207.4	169.8	136.1	118.8	90.2	157.2	49.9
Hickory	121.8	7.1	6.1	13.3	10.4	19.5	15.8	16.6	10.5	20.7	1.8
Hard maple	13.0	0.7	1.7	0.7	1.1	2.1	0.6	1.9	0.6	3.5	—
Soft maple	445.1	37.3	57.1	70.0	59.3	70.5	50.1	35.8	28.0	32.8	4.2
Beech	7.5	0.3	0.4	0.6	—	1.0	—	1.0	1.0	2.2	0.9
Sweetgum	563.4	49.6	59.7	94.6	91.3	93.0	63.9	39.9	31.5	37.1	2.7
Tupelo and blackgum	1,484.4	175.0	213.9	230.3	244.7	218.0	157.7	103.6	54.8	72.4	14.0
Ash	338.8	33.2	41.7	61.3	58.2	40.0	35.3	30.1	16.5	22.0	0.5
Cottonwood	0.3	—	0.3	—	—	—	—	—	—	—	—
Basswood	13.1	0.4	1.3	1.1	0.9	2.5	2.7	1.8	0.6	1.8	—
Yellow-poplar	83.0	6.3	5.6	12.7	10.3	10.2	10.1	9.8	8.2	8.6	1.2
Bay and magnolia	853.7	121.5	135.4	138.5	139.2	112.9	75.3	53.7	27.5	44.3	5.4
Black cherry	21.3	4.3	5.7	4.3	1.9	2.1	1.7	1.0	0.4	—	—
Sycamore	9.5	—	0.5	—	0.9	1.1	0.5	1.9	1.2	1.8	1.7
Elm	85.2	6.0	10.7	12.2	8.1	14.8	11.2	7.7	4.3	9.5	0.7
Other Eastern hardwoods	53.5	6.9	7.9	7.3	9.0	8.9	6.2	2.1	3.0	2.2	—
Total hardwoods	5,942.0	588.0	707.3	845.6	863.2	797.1	610.4	465.1	320.8	549.1	195.2
All species	15,366.4	2,159.7	2,574.8	2,448.3	2,279.4	1,975.4	1,387.1	904.0	590.3	829.0	218.6

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

[a] Includes white, swamp white, swamp chestnut, and chinkapin oaks.

[b] Includes cherrybark, northern red, and shumard oaks.

Table 21—Volume of sawtimber on timberland by species and diameter class, Florida, 1995

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
				Million board feet					
Softwood									
Longleaf pine	4,709.5	749.7	1,292.9	1,346.2	835.8	299.0	127.5	58.3	—
Slash pine	10,599.5	2,770.8	2,427.4	2,029.6	1,480.2	949.7	503.6	422.8	15.5
Shortleaf pine	188.7	7.0	23.1	40.6	50.9	23.0	20.2	23.9	—
Loblolly pine	3,416.6	378.8	480.1	511.7	533.1	424.4	417.2	622.3	49.0
Pond pine	646.1	99.3	127.9	157.5	107.8	68.8	34.8	50.0	—
Spruce pine	144.6	7.3	11.6	20.8	21.5	27.1	23.2	27.5	5.7
Sand pine	1,026.2	290.6	274.2	206.7	144.5	63.1	37.0	10.0	—
Baldcypress	2,013.6	223.8	299.1	408.0	338.8	257.9	187.7	252.0	46.3
Pondcypress	5,060.4	1,126.0	1,245.5	1,089.0	665.2	377.2	236.7	282.3	38.4
Cedars	506.3	77.4	94.0	113.6	73.1	55.4	46.7	42.2	3.9
Total softwoods	28,311.5	5,730.8	6,275.8	5,923.8	4,251.0	2,545.7	1,634.6	1,791.2	158.6
Hardwood									
Select white oaks[a]	104.9	—	13.9	12.5	16.5	18.0	19.0	16.6	8.4
Select red oaks[b]	6.1	—	—	2.6	—	—	—	3.4	—
Other white oaks	1,979.4	—	56.4	107.1	169.8	163.3	187.4	670.3	625.1
Other red oaks	4,480.4	—	793.3	737.9	650.2	603.5	481.6	900.7	313.2
Hickory	447.6	—	35.3	79.8	71.7	81.0	54.3	114.3	11.2
Hard maple	44.3	—	3.7	8.1	2.7	8.9	3.0	17.9	—
Soft maple	1,162.3	—	193.9	268.8	212.0	162.1	133.8	168.2	23.5
Beech	25.0	—	—	3.7	—	4.1	4.2	9.2	3.7
Sweetgum	1,656.6	—	325.9	397.3	307.8	209.4	175.1	222.8	18.3
Tupelo and blackgum	3,591.3	—	797.7	849.0	692.0	493.5	275.7	397.5	85.8
Ash	840.8	—	190.4	153.2	152.7	141.2	82.6	117.6	3.0
Basswood	45.3	—	3.2	9.7	11.7	8.4	2.8	9.5	—
Yellow-poplar	292.1	—	37.6	43.3	49.7	52.7	47.1	53.5	8.1
Bay and magnolia	1,852.3	—	462.1	435.0	318.0	246.7	131.5	228.4	30.7
Black cherry	29.7	—	6.5	8.5	7.6	5.1	2.0	—	—
Sycamore	43.7	—	3.0	4.2	2.2	8.7	6.0	9.9	9.8
Elm	241.1	—	27.8	58.1	47.9	35.2	20.3	47.6	4.1
Other Eastern hardwoods	132.9	—	31.0	35.9	27.7	10.0	15.9	12.4	—
Total hardwoods	16,975.7	—	2,981.7	3,214.8	2,740.3	2,251.8	1,642.3	2,999.8	1,144.9
All species	45,287.2	5,730.8	9,257.5	9,138.6	6,991.3	4,797.5	3,276.9	4,791.0	1,303.6

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

[a] Includes white, swamp white, swamp chestnut, and chinkapin oaks.

[b] Includes cherrybark, northern red, and shumard oaks.

Table 22—Volume of sawtimber on timberland by species, size class, and tree grade, Florida, 1995

Species	All size classes					Trees 15.0 inches d.b.h. and larger				
	All grades	Tree grade				All grades	Tree grade			
		1	2	3	4		1	2	3	4
	Million board feet									
Softwood										
Yellow pines[a]	20,731.1	5,660.9	5,546.3	9,524.0	—	7,477.3	3,082.4	1,987.9	2,406.9	—
Cypress[b]	7,074.1	1,229.7	2,127.3	3,693.3	23.7	2,682.6	1,229.7	1,080.3	367.3	5.3
Other Eastern softwoods[c]	506.3	107.3	167.7	204.8	26.6	221.3	76.1	75.5	66.5	3.2
Total	28,311.5	6,997.9	7,841.2	13,422.1	50.3	10,381.1	4,388.2	3,143.7	2,840.7	8.5
Hardwood[b]										
Select white and red oaks	111.0	13.8	47.8	42.2	7.2	81.9	13.8	47.8	17.2	3.1
Other white and red oaks	6,459.7	746.0	1,783.7	3,355.9	574.2	4,765.0	746.0	1,620.8	2,086.0	312.2
Hickory	447.6	76.8	177.8	182.4	10.5	332.6	76.8	150.5	94.8	10.5
Hard maple	44.3	—	13.2	18.4	12.8	32.5	—	10.9	14.7	6.9
Sweetgum	1,656.6	199.3	656.3	736.1	65.0	933.4	199.3	480.2	217.7	36.3
Ash, walnut, and black cherry	870.5	62.7	274.9	504.4	28.4	511.8	62.7	224.3	208.9	16.0
Yellow-poplar	292.1	47.0	129.6	107.8	7.7	211.1	47.0	115.6	48.5	—
Other Eastern hardwoods	7,093.8	636.6	2,204.5	3,977.1	275.6	3,910.8	636.6	1,621.3	1,476.9	176.1
Total	16,975.7	1,782.2	5,287.8	8,924.3	981.4	10,779.2	1,782.2	4,271.4	4,164.6	561.0
All species	45,287.2	8,780.1	13,129.0	22,346.4	1,031.7	21,160.3	6,170.4	7,415.1	7,005.3	569.6

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

[a] For yellow pines, tree grade is based on "Southern Pine Tree Grades for Yard and Structural Lumber," Research Paper SE-40, published by the Southeastern Forest Experiment Station, Asheville, NC, 1968. Tree grade 4 does not apply to yellow pine.

[b] For hardwoods and cypress, tree grades 1, 2, and 3 are based on "Hardwood Tree Grades for Factory Lumber," Research Paper NE-333, published by the Northeastern Forest Experiment Station, Radnor, PA, 1976. Grade 4 trees are sawtimber trees not qualifying as tree grades 1, 2, or 3. The butt log of these trees qualify as construction (tie and timber) logs based on "A Guide to Hardwood Log Grading (revised)," General Technical Report NE-1, published by the Northeastern Forest Experiment Station, Radnor, PA, 1971.

[c] For other softwoods (excluding cypress), tree grade is based on "Tree Grades for Eastern White Pine," Research Paper NE-214, published by the Northeastern Forest Experiment Station, Radnor, PA, 1971.

Table 23—Volume of live timber and associated green weight of forest biomass on timberland by class of material, softwood, and hardwood, Florida, 1995

Class of material	Volume[a]			Associated green weight[b]		
	All species	Softwood	Hardwood	All species	Softwood	Hardwood
	Million cubic feet			*Thousand tons*		
Sawtimber trees						
Saw-log portion	8,584.9	5,374.3	3,210.6	322,143.8	200,766.7	121,377.2
Upper stem	1,201.5	611.0	590.4	43,946.1	22,300.7	21,645.4
Total[c]	9,786.4	5,985.3	3,801.0	366,089.9	223,067.4	143,022.6
Poletimber trees[c]	5,580.1	3,439.1	2,141.0	190,306.8	118,787.5	71,519.3
All growing stock[c]	15,366.4	9,424.4	5,942.0	556,396.7	341,854.8	214,541.9
Rough trees[c]	1,455.2	70.5	1,384.7	59,088.4	2,345.8	56,742.6
Rotten trees[c]	194.0	30.8	163.3	7,696.2	1,199.3	6,496.9
Saplings[d]	3,146.8	1,445.6	1,701.2	119,065.2	56,431.2	62,634.0
Stumps, tops, and limbs[e]	4,223.7	2,252.9	1,970.8	149,967.3	77,857.4	72,109.9
Total, all classes	24,386.2	13,224.2	11,162.0	892,213.7	479,688.5	412,525.2

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

[a] Excludes bark.

[b] Includes bark.

[c] Bole portion only.

[d] Includes entire tree aboveground.

[e] Of live trees 5.0 inches d.b.h. and larger.

Table 24—Total volume of live trees on timberland by species and diameter class, Florida, 1995

Species	All classes	Diameter class (inches at breast height) 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	21.0-28.9	29.0 and larger
						Million cubic feet							
Softwood													
Longleaf pine	1,277.9	16.5	40.2	68.7	100.6	211.8	305.8	283.5	163.0	55.1	22.4	10.1	—
Slash pine	5,988.0	139.0	596.5	1,364.8	1,348.3	877.7	601.4	435.8	290.2	174.5	87.6	69.7	2.3
Shortleaf pine	45.7	0.2	0.3	2.4	3.7	2.2	5.7	8.9	10.3	4.4	3.7	4.0	—
Loblolly pine	1,208.6	28.2	107.2	202.0	140.4	124.6	122.5	112.6	106.9	79.2	73.8	103.8	7.5
Pond pine	196.0	1.1	6.4	13.1	26.9	30.5	32.2	35.0	22.4	13.2	6.4	8.7	—
Spruce pine	36.2	0.7	0.5	1.3	4.7	2.1	2.8	4.5	4.4	5.3	4.3	4.9	1.0
Sand pine	796.9	48.6	123.5	202.6	170.5	89.6	68.7	44.8	28.5	11.7	6.6	1.7	—
Baldcypress	717.4	5.3	21.2	47.4	73.5	91.9	96.8	114.5	86.0	60.7	41.8	56.1	22.1
Pondcypress	2,795.3	84.3	213.5	409.5	466.6	483.7	416.4	316.0	177.8	94.7	56.1	66.6	10.2
Cedars	162.2	4.6	7.8	12.7	16.4	24.6	26.0	25.7	16.0	11.2	9.0	7.7	0.7
Total softwoods	13,224.2	328.5	1,117.1	2,324.6	2,351.5	1,938.5	1,678.4	1,381.4	905.4	510.0	311.7	333.3	43.7
Hardwood													
Select white oaks[a]	43.8	0.8	2.8	4.8	3.2	3.5	5.7	3.9	4.6	4.6	4.6	3.8	1.6
Select red oaks[b]	2.1	0.1	—	—	0.5	—	—	0.7	—	—	—	0.8	—
Other white oaks	1,222.0	28.3	57.0	82.4	62.6	67.2	70.9	74.3	100.3	86.8	88.7	272.4	231.2
Other red oaks	2,324.0	122.8	161.8	227.3	215.0	254.6	286.0	237.4	194.7	170.4	130.3	237.2	86.3
Hickory	171.9	3.6	4.1	12.7	10.4	18.4	14.0	25.3	21.7	20.4	13.5	25.7	2.3
Hard maple	21.8	0.8	0.8	2.0	2.2	1.5	2.3	4.2	0.7	2.3	0.7	4.1	—
Soft maple	816.3	43.5	77.0	82.1	96.5	108.0	89.1	102.1	75.9	49.1	39.1	46.6	7.4
Beech	13.1	0.2	0.4	0.4	0.6	0.7	—	1.2	0.7	1.3	1.3	5.0	1.1
Sweetgum	785.0	31.9	55.8	77.2	77.7	115.1	108.0	110.3	75.0	47.8	36.3	45.5	4.4
Tupelo and blackgum	2,479.3	115.1	240.8	312.2	315.5	315.4	333.3	289.8	208.3	138.7	77.5	109.3	23.5
Ash	618.5	40.7	70.2	80.6	72.9	87.0	75.6	53.1	48.4	36.8	22.1	28.7	2.3
Cottonwood	0.8	0.1	—	—	0.4	—	—	—	—	—	—	0.4	—
Basswood	20.7	0.9	1.3	1.3	2.4	1.6	1.4	3.2	3.7	2.2	0.6	2.1	—
Yellow-poplar	104.3	1.8	4.3	8.4	7.2	14.6	11.8	11.5	11.4	11.0	9.6	11.5	1.3
Bay and magnolia	1,486.5	83.3	177.6	218.6	198.9	196.5	186.3	150.0	101.3	67.6	39.7	59.5	7.3
Black cherry	44.5	7.1	8.1	6.9	7.4	5.5	2.7	2.4	1.9	2.0	0.5	—	—
Black walnut	0.5	0.0	0.1	0.3	—	—	—	—	—	—	—	—	—
Sycamore	11.6	—	0.5	—	0.6	—	1.0	1.3	0.6	2.2	1.4	2.1	1.9
Elm	150.7	5.5	16.4	14.2	16.6	19.0	14.4	18.3	15.5	10.8	6.3	12.4	1.4
Other Eastern hardwoods	844.3	157.3	178.4	152.7	100.9	88.6	52.3	39.1	25.1	19.5	14.1	12.2	4.2
Total hardwoods	11,162.0	643.8	1,057.3	1,284.0	1,191.3	1,297.4	1,254.9	1,128.3	890.0	673.4	486.2	879.3	376.0
All species	24,386.2	972.3	2,174.4	3,608.6	3,542.9	3,235.9	2,933.2	2,509.8	1,795.4	1,183.3	797.9	1,212.6	419.8

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

[a] Includes white, swamp white, swamp chestnut, and chinkapin oaks.

[b] Includes cherrybark, northern red, and shumard oaks.

Table 25—Green weight of forest biomass on timberland by species and diameter class, Florida, 1995

Species	All classes	Diameter class (inches at breast height) 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	21.0-28.9	29.0 and larger
						Thousand tons							
Softwood													
Longleaf pine	50,009.3	665.9	1,714.4	2,412.0	3,811.9	8,183.6	12,011.5	11,218.7	6,483.7	2,197.8	903.6	406.5	—
Slash pine	231,837.4	5,130.9	27,637.8	49,429.9	51,494.4	33,834.7	23,285.5	16,882.0	11,228.6	6,753.8	3,386.8	2,684.2	89.1
Shortleaf pine	1,622.2	4.6	8.2	71.8	126.6	77.8	205.2	318.7	370.6	158.7	132.2	148.0	—
Loblolly pine	42,858.9	717.2	3,167.1	7,101.0	5,238.8	4,582.0	4,499.0	4,117.7	3,874.7	2,876.3	2,675.2	3,745.9	264.3
Pond pine	6,923.2	31.7	181.4	455.9	959.6	1,092.4	1,148.5	1,255.5	796.3	471.3	224.2	306.6	—
Spruce pine	1,258.0	24.9	21.8	36.3	152.4	71.0	99.1	155.4	152.2	186.6	153.5	171.9	33.2
Sand pine	27,180.7	1,839.7	5,057.0	6,086.5	5,570.3	3,044.9	2,364.0	1,540.3	990.8	401.6	227.9	58.0	—
Baldcypress	26,165.1	146.5	669.4	1,193.5	2,258.7	3,152.7	3,549.8	4,357.3	3,361.1	2,434.2	1,697.8	2,355.0	989.3
Pondcypress	85,537.1	2,298.9	6,697.3	8,951.0	12,748.9	14,831.7	13,854.3	11,049.0	6,441.8	3,519.3	2,129.1	2,598.3	417.9
Cedars	6,296.8	163.7	253.3	459.7	620.9	941.3	1,033.2	1,032.8	651.2	448.3	358.5	306.5	27.8
Total softwoods	479,688.5	11,023.7	45,407.6	76,197.3	82,982.2	69,811.9	62,049.8	51,927.3	34,350.6	19,447.6	11,888.7	12,780.6	1,821.4
Hardwood													
Select white oaks[a]	1,798.5	32.2	104.1	165.5	131.9	140.5	241.0	163.7	187.9	193.8	195.2	171.5	71.5
Select red oaks[b]	88.2	3.6	—	—	18.5	—	—	31.4	—	—	—	34.9	—
Other white oaks	55,335.5	1,066.7	2,129.2	2,302.9	2,438.7	2,885.3	3,214.0	3,432.8	4,734.9	4,138.8	4,220.9	13,250.1	11,521.3
Other red oaks	93,368.0	5,408.6	6,140.2	8,508.8	8,821.7	10,320.5	11,606.8	9,680.9	7,947.8	6,923.4	5,290.3	9,372.8	3,346.4
Hickory	7,109.3	157.3	181.9	443.2	405.5	730.3	566.6	1,049.8	915.2	863.4	572.5	1,121.4	102.6
Hard maple	947.8	34.1	33.8	68.2	95.1	64.9	99.3	186.5	35.2	104.5	33.7	192.9	—
Soft maple	29,942.9	1,652.4	2,740.8	2,873.5	3,679.0	4,052.5	3,286.0	3,769.1	2,790.3	1,786.9	1,395.6	1,661.4	255.6
Beech	546.7	9.6	18.3	15.5	20.6	26.1	—	51.8	38.8	54.8	55.9	212.5	43.0
Sweetgum	28,450.1	1,073.6	1,852.4	2,476.3	2,751.6	4,152.0	3,972.7	4,125.7	2,862.9	1,826.2	1,394.2	1,783.0	179.6
Tupelo and blackgum	81,087.7	3,799.6	8,014.1	7,838.5	9,541.4	10,049.0	11,087.2	10,066.0	7,423.5	5,116.7	2,965.6	4,250.9	935.5
Ash	19,964.4	1,256.9	2,220.7	3,143.0	2,643.9	2,852.0	2,339.9	1,591.2	1,422.8	1,048.7	618.9	767.5	59.2
Cottonwood	31.1	3.1	—	—	12.9	—	—	—	—	—	—	15.2	—
Basswood	718.3	29.3	46.6	37.4	81.5	53.8	52.7	113.4	129.0	77.5	23.5	73.8	—
Yellow-poplar	3,689.9	66.3	145.2	246.7	243.0	516.9	419.8	417.1	406.6	403.2	351.6	422.7	51.0
Bay and magnolia	46,263.3	2,606.2	5,346.8	5,858.9	6,101.9	6,180.9	5,988.1	4,941.0	3,365.0	2,265.1	1,340.3	2,019.3	250.1
Black cherry	1,418.1	179.7	271.5	203.8	244.8	183.6	93.0	83.8	70.7	70.3	17.1	—	—
Black walnut	21.5	0.6	6.4	14.6	—	—	—	—	—	—	—	—	—
Sycamore	429.5	—	15.5	—	16.2	—	37.8	45.7	23.0	80.8	53.6	82.8	74.3
Elm	5,053.9	200.4	571.2	450.1	548.3	629.3	482.3	618.1	507.1	371.7	213.0	414.6	48.1
Other Eastern hardwoods	36,260.9	6,816.8	8,399.3	6,588.0	4,489.8	3,874.1	2,087.0	1,562.8	894.8	658.1	431.2	366.8	92.4
Total hardwoods	412,525.2	24,396.5	38,237.5	41,234.5	42,285.8	46,711.4	45,573.7	41,930.4	33,755.2	25,983.6	19,173.0	36,213.7	17,030.2
All species	892,213.7	35,420.2	83,645.1	117,431.8	125,267.9	116,523.3	107,623.5	93,857.7	68,105.8	45,431.2	31,061.6	48,994.3	18,851.6

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

[a] Includes white, swamp white, swamp chestnut, and chinkapin oaks.

[b] Includes cherrybark, northern red, and shumard oaks.

Table 26—Volume of growing stock on timberland by species and forest-type group, Florida, 1995

Species	All types	Forest-type group					
		Longleaf–slash	Loblolly–shortleaf	Oak–pine	Oak–hickory	Oak–gum–cypress	Elm–ash–cottonwood
		Million cubic feet					
Softwood							
Longleaf pine	1,057.5	816.0	26.2	150.4	56.1	8.7	—
Slash pine	4,304.7	3,705.6	39.1	322.0	26.0	211.4	0.6
Shortleaf pine	39.1	0.4	19.3	15.6	3.8	—	—
Loblolly pine	893.5	35.0	582.3	182.7	43.1	50.5	—
Pond pine	160.1	23.2	82.9	32.2	1.5	20.3	—
Spruce pine	30.6	0.4	—	12.1	10.3	6.8	1.1
Sand pine	489.6	5.2	434.1	39.4	10.2	0.7	—
Baldcypress	541.6	2.7	—	7.4	0.4	530.0	1.1
Pondcypress	1,787.1	44.3	—	77.1	2.2	1,662.9	0.7
Cedars	120.6	6.5	2.6	28.5	3.3	79.8	—
Total softwoods	9,424.4	4,639.2	1,186.4	867.4	157.0	2,571.0	3.4
Hardwood							
Select white oaks[a]	30.4	—	—	5.7	15.2	9.5	—
Select red oaks[b]	1.6	—	—	—	0.6	1.0	—
Other white oaks	442.7	12.0	9.5	41.1	238.4	140.6	1.0
Other red oaks	1,373.7	55.2	36.8	149.6	535.2	591.2	5.6
Hickory	121.8	0.2	2.3	7.2	75.8	35.6	0.8
Hard maple	13.0	—	0.4	2.1	2.0	8.1	0.3
Soft maple	445.1	8.5	2.8	26.7	20.0	379.2	8.0
Beech	7.5	—	—	1.6	5.3	0.6	—
Sweetgum	563.4	11.2	15.0	52.7	95.0	385.6	3.9
Tupelo and blackgum	1,484.4	28.8	3.6	84.8	26.9	1,339.6	0.6
Ash	338.8	—	—	—	5.3	331.3	2.2
Cottonwood	0.3	—	—	—	—	—	0.3
Basswood	13.1	—	—	—	4.1	9.0	—
Yellow-poplar	83.0	5.7	3.6	13.2	9.8	50.6	—
Bay and magnolia	853.7	59.8	8.5	91.4	34.9	659.1	—
Black cherry	21.3	2.0	0.7	2.4	14.3	1.9	—
Sycamore	9.5	—	—	—	—	4.1	5.5
Elm	85.2	0.2	—	—	9.9	71.4	3.7
Other Eastern hardwoods	53.5	0.5	0.9	1.4	7.5	37.5	5.5
Total hardwoods	5,942.0	184.3	84.1	480.0	1,100.5	4,055.8	37.4
All species	15,366.4	4,823.5	1,270.5	1,347.5	1,257.4	6,626.8	40.8

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

[a] Includes white, swamp white, swamp chestnut, and chinkapin oaks.

[b] Includes cherrybark, northern red, and shumard oaks.

Table 27—Volume of growing stock on timberland by ownership class, species group, and diameter class, Florida, 1995

Ownership class and species group	All classes	Diameter class (inches at breast height) 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	21.0-28.9	29.0 and larger
					Million cubic feet						
National forest											
Softwood	995.0	130.6	172.2	171.1	184.3	163.8	92.2	43.1	17.4	18.4	1.9
Hardwood	268.7	36.4	35.8	41.6	33.1	37.6	27.3	23.1	16.1	15.1	2.6
Total	1,263.7	167.0	208.0	212.6	217.4	201.4	119.5	66.2	33.6	33.5	4.4
Other public											
Softwood	1,542.5	139.8	224.5	230.5	275.0	270.6	181.2	105.9	46.1	62.9	6.0
Hardwood	1,064.9	82.1	111.6	153.1	145.5	159.4	126.8	85.1	71.7	105.5	24.2
Total	2,607.4	221.9	336.1	383.6	420.5	430.0	308.0	191.0	117.8	168.3	30.2
Forest industry											
Softwood	2,311.4	535.2	589.1	439.5	287.4	188.5	109.9	63.3	53.9	43.2	1.3
Hardwood	1,230.2	140.6	154.6	169.7	191.9	165.0	129.6	93.3	64.1	97.3	24.1
Total	3,541.5	675.8	743.8	609.2	479.3	353.5	239.6	156.5	118.0	140.5	25.3
Forest industry-leased											
Softwood	308.6	82.2	87.9	61.9	28.1	11.5	7.3	6.1	5.7	16.2	1.7
Hardwood	167.8	28.3	24.2	28.0	22.3	21.9	13.9	5.0	3.3	15.2	5.8
Total	476.4	110.5	112.1	89.9	50.5	33.4	21.1	11.1	9.0	31.3	7.5
Other private											
Softwood	4,267.0	683.8	793.7	699.7	641.3	543.8	386.0	220.5	146.4	139.2	12.5
Hardwood	3,210.4	300.6	381.1	453.3	470.4	413.2	312.9	258.6	165.6	316.1	138.6
Total	7,477.4	984.4	1,174.8	1,153.0	1,111.7	957.1	698.8	479.1	312.0	455.4	151.1
All ownerships											
Softwood	9,424.4	1,571.7	1,867.4	1,602.7	1,416.2	1,178.2	776.6	438.9	269.5	279.9	23.4
Hardwood	5,942.0	588.0	707.3	845.6	863.2	797.1	610.4	465.1	320.8	549.1	195.2
Total	15,366.4	2,159.7	2,574.8	2,448.3	2,279.4	1,975.4	1,387.1	904.0	590.3	829.0	218.6

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

Table 28—Volume of sawtimber on timberland by ownership class, species group, and diameter class, Florida, 1995

Ownership class and species group	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 and larger
				Million board feet					
National forest									
Softwood	3,361.7	651.5	848.3	852.3	520.0	254.1	104.7	117.7	13.0
Hardwood	665.3	—	111.8	145.7	119.6	109.5	81.5	81.9	15.2
Total	4,026.9	651.5	960.2	998.0	639.5	363.5	186.3	199.7	28.2
Other public									
Softwood	5,792.5	838.8	1,233.9	1,379.6	1,004.2	618.0	279.1	399.7	39.3
Hardwood	3,180.1	—	491.7	635.4	565.2	409.2	366.2	571.2	141.3
Total	8,972.7	838.8	1,725.6	2,015.1	1,569.3	1,027.1	645.3	970.9	180.6
Forest industry									
Softwood	5,333.8	1,564.2	1,265.6	937.9	597.0	362.2	325.2	273.4	8.2
Hardwood	3,351.3	—	652.0	661.4	577.9	454.1	329.2	535.4	141.3
Total	8,685.1	1,564.2	1,917.6	1,599.4	1,174.9	816.2	654.4	808.8	149.5
Forest industry-leased									
Softwood	626.3	218.0	120.2	56.1	39.6	34.4	36.3	109.2	12.5
Hardwood	388.3	—	77.9	88.5	61.8	23.5	17.6	83.9	34.9
Total	1,014.6	218.0	198.1	144.6	101.4	58.0	53.9	193.1	47.5
Other private									
Softwood	13,197.2	2,458.3	2,807.8	2,697.8	2,090.2	1,277.0	889.3	891.2	85.6
Hardwood	9,390.7	—	1,648.3	1,683.7	1,415.9	1,255.6	847.7	1,727.4	812.1
Total	22,587.9	2,458.3	4,456.1	4,381.5	3,506.1	2,532.6	1,737.0	2,618.6	897.7
All ownerships									
Softwood	28,311.5	5,730.8	6,275.8	5,923.8	4,251.0	2,545.7	1,634.6	1,791.2	158.6
Hardwood	16,975.7	—	2,981.7	3,214.8	2,740.3	2,251.8	1,642.3	2,999.8	1,144.9
Total	45,287.2	5,730.8	9,257.5	9,138.6	6,991.3	4,797.5	3,276.9	4,791.0	1,303.6

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Table 29—Volume of growing stock on timberland by broad management class, species group, and stand-age class, Florida, 1995

Broad management class and species group	All classes	No manageable stand	Stand-age class (years)								
			0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81+
			Million cubic feet								
Pine plantation											
Softwood	2,743.6	17.6	133.0	1,010.0	1,121.3	399.7	40.0	15.1	—	7.0	—
Hardwood	52.0	0.5	6.0	17.5	21.5	6.2	—	0.2	—	—	—
Total	2,795.6	18.1	139.0	1,027.5	1,142.8	405.8	40.0	15.3	—	7.0	—
Natural pine											
Softwood	3,082.0	323.0	64.5	136.3	199.2	439.7	682.3	606.3	393.8	125.6	111.5
Hardwood	216.4	9.8	8.8	11.2	11.5	22.3	47.2	55.6	32.7	3.4	13.8
Total	3,298.4	332.8	73.2	147.5	210.7	462.0	729.5	662.0	426.4	129.0	125.3
Oak–pine											
Softwood	867.4	208.7	34.1	39.7	33.7	48.2	111.3	160.3	83.3	40.9	107.2
Hardwood	480.0	46.0	17.6	16.8	17.9	29.3	81.6	114.9	62.9	32.5	60.5
Total	1,347.5	254.7	51.7	56.5	51.6	77.5	193.0	275.1	146.3	73.4	167.7
Upland hardwood											
Softwood	157.0	73.2	11.8	12.1	14.1	8.4	10.5	14.3	4.0	4.9	3.7
Hardwood	1,100.5	259.5	45.0	41.6	65.5	46.7	134.9	162.8	99.8	79.9	164.8
Total	1,257.4	332.7	56.8	53.7	79.5	55.0	145.5	177.1	103.8	84.8	168.5
Lowland hardwood											
Softwood	2,574.4	152.4	17.2	8.5	44.7	103.4	173.4	317.2	468.3	432.1	857.4
Hardwood	4,093.1	375.8	23.7	27.5	73.1	164.3	465.3	712.4	741.5	651.6	857.9
Total	6,667.6	528.1	40.9	36.0	117.8	267.7	638.7	1,029.6	1,209.8	1,083.6	1,715.2
All types											
Softwood	9,424.4	774.7	260.6	1,206.5	1,412.9	999.3	1,017.6	1,113.3	949.4	610.4	1,079.8
Hardwood	5,942.0	691.6	101.1	114.6	189.6	268.7	729.1	1,045.9	936.9	767.4	1,096.9
Total	15,366.4	1,466.4	361.7	1,321.1	1,602.5	1,268.0	1,746.7	2,159.2	1,886.3	1,377.8	2,176.7

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Table 30—Average net annual growth and removals of live timber and growing stock on timberland by species, Florida, 1987-1994

Species	Live timber[a]		Growing stock	
	Net annual growth	Annual timber removals	Net annual growth	Annual timber removals
	Million cubic feet			
Softwood				
Yellow pines	490.0	433.2	488.7	431.4
Cypress	40.2	41.7	39.9	40.8
Other Eastern softwoods	3.1	0.5	3.1	0.4
Total softwoods	533.4	475.4	531.8	472.6
Hardwood				
Select white and red oaks	1.0	1.2	0.9	1.2
Other white and red oaks	80.4	49.0	68.0	39.5
Hickory	3.4	3.2	3.4	3.1
Hard maple	0.4	0.5	0.5	0.4
Sweetgum	15.3	12.1	15.1	11.4
Ash, walnut, and black cherry	6.2	3.6	5.9	3.2
Yellow-poplar	3.3	1.3	3.3	1.1
Tupelo and blackgum	27.4	15.3	26.2	13.6
Bay and magnolia	25.4	8.8	23.6	7.9
Other Eastern hardwoods	20.8	13.8	14.1	6.7
Total hardwoods	183.5	108.7	160.9	88.1
All species	716.9	584.1	692.6	560.7

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

[a] Merchantable portion only.

Table 31—Average net annual growth and removals of growing stock on timberland by ownership class, softwood, and hardwood, Florida, 1987-1994

Ownership class	Net annual growth			Annual timber removals		
	All species	Softwood	Hardwood	All species	Softwood	Hardwood
	Million cubic feet					
National forest	32.8	27.7	5.1	20.5	20.5	—
Other public	69.7	47.0	22.8	47.1	34.3	12.8
Forest industry	229.8	195.1	34.7	208.0	183.3	24.7
Forest industry-leased	36.6	30.9	5.6	36.6	33.8	2.8
Other private	323.8	231.1	92.7	248.6	200.8	47.8
All ownerships	692.6	531.8	160.9	560.7	472.6	88.1

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Table 32—Average net annual growth and removals of sawtimber on timberland by species, Florida, 1987-1994

Species	Net annual growth	Annual timber removals
	Million board feet	
Softwood		
Yellow pines	1,225.7	1,103.6
Cypress	183.1	112.9
Other Eastern softwoods	13.4	1.5
Total softwoods	1,422.2	1,217.9
Hardwood		
Select white and red oaks	4.0	4.5
Other white and red oaks	254.8	127.5
Hickory	14.0	12.4
Hard maple	1.6	1.3
Sweetgum	57.6	36.4
Ash, walnut, and black cherry	18.6	7.2
Yellow-poplar	10.8	3.4
Tupelo and blackgum	79.7	33.2
Bay and magnolia	58.3	19.2
Other Eastern hardwoods	43.5	20.0
Total hardwoods	543.0	265.0
All species	1,965.2	1,482.9

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

Table 33—Average net annual growth and removals of sawtimber on timberland by ownership class, softwood, and hardwood, Florida, 1987-1994

Ownership class	Net annual growth			Annual timber removals		
	All species	Softwood	Hardwood	All species	Softwood	Hardwood
			Million board feet			
National forest	104.0	88.5	15.6	56.7	56.7	—
Other public	268.7	181.8	87.0	162.6	118.2	44.5
Forest industry	527.9	423.3	104.5	451.0	383.6	67.3
Forest industry-leased	75.5	59.2	16.3	59.5	54.1	5.3
Other private	989.0	669.5	319.6	753.1	605.2	147.9
All ownerships	1,965.2	1,422.2	543.0	1,482.9	1,217.9	265.0

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Table 34—Average annual mortality of live timber, growing stock, and sawtimber on timberland by species, Florida, 1987-1994

Species	Live timber[a]	Growing stock	Sawtimber
	Million cubic feet		*Million board feet*
Softwood			
Yellow pines	45.7	45.0	156.1
Cypress	8.6	7.7	13.6
Other Eastern softwoods	1.3	1.1	4.7
Total softwoods	55.6	53.7	174.4
Hardwood			
Select white and red oaks	0.3	0.3	1.1
Other white and red oaks	22.0	14.2	50.0
Hickory	0.9	0.6	2.3
Hard maple	0.3	—	—
Sweetgum	5.2	4.6	14.0
Ash, walnut, and black cherry	6.5	4.4	11.8
Yellow-poplar	0.5	0.4	1.6
Tupelo and blackgum	10.7	7.8	18.9
Bay and magnolia	13.3	10.1	27.5
Other Eastern hardwoods	23.5	9.6	29.5
Total hardwoods	83.1	52.0	156.8
All species	138.7	105.7	331.2

Numbers in rows and columns may not sum to totals due to rounding.
A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Table 35—Average annual mortality of growing stock and sawtimber on timberland by ownership class, softwood, and hardwood, Florida, 1987-1994

	Growing stock			Sawtimber		
Ownership class	All species	Softwood	Hardwood	All species	Softwood	Hardwood
	Million cubic feet			*Million board feet*		
National forest	8.2	6.1	2.1	24.6	19.0	5.5
Other public	18.8	8.9	9.9	67.1	36.8	30.2
Forest industry	20.0	10.6	9.4	53.4	23.8	29.5
Forest industry-leased	2.9	1.9	0.9	8.7	7.2	1.4
Other private	55.8	26.2	29.6	177.5	87.4	90.1
All ownerships	105.7	53.7	52.0	331.2	174.4	156.8

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

Table 36—Average annual mortality of growing stock and sawtimber on timberland by cause of death, softwood, and hardwood, Florida, 1987-1994

Ownership class	Growing stock			Sawtimber		
	All species	Softwood	Hardwood	All species	Softwood	Hardwood
	Million cubic feet			*Million board feet*		
Fire	7.4	6.4	1.0	18.6	16.0	2.6
Insects	9.1	8.4	0.7	35.5	32.8	2.7
Disease	15.7	7.0	8.7	47.6	17.1	30.5
Weather	32.3	14.2	18.1	128.1	62.8	65.4
Suppression	10.9	5.3	5.6	14.5	5.4	9.1
Animals	0.2	0.1	0.1	0.4	0.4	—
Undetermined	30.2	12.4	17.8	86.4	39.9	46.5
All causes	105.7	53.7	52.0	331.2	174.4	156.8

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Table 37—Average annual output of timber products by product, species group, and type of material, Florida, 1987-1994

Product and species group	Standard units	Total output		Roundwood products		Plant byproducts	
		Number of units	Million cubic feet	Number of units	Million cubic feet	Number of units	Million cubic feet
Saw logs	*k fbm* [a]						
Softwood		735,248	140.6	734,883	138.7	365	1.9
Hardwood		32,005	5.4	32,005	5.4	—	—
Total		767,253	146.0	766,888	144.0	365	1.9
Veneer logs and bolts	*k fbm* [a]						
Softwood		138,881	23.9	138,881	23.9	—	—
Hardwood		15,723	2.5	15,723	2.5	—	—
Total		154,604	26.5	154,604	26.5	—	—
Pulpwood[b]	*Cords* [c]						
Softwood		4,369,169	310.2	3,676,620	261.0	692,549	49.2
Hardwood		557,387	41.8	546,347	41.0	11,040	0.8
Total		4,926,556	352.0	4,222,967	302.0	703,589	50.0
Poles and piling	*h pieces*						
Softwood		3,524	6.3	3,524	6.3	—	—
Hardwood		—	—	—	—	—	—
Total		3,524	6.3	3,524	6.3	—	—
Posts (round and split)	*k pieces*						
Softwood		2,136	2.1	2,136	2.1	—	—
Hardwood		165	0.2	165	0.2	—	—
Total		2,301	2.3	2,301	2.3	—	—
Other[d]	*k ft*^{3}						
Softwood		42,750	42.8	15,564	15.6	27,186	27.2
Hardwood		4,563	4.6	3,080	3.1	1,483	1.5
Total		47,313	47.3	18,644	18.6	28,669	28.7
Total industrial products							
Softwood		—	526.0	—	447.7	—	78.3
Hardwood		—	54.5	—	52.2	—	2.3
Total		—	580.4	—	499.8	—	80.6
Fuelwood[e]	*Cords*						
Softwood		53,384	3.9	52,973	3.9	411	0.0
Hardwood		304,640	22.8	303,333	22.8	1,307	0.1
Total		358,024	26.7	356,306	26.6	1,718	0.1
All products							
Softwood		—	529.9	—	451.6	—	78.3
Hardwood		—	77.3	—	74.9	—	2.4
Total		—	607.2	—	526.5	—	80.7

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

[a] International 1/4-inch rule.

[b] Roundwood figures include an estimated 13.7 million cubic feet of roundwood chipped at other primary wood-using plants.

[c] Rough-wood basis (includes chips converted to equivalent standard cords).

[d] Includes liter, mulch, particleboard, charcoal, and other specialty products.

[e] Excludes approximately 35.6 million cubic feet of wood residues and 52.8 million cubic feet of bark used for industrial fuel.

Table 38—Average annual output of roundwood products by product, species group, and source of material, Florida, 1987-1994

Product and species group	All sources	Growing-stock trees[a]			Cull trees[a]	Salvable dead trees[a]	Other sources[b]
		Total	Sawtimber	Poletimber			
				Million cubic feet			
Saw logs							
Softwood	138.7	133.5	123.1	10.5	1.0	0.5	3.7
Hardwood	5.4	5.4	4.9	0.4	—	—	0.0
Total	144.0	138.9	128.0	10.9	1.0	0.5	3.7
Veneer logs and bolts							
Softwood	23.9	23.6	23.3	0.3	—	—	0.4
Hardwood	2.5	2.5	2.5	—	—	—	0.0
Total	26.5	26.1	25.8	0.3	—	—	0.4
Pulpwood							
Softwood	261.0	239.5	71.1	168.4	0.7	0.4	20.4
Hardwood	41.0	32.5	21.6	10.8	4.6	—	3.9
Total	302.0	272.0	92.8	179.2	5.3	0.4	24.3
Poles and piling							
Softwood	6.3	6.2	5.9	0.3	—	—	0.1
Hardwood	—	—	—	—	—	—	—
Total	6.3	6.2	5.9	0.3	—	—	0.1
Posts (round and split)							
Softwood	2.1	1.8	0.2	1.5	—	—	0.4
Hardwood	0.2	0.1	—	0.1	0.0	—	0.0
Total	2.3	1.9	0.2	1.7	0.0	—	0.4
Other							
Softwood	15.6	11.9	10.0	1.9	—	—	3.7
Hardwood	3.1	2.9	0.3	2.6	—	—	0.2
Total	18.6	14.8	10.3	4.4	—	—	3.9
Total industrial products							
Softwood	447.7	416.4	233.5	182.9	1.7	0.9	28.7
Hardwood	52.2	43.4	29.4	14.0	4.7	—	4.1
Total	499.8	459.8	263.0	196.8	6.3	0.9	32.8
Fuelwood							
Softwood	3.9	2.9	2.6	0.3	0.0	0.2	0.8
Hardwood	22.8	9.6	6.5	3.1	8.0	2.7	2.5
Total	26.6	12.5	9.1	3.4	8.0	2.8	3.3
All products							
Softwood	451.6	419.3	236.1	183.2	1.7	1.0	29.5
Hardwood	74.9	53.0	35.9	17.1	12.7	2.7	6.5
Total	526.5	472.3	272.0	200.3	14.3	3.7	36.1

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

[a] On timberland.

[b] Includes trees less than 5.0 inches in diameter, tree tops and limbs from timberland, or material from other forest land or nonforest land such as fence rows or suburban areas.

Table 39—Average annual timber removals from growing stock on timberland by item, softwood, and hardwood, Florida, 1987-1994

Item	All species	Softwood	Hardwood
		Million cubic feet	
Roundwood products			
Saw logs	138.9	133.5	5.4
Veneer logs and bolts	26.1	23.6	2.5
Pulpwood	272.0	239.5	32.5
Poles and piling	6.2	6.2	—
Posts	1.9	1.8	0.1
Other	14.8	11.9	2.9
Fuelwood	12.5	2.9	9.6
All products	472.3	419.3	53.0
Logging residues	36.0	25.6	10.3
Other removals	52.4	27.7	24.8
Total removals	560.7	472.6	88.1

Numbers in rows and columns may not sum to totals due to rounding.
A dash (—) indicates no sample for the cell; 0.0 indicates a value of
of >0.0 but <0.05 for the cell.

Table 40—Average annual timber removals from live sawtimber on timberland by item, softwood, and hardwood, Florida, 1987-1994

Item	All species	Softwood	Hardwood
		Million board feet	
Roundwood products			
Saw logs	640.7	609.5	31.2
Veneer logs and bolts	153.8	137.5	16.3
Pulpwood	386.0	277.2	108.8
Poles and piling	29.1	29.1	—
Posts	0.9	0.9	—
Other	40.4	39.0	1.4
Fuelwood	39.9	12.9	27.0
All products	1,290.8	1,106.1	184.7
Logging residues	23.0	16.3	6.8
Other removals	169.1	95.5	73.6
Total removals	1,482.9	1,217.9	265.0

Numbers in rows and columns may not sum to totals due to rounding.
A dash (—) indicates no sample for the cell; 0.0 indicates a value
of >0.0 but <0.05 for the cell.

Table 41—Disposal of average annual volume of residue at primary wood-using plants by product, species group, and type of residue, Florida, 1987-1994

Product and species group	All types	Bark	Coarse[a]	Fine[b]
		Million cubic feet		
Fiber products				
Softwood	49.2	0.8	46.5	1.9
Hardwood	0.8	0.2	0.7	—
Total	50.0	0.9	47.2	1.9
Particleboard				
Softwood	2.8	0.0	0.2	2.5
Hardwood	—	—	—	—
Total	2.8	0.0	0.2	2.5
Sawn products				
Softwood	1.9	0.0	1.9	—
Hardwood	—	—	—	—
Total	1.9	0.0	1.9	—
Industrial fuel				
Softwood	81.8	47.1	3.7	31.0
Hardwood	6.6	5.7	0.3	0.6
Total	88.3	52.8	4.0	31.6
Domestic fuel				
Softwood	0.0	0.0	0.0	—
Hardwood	0.1	0.0	0.1	0.0
Total	0.1	0.0	0.1	0.0
Miscellaneous				
Softwood	24.4	7.7	7.9	8.8
Hardwood	1.5	0.5	0.5	0.5
Total	25.9	8.2	8.4	9.3
Not used				
Softwood	0.6	0.2	0.3	0.0
Hardwood	0.0	—	0.0	0.0
Total	0.6	0.2	0.4	0.1
All products				
Softwood	160.7	55.8	60.6	44.2
Hardwood	9.0	6.4	1.5	1.1
Total	169.7	62.2	62.1	45.4

Numbers in rows and columns may not sum to totals due to rounding.
A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

[a] Material such as slabs and edgings.

[b] Material such as sawdust and shavings.

Table 42—Land area by land use class, major forest type, and survey completion date, Florida

Land use class	Survey completion date			Change
	1980	1987	1995	1987-1995
	Thousand acres			
Forest land				
Timberland				
Pine and oak–pine types	9,193.7	8,737.3	8,916.8	179.4
Hardwood types	6,470.5	6,245.3	5,733.9	-511.4
Total	15,664.2	14,982.6	14,650.7	-331.9
Reserved timberland	411.8	403.6	522.7	119.1
Other	1,057.9	1,162.8	1,047.9	-115.0
Total forest land	17,133.9	16,549.0	16,221.2	-327.8
Nonforest land				
Cropland	3,784.5	3,937.2	3,616.3	-320.9
Pasture and range	6,991.5	6,324.1	5,925.7	-398.4
Other	6,622.5	7,721.5	8,641.8	920.3
Total	17,398.5	17,982.7	18,183.8	201.1
All land[a]	34,532.4	34,531.7	34,405.0	-126.7

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

[a] Excludes all water areas.

Table 43—Volume of sawtimber, growing stock, and live timber on timberland by species group, survey completion date, and diameter class, Florida

Species group and year	All classes	Diameter class *(inches at breast height)* 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 and larger
					Sawtimber *(million board feet)*					
Softwood										
1980	25,288.9	—	—	5,915.9	6,617.6	5,129.4	3,207.7	1,864.6	1,091.4	1,462.4
1987	26,811.1	—	—	5,638.8	6,213.7	5,424.1	3,636.6	2,311.2	1,413.9	2,172.8
1995	28,311.5	—	—	5,730.8	6,275.8	5,923.8	4,251.0	2,545.7	1,634.6	1,949.9
Hardwood										
1980	12,862.3	—	—	—	2,277.5	2,446.8	1,964.8	1,670.6	1,310.4	3,192.2
1987	14,956.3	—	—	—	2,566.2	2,564.0	2,398.4	1,913.6	1,513.6	4,000.6
1995	16,975.7	—	—	—	2,981.7	3,214.8	2,740.3	2,251.8	1,642.3	4,144.7
					Growing Stock *(million cubic feet)*					
Softwood										
1980	8,940.4	1,445.9	1,775.4	1,709.8	1,547.2	1,067.9	617.8	341.6	192.1	242.7
1987	9,005.7	1,386.6	1,776.3	1,613.8	1,432.6	1,106.0	683.9	411.5	242.0	352.9
1995	9,424.4	1,571.7	1,867.4	1,602.7	1,416.2	1,178.2	776.6	438.9	269.5	303.3
Hardwood										
1980	4,874.3	464.6	585.9	677.1	744.9	669.4	482.9	376.6	277.8	594.9
1987	5,416.4	518.5	649.5	750.3	779.3	667.5	563.9	419.6	314.2	753.6
1995	5,942.0	588.0	707.3	845.6	863.2	797.1	610.4	465.1	320.8	744.3
					Live Timber[a] *(million cubic feet)*					
Softwood										
1980	9,088.6	1,482.3	1,808.6	1,734.2	1,562.0	1,077.5	624.8	343.7	193.5	262.0
1987	9,131.7	1,408.7	1,802.6	1,635.8	1,444.9	1,113.8	691.2	417.4	244.0	373.3
1995	9,525.6	1,593.0	1,886.8	1,617.1	1,426.0	1,185.4	782.9	442.0	270.4	321.9
Hardwood										
1980	6,470.9	741.4	841.7	905.1	928.8	812.4	601.7	458.6	353.7	827.5
1987	7,007.0	780.0	879.8	962.0	962.4	804.8	675.9	511.6	384.9	1,045.6
1995	7,490.0	852.0	920.7	1,046.4	1,025.9	929.5	734.7	555.2	400.1	1,025.6

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

[a] Merchantable volume.

Table 44—Merchantable volume of live timber by species group, survey unit, and survey completion date, Florida

Species group and survey unit	1980	1987	Change 1980-1987	1995	Change 1987-1995
	Million cubic feet	*Million cubic feet*	*Percent*	*Million cubic feet*	*Percent*
Softwood					
Northeast	4,274.7	4,085.2	- 4.4	4,251.4	4.1
Northwest	3,102.4	3,101.7	- 0.0	3,317.0	6.9
Central	1,315.4	1,484.9	12.9	1,513.7	1.9
South	396.1	459.8	16.1	443.6	- 3.5
All units	9,088.6	9,131.7	0.5	9,525.6	4.3
Hardwood					
Northeast	2,765.8	2,906.7	5.1	3,138.6	8.0
Northwest	2,385.6	2,546.8	6.8	2,706.8	6.3
Central	1,250.9	1,472.2	17.7	1,563.0	6.2
South	68.6	81.4	18.6	81.7	0.4
All units	6,470.9	7,007.0	8.3	7,490.0	6.9

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

Table 45—Land area and total forest by county, Florida, 1995

County	All land[a]	Total forest[b]	
	Thousand acres	*Thousand acres*	*Percent*
Alachua	559.6	293.2	52.40
Baker	374.6	341.4	91.15
Bay	488.8	399.6	81.75
Bradford	187.6	135.2	72.06
Brevard	651.8	100.0	15.33
Broward	773.7	21.1	2.73
Calhoun	363.1	302.6	83.33
Charlotte	443.9	50.7	11.41
Citrus	373.5	194.8	52.15
Clay	384.7	289.8	75.34
Collier	1,296.3	602.7	46.49
Columbia	510.2	367.7	72.08
Dade	1,244.5	160.6	12.91
De Soto	407.9	47.8	11.71
Dixie	450.6	387.1	85.90
Duval	495.3	232.6	46.96
Escambia	424.7	257.0	60.51
Flagler	310.4	241.1	77.68
Franklin	341.7	302.1	88.39
Gadsden	330.3	253.9	76.85
Gilchrist	223.3	134.7	60.32
Glades	495.0	103.4	20.88
Gulf	361.6	312.2	86.32
Hamilton	329.5	242.4	73.56
Hardee	407.9	79.5	19.50
Hendry	737.7	71.6	9.71
Hernando	306.1	158.4	51.73
Highlands	658.2	85.6	13.00
Hillsborough	672.7	122.6	18.22
Holmes	308.8	211.1	68.35
Indian River	322.1	31.2	9.68
Jackson	586.1	327.1	55.82
Jefferson	382.6	286.5	74.88
Lafayette	347.4	297.3	85.58
Lake	610.0	269.4	44.17
Lee	514.3	118.7	23.08
Leon	426.8	306.1	71.72
Levy	715.8	476.6	66.58
Liberty	535.0	513.3	95.94
Madison	442.9	326.4	73.70
Manatee	474.4	52.5	11.06
Marion	1,010.6	588.1	58.20
Martin	355.6	51.4	14.46
Monroe	638.3	364.9	57.17
Nassau	417.0	324.8	77.89
Okaloosa	598.9	449.2	75.01
Okeechobee	495.6	45.4	9.16
Orange	580.9	172.8	29.75
Osceola	846.1	184.5	21.80
Palm Beach	1,302.0	122.4	9.40
Pasco	476.8	159.5	33.44
Pinellas	179.3	18.1	10.11
Polk	1,200.0	283.3	23.61
Putnam	462.2	350.7	75.88
Santa Rosa	650.1	479.8	73.80
Sarasota	365.9	59.6	16.29
Seminole	197.3	74.5	37.75
St. Johns	389.8	250.8	64.35
St. Lucie	366.4	24.5	6.69
Sumter	349.2	155.5	44.54
Suwannee	440.1	233.7	53.09
Taylor	666.8	582.8	87.39
Union	153.8	121.4	78.93
Volusia	707.8	461.5	65.20
Wakulla	388.3	340.3	87.63
Walton	676.9	522.2	77.15
Washington	371.1	292.1	78.71
Total	34,558.1	16,221.2	46.94

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

[a] Excludes inland water.

[b] Includes timberland, reserved timberland, and other.

Table 46—Area of timberland by county and ownership class, Florida, 1995

County	All ownerships	Ownership class			
		National forest	Other public	Forest industry[a]	Other private
	Thousand acres				
Alachua	277.5	—	5.0	112.6	159.8
Baker	326.5	86.8	3.9	194.8	41.0
Bay	396.4	—	28.7	209.9	157.7
Bradford	135.2	—	16.4	79.8	38.9
Brevard	93.1	—	18.1	—	75.0
Broward	—	—	—	—	—
Calhoun	302.6	—	0.1	138.8	163.7
Charlotte	30.3	—	7.3	—	23.0
Citrus	185.9	—	49.2	—	136.7
Clay	288.2	—	71.5	69.3	147.5
Collier	190.5	—	9.1	—	181.4
Columbia	357.5	80.1	5.5	142.4	129.5
Dade	—	—	—	—	—
De Soto	47.8	—	3.1	—	44.6
Dixie	385.7	—	22.2	280.6	82.9
Duval	229.6	—	28.8	41.4	159.3
Escambia	250.8	—	8.4	102.3	140.1
Flagler	237.6	—	1.7	163.8	72.1
Franklin	301.5	19.7	53.4	104.9	123.6
Gadsden	253.4	—	10.3	104.2	138.8
Gilchrist	134.7	—	0.3	26.4	108.0
Glades	91.6	—	0.1	—	91.6
Gulf	310.2	—	35.9	252.5	21.8
Hamilton	240.1	—	13.1	111.3	115.7
Hardee	79.5	—	0.8	—	78.7
Hendry	62.8	—	0.5	—	62.4
Hernando	155.9	—	57.7	—	98.2
Highlands	78.8	—	23.1	—	55.7
Hillsborough	96.5	—	17.8	—	78.6
Holmes	210.7	—	4.3	32.4	174.0
Indian River	22.8	—	0.8	—	22.0
Jackson	325.4	—	14.8	25.1	285.5
Jefferson	284.4	—	14.1	163.4	106.9
Lafayette	297.3	—	2.8	206.6	87.9
Lake	248.5	69.4	21.1	—	158.0
Lee	60.9	—	8.9	—	52.0
Leon	305.4	103.7	10.1	54.5	137.1
Levy	462.8	—	63.2	171.6	228.0
Liberty	503.2	258.2	22.3	153.6	69.2
Madison	326.4	—	7.6	121.5	197.3
Manatee	40.0	—	9.2	—	30.8
Marion	568.3	245.6	37.3	68.1	217.3
Martin	40.6	—	12.2	—	28.5
Monroe	—	—	—	—	—
Nassau	323.4	—	6.4	209.5	107.5
Okaloosa	448.3	—	271.8	55.1	121.3
Okeechobee	43.3	—	0.8	—	42.5
Orange	149.3	—	30.6	—	118.7
Osceola	181.5	—	32.7	—	148.8
Palm Beach	—	—	—	—	—
Pasco	159.1	—	65.2	—	93.9
Pinellas	6.5	—	2.6	—	3.9
Polk	243.2	—	35.0	—	208.2
Putnam	347.8	19.9	29.0	101.4	197.5
Santa Rosa	478.1	—	187.5	166.0	124.6
Sarasota	48.8	—	3.0	—	45.8
Seminole	72.5	—	6.9	—	65.6
St. Johns	245.3	—	4.8	136.3	104.3
St. Lucie	20.6	—	0.4	—	20.2
Sumter	149.9	—	78.2	—	71.7
Suwannee	231.5	—	5.7	12.7	213.1
Taylor	579.4	—	54.8	487.4	37.3
Union	121.4	—	3.9	75.5	41.9
Volusia	440.9	—	41.4	41.8	357.7
Wakulla	314.3	146.1	29.7	54.1	84.3
Walton	516.8	—	173.5	103.4	239.8
Washington	291.9	—	17.7	26.5	247.7
Total	14,650.7	1,029.5	1,802.3	4,601.5	7,217.4

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

[a] Includes 586.0 thousand acres of other private land under long-term lease.

Table 47—Area of timberland by county and forest management type, Florida, 1995

County	All ownerships	Forest management type				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
	Thousand acres					
Alachua	277.5	121.5	27.1	18.9	72.8	37.2
Baker	326.5	150.4	75.2	12.3	2.7	85.9
Bay	396.4	264.6	59.1	19.6	17.6	35.4
Bradford	135.2	54.7	39.0	9.4	9.7	22.4
Brevard	93.1	9.7	27.0	2.4	22.0	32.0
Broward	—	—	—	—	—	—
Calhoun	302.6	145.3	38.5	31.7	27.8	59.4
Charlotte	30.3	1.5	12.5	—	—	16.3
Citrus	185.9	13.7	28.5	42.9	62.1	38.7
Clay	288.2	105.0	61.6	21.1	49.4	51.2
Collier	190.5	—	28.1	8.4	10.0	144.0
Columbia	357.5	136.8	59.0	19.3	54.2	88.2
Dade	—	—	—	—	—	—
De Soto	47.8	—	9.9	—	23.9	13.9
Dixie	385.7	151.9	16.1	13.6	41.5	162.5
Duval	229.6	69.8	55.8	34.0	31.6	38.4
Escambia	250.8	83.5	76.3	33.1	19.5	38.4
Flagler	237.6	111.2	36.6	19.2	16.1	54.5
Franklin	301.5	152.3	58.8	24.3	5.5	60.6
Gadsden	253.4	92.5	24.3	34.8	49.5	52.3
Gilchrist	134.7	68.3	4.7	16.4	31.5	13.7
Glades	91.6	22.9	23.0	2.9	5.7	37.2
Gulf	310.2	117.8	65.0	16.0	6.5	105.0
Hamilton	240.1	110.7	7.4	31.5	31.7	58.9
Hardee	79.5	—	17.9	3.6	28.7	29.4
Hendry	62.8	—	12.9	4.2	4.2	41.6
Hernando	155.9	19.9	28.6	20.5	65.6	21.1
Highlands	78.8	2.5	16.3	14.2	16.8	28.9
Hillsborough	96.5	2.6	15.7	10.5	11.9	55.8
Holmes	210.7	78.9	21.8	31.6	32.6	45.8
Indian River	22.8	—	12.2	2.4	2.4	5.7
Jackson	325.4	103.9	35.3	30.0	77.9	78.5
Jefferson	284.4	111.5	22.3	22.7	33.1	94.8
Lafayette	297.3	112.9	38.1	34.5	32.6	79.3
Lake	248.5	54.6	44.6	27.1	32.2	90.0
Lee	60.9	—	29.8	5.5	2.7	22.9
Leon	305.4	79.3	78.8	56.9	48.2	42.2
Levy	462.8	170.4	42.2	41.3	88.7	120.2
Liberty	503.2	153.9	142.5	21.6	13.7	171.5
Madison	326.4	114.9	31.3	20.8	59.4	100.1
Manatee	40.0	9.2	6.2	2.1	10.3	12.3
Marion	568.3	145.6	150.8	76.9	134.4	60.5
Martin	40.6	—	29.3	2.9	2.8	5.7
Monroe	—	—	—	—	—	—
Nassau	323.4	137.2	38.0	30.3	29.9	88.0
Okaloosa	448.3	64.0	174.1	94.6	62.2	53.3
Okeechobee	43.3	2.8	8.5	2.8	—	29.2
Orange	149.3	3.0	44.1	11.9	17.8	72.6
Osceola	181.5	2.7	27.9	18.0	19.8	113.1
Palm Beach	—	—	—	—	—	—
Pasco	159.1	22.2	18.1	16.1	39.0	63.7
Pinellas	6.5	—	1.3	1.3	—	3.9
Polk	243.2	27.0	41.0	18.8	54.5	101.8
Putnam	347.8	115.9	84.6	37.0	57.4	52.9
Santa Rosa	478.1	111.5	129.7	105.5	47.8	83.6
Sarasota	48.8	3.3	20.5	0.4	9.0	15.6
Seminole	72.5	—	11.7	15.4	11.6	33.8
St. Johns	245.3	88.0	49.5	32.6	6.8	68.5
St. Lucie	20.6	—	12.8	2.5	—	5.3
Sumter	149.9	14.0	42.6	8.1	41.5	43.6
Suwannee	231.5	95.1	28.9	17.9	71.1	18.5
Taylor	579.4	299.4	49.7	24.0	38.0	168.3
Union	121.4	70.6	18.3	4.9	2.3	25.3
Volusia	440.9	77.7	127.9	66.6	34.2	134.6
Wakulla	314.3	97.7	93.6	35.3	38.9	48.7
Walton	516.8	154.9	145.1	57.3	79.9	79.6
Washington	291.9	102.6	26.4	36.7	61.9	64.4
Total	14,650.7	4,633.7	2,804.1	1,479.0	2,013.3	3,720.5

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Table 48—Merchantable volume of live timber 5.0 inches d.b.h. and larger on timberland by county and species group, Florida, 1995

County	All species	Softwoods			Hardwoods		
		All softwoods	Yellow pine	Other softwood	All hardwoods	Soft hardwood	Hard hardwood
	Million cubic feet						
Alachua	341.4	190.6	150.2	40.4	150.7	54.8	95.9
Baker	389.0	299.6	236.9	62.7	89.4	84.6	4.8
Bay	179.8	140.8	133.4	7.4	39.0	25.3	13.7
Bradford	131.8	92.0	84.0	8.0	39.8	22.2	17.6
Brevard	103.7	53.0	47.5	5.4	50.7	20.7	30.0
Broward	—	—	—	—	—	—	—
Calhoun	280.8	169.3	151.5	17.8	111.5	71.7	39.8
Charlotte	33.0	31.0	13.9	17.1	2.0	—	2.0
Citrus	179.4	80.6	47.2	33.4	98.8	34.2	64.7
Clay	333.1	186.0	173.4	12.7	147.1	61.7	85.5
Collier	212.4	183.0	36.4	146.6	29.5	13.5	16.0
Columbia	422.7	258.5	207.6	50.8	164.2	107.9	56.3
Dade	—	—	—	—	—	—	—
De Soto	61.9	9.5	3.6	6.0	52.4	22.4	30.0
Dixie	485.4	254.3	173.4	80.9	231.1	96.4	134.7
Duval	345.8	190.1	175.1	15.1	155.7	90.4	65.3
Escambia	351.3	218.4	213.1	5.4	132.9	91.0	41.9
Flagler	318.5	233.2	155.3	77.9	85.3	53.6	31.7
Franklin	297.1	216.1	167.7	48.3	81.1	65.6	15.5
Gadsden	315.2	120.4	120.4	—	194.8	101.8	93.0
Gilchrist	127.6	92.4	74.8	17.6	35.1	5.8	29.3
Glades	65.6	46.8	13.9	32.9	18.8	6.3	12.5
Gulf	310.4	137.0	73.5	63.5	173.4	119.8	53.7
Hamilton	266.3	138.3	114.1	24.2	128.0	61.5	66.5
Hardee	134.3	56.5	30.8	25.8	77.8	19.4	58.3
Hendry	119.0	98.4	4.7	93.6	20.6	8.2	12.4
Hernando	218.9	75.2	68.3	6.9	143.7	54.8	88.9
Highlands	89.7	48.0	16.3	31.7	41.7	19.8	21.9
Hillsborough	216.2	122.5	25.4	97.1	93.7	36.5	57.2
Holmes	192.1	82.1	72.7	9.5	110.0	78.3	31.7
Indian River	25.2	19.6	13.1	6.5	5.5	0.2	5.3
Jackson	307.7	106.7	83.0	23.7	201.0	117.9	83.2
Jefferson	423.6	120.9	79.1	41.8	302.7	166.5	136.2
Lafayette	225.8	114.6	76.8	37.8	111.2	49.4	61.8
Lake	314.8	165.6	108.0	57.5	149.3	96.7	52.6
Lee	59.1	53.0	18.3	34.7	6.1	—	6.1
Leon	370.8	196.4	189.0	7.4	174.4	93.2	81.2
Levy	641.0	374.7	278.5	96.2	266.3	114.9	151.4
Liberty	630.6	363.9	262.0	101.9	266.7	192.6	74.1
Madison	300.0	125.6	75.7	49.9	174.4	110.5	63.9
Manatee	49.2	3.5	3.5	—	45.8	17.6	28.2
Marion	600.7	359.2	337.2	22.0	241.5	86.2	155.3
Martin	36.1	31.5	29.1	2.3	4.6	—	4.6
Monroe	—	—	—	—	—	—	—
Nassau	442.4	226.5	187.9	38.7	215.8	145.3	70.6
Okaloosa	525.8	356.9	335.2	21.7	168.9	96.8	72.0
Okeechobee	97.5	36.5	16.4	20.1	61.0	42.8	18.2
Orange	217.3	133.2	53.1	80.1	84.1	62.1	22.1
Osceola	326.6	213.9	50.5	163.4	112.7	70.4	42.3
Palm Beach	—	—	—	—	—	—	—
Pasco	230.0	94.4	12.9	81.5	135.6	49.0	86.6
Pinellas	10.8	7.9	4.1	3.8	2.9	2.1	0.8
Polk	354.3	192.0	80.6	111.4	162.4	105.9	56.4
Putnam	333.7	185.2	172.9	12.3	148.5	81.4	67.1
Santa Rosa	645.1	416.4	350.5	65.9	228.8	160.1	68.7
Sarasota	43.2	16.9	16.9	—	26.3	4.6	21.8
Seminole	98.5	32.9	31.6	1.2	65.6	16.5	49.2
St. Johns	301.1	167.9	142.2	25.7	133.2	82.2	51.0
St. Lucie	15.3	10.5	8.4	2.1	4.8	0.7	4.1
Sumter	289.8	141.6	54.8	86.8	148.3	54.9	93.4
Suwannee	251.3	103.6	103.4	0.2	147.7	33.0	114.7
Taylor	436.8	227.5	151.7	75.8	209.3	107.4	101.8
Union	143.7	88.5	68.7	19.8	55.3	47.2	8.0
Volusia	552.0	343.1	211.4	131.7	208.9	122.3	86.6
Wakulla	357.2	209.1	199.4	9.6	148.2	82.8	65.4
Walton	535.0	339.0	324.2	14.8	196.0	126.4	69.6
Washington	301.1	123.8	88.3	35.5	177.3	104.3	73.1
Total	17,015.7	9,525.6	7,003.1	2,522.6	7,490.0	4,071.8	3,418.2

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Table 49—Volume of growing stock on timberland by county and species group, Florida, 1995

County	All species	Softwoods			Hardwoods		
		All softwoods	Yellow pine	Other softwood	All hardwoods	Soft hardwood	Hard hardwood
	Million cubic feet						
Alachua	308.7	190.3	149.9	40.4	118.3	46.8	71.6
Baker	381.3	299.3	236.9	62.4	82.0	78.1	4.0
Bay	174.1	140.5	133.1	7.4	33.6	22.2	11.4
Bradford	126.7	92.0	84.0	8.0	34.7	20.2	14.5
Brevard	85.8	52.6	47.4	5.1	33.2	14.8	18.4
Broward	—	—	—	—	—	—	—
Calhoun	256.3	166.2	149.2	17.0	90.1	58.0	32.0
Charlotte	31.2	30.5	13.9	16.6	0.7	—	0.7
Citrus	140.8	79.6	46.4	33.2	61.2	27.7	33.5
Clay	293.9	185.8	173.2	12.7	108.1	57.5	50.5
Collier	191.3	174.9	36.4	138.5	16.5	11.4	5.1
Columbia	393.0	257.1	206.9	50.2	136.0	94.7	41.3
Dade	—	—	—	—	—	—	—
De Soto	39.0	9.5	3.6	6.0	29.5	19.6	9.8
Dixie	434.9	252.8	173.4	79.5	182.0	88.4	93.7
Duval	323.6	189.9	175.1	14.9	133.6	84.7	48.9
Escambia	330.7	218.1	212.8	5.4	112.6	83.6	29.0
Flagler	307.1	231.4	154.1	77.3	75.7	51.7	24.0
Franklin	275.0	210.8	166.1	44.7	64.2	54.5	9.7
Gadsden	284.6	120.4	120.4	—	164.3	89.8	74.5
Gilchrist	116.3	92.4	74.8	17.6	23.8	5.2	18.7
Glades	53.0	46.5	13.9	32.6	6.5	4.7	1.8
Gulf	246.7	131.3	73.5	57.8	115.4	97.4	18.0
Hamilton	251.7	138.3	114.1	24.2	113.4	57.2	56.2
Hardee	99.1	55.9	30.8	25.2	43.2	15.2	28.1
Hendry	102.1	93.8	4.7	89.1	8.3	2.6	5.7
Hernando	191.2	75.2	68.3	6.9	116.0	52.5	63.6
Highlands	71.9	47.6	16.3	31.3	24.4	15.8	8.6
Hillsborough	196.6	122.0	25.4	96.6	74.7	32.8	41.9
Holmes	177.7	80.4	71.7	8.7	97.3	70.6	26.6
Indian River	21.0	19.3	12.8	6.5	1.7	0.2	1.5
Jackson	282.0	105.5	82.8	22.7	176.5	107.7	68.8
Jefferson	386.6	120.4	79.1	41.3	266.1	158.0	108.2
Lafayette	206.4	113.0	75.6	37.4	93.3	44.1	49.2
Lake	273.9	162.8	107.3	55.5	111.1	77.1	34.0
Lee	47.7	47.0	17.7	29.3	0.7	—	0.7
Leon	348.3	195.8	188.4	7.4	152.5	82.0	70.4
Levy	575.6	370.5	276.9	93.7	205.0	100.8	104.3
Liberty	570.9	353.8	260.6	93.2	217.1	161.7	55.5
Madison	268.9	124.7	75.2	49.5	144.2	101.6	42.6
Manatee	30.1	3.2	3.2	—	26.9	14.1	12.9
Marion	555.0	358.7	336.8	22.0	196.2	80.0	116.2
Martin	31.5	30.6	28.3	2.3	0.9	—	0.9
Monroe	—	—	—	—	—	—	—
Nassau	396.0	225.4	187.4	38.0	170.6	123.4	47.1
Okaloosa	461.5	352.4	333.2	19.2	109.1	73.4	35.7
Okeechobee	76.1	36.1	16.4	19.7	40.0	32.3	7.7
Orange	201.5	132.3	53.1	79.3	69.2	55.8	13.4
Osceola	306.0	211.6	50.5	161.1	94.4	63.1	31.3
Palm Beach	—	—	—	—	—	—	—
Pasco	193.6	93.8	12.6	81.1	99.8	45.3	54.5
Pinellas	10.2	7.9	4.1	3.8	2.4	1.5	0.8
Polk	317.7	190.7	80.3	110.4	127.0	91.7	35.3
Putnam	304.6	183.9	172.4	11.5	120.7	76.7	44.0
Santa Rosa	601.3	413.7	349.2	64.4	187.7	136.0	51.7
Sarasota	25.6	16.9	16.9	—	8.7	3.8	4.9
Seminole	77.3	32.2	30.9	1.2	45.1	12.2	32.9
St. Johns	279.3	165.7	142.2	23.5	113.6	76.5	37.1
St. Lucie	11.4	10.5	8.4	2.1	0.9	0.3	0.6
Sumter	266.0	140.8	54.8	86.0	125.3	50.2	75.0
Suwannee	220.6	102.0	102.0	—	118.6	28.7	89.9
Taylor	399.1	226.1	150.8	75.3	173.0	98.5	74.5
Union	138.0	87.6	68.4	19.2	50.4	43.5	6.8
Volusia	508.8	338.2	210.6	127.6	170.6	116.1	54.4
Wakulla	335.3	208.6	198.9	9.6	126.7	72.2	54.5
Walton	494.7	336.5	323.2	13.3	158.2	117.5	40.7
Washington	259.9	121.0	87.9	33.0	139.0	87.1	51.8
Total	15,366.4	9,424.4	6,975.1	2,449.3	5,942.0	3,590.7	2,351.3

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Table 50—Volume of sawtimber on timberland by county and species group, Florida, 1995

County	All species	Softwoods			Hardwoods		
		All softwoods	Yellow pine	Other softwood	All hardwoods	Soft hardwood	Hard hardwood
	Million board feet						
Alachua	817.1	422.4	267.0	155.3	394.7	121.2	273.5
Baker	1,051.7	871.1	681.4	189.7	180.6	171.1	9.4
Bay	234.1	152.7	136.6	16.1	81.4	63.8	17.6
Bradford	265.1	182.0	164.2	17.7	83.1	24.5	58.7
Brevard	252.9	123.2	108.1	15.0	129.8	57.3	72.4
Broward	—	—	—	—	—	—	—
Calhoun	739.2	450.0	384.9	65.1	289.3	168.2	121.0
Charlotte	74.5	71.6	37.8	33.7	2.9	—	2.9
Citrus	474.6	294.8	157.3	137.5	179.8	79.5	100.3
Clay	789.4	510.6	464.3	46.3	278.8	120.6	158.2
Collier	587.4	548.0	121.9	426.0	39.4	23.1	16.3
Columbia	1,069.5	807.0	643.7	163.2	262.5	147.1	115.4
Dade	—	—	—	—	—	—	—
De Soto	142.4	42.2	18.6	23.6	100.3	65.3	35.0
Dixie	1,040.5	571.6	348.5	223.1	468.9	193.7	275.2
Duval	1,009.8	607.0	556.7	50.3	402.9	220.9	181.9
Escambia	1,087.8	714.7	698.6	16.1	373.1	277.3	95.8
Flagler	906.7	658.3	430.8	227.5	248.3	141.8	106.6
Franklin	667.2	473.1	340.1	133.1	194.1	168.4	25.7
Gadsden	868.0	363.8	363.8	—	504.2	250.3	253.9
Gilchrist	224.5	157.2	107.5	49.7	67.3	4.7	62.6
Glades	191.8	172.8	46.2	126.5	19.0	10.1	9.0
Gulf	700.3	350.0	173.6	176.4	350.3	288.9	61.4
Hamilton	561.5	258.1	207.3	50.8	303.4	97.7	205.7
Hardee	365.3	234.7	152.6	82.1	130.6	27.8	102.8
Hendry	365.4	329.6	19.7	309.9	35.7	12.0	23.8
Hernando	611.2	256.4	225.1	31.3	354.8	150.5	204.4
Highlands	263.0	194.1	65.0	129.1	68.9	34.4	34.5
Hillsborough	594.5	362.3	113.3	249.1	232.1	94.9	137.2
Holmes	462.1	253.9	221.5	32.4	208.2	128.9	79.3
Indian River	86.0	79.8	61.0	18.8	6.2	—	6.2
Jackson	767.5	322.6	249.0	73.7	444.8	224.2	220.6
Jefferson	1,294.2	470.2	301.2	169.0	824.0	438.2	385.8
Lafayette	535.3	295.9	195.1	100.8	239.5	65.6	173.8
Lake	846.9	519.0	381.5	137.5	327.9	200.0	127.9
Lee	67.4	67.4	26.0	41.3	—	—	—
Leon	1,238.5	742.0	725.7	16.3	496.5	253.7	242.9
Levy	1,630.9	1,017.8	746.0	271.7	613.1	251.2	361.9
Liberty	1,905.9	1,207.4	858.6	348.7	698.6	462.8	235.8
Madison	731.8	353.3	193.0	160.3	378.5	236.3	142.3
Manatee	117.8	14.4	14.4	—	103.4	57.0	46.4
Marion	1,693.0	1,051.9	983.5	68.5	641.0	224.7	416.3
Martin	107.8	104.4	104.4	—	3.4	—	3.4
Monroe	—	—	—	—	—	—	—
Nassau	1,017.4	639.1	519.6	119.5	378.3	235.0	143.2
Okaloosa	1,627.7	1,370.9	1,281.2	89.6	256.8	134.9	121.9
Okeechobee	271.5	136.1	59.6	76.5	135.4	108.1	27.3
Orange	647.5	442.1	221.0	221.1	205.5	155.4	50.1
Osceola	975.2	732.9	246.3	486.6	242.2	168.3	73.9
Palm Beach	—	—	—	—	—	—	—
Pasco	599.6	261.4	39.2	222.1	338.2	140.6	197.6
Pinellas	40.9	33.9	21.3	12.6	7.0	5.5	1.5
Polk	994.4	617.7	304.3	313.4	376.7	242.4	134.3
Putnam	811.3	462.1	421.4	40.8	349.2	219.2	130.0
Santa Rosa	2,034.5	1,557.0	1,301.5	255.5	477.5	328.1	149.5
Sarasota	89.6	55.1	55.1	—	34.6	11.8	22.8
Seminole	316.9	138.1	132.5	5.6	178.9	46.7	132.1
St. Johns	676.8	419.7	337.1	82.6	257.1	141.1	116.0
St. Lucie	53.9	52.4	43.4	9.0	1.5	1.5	—
Sumter	769.2	418.2	159.9	258.3	351.0	119.1	231.8
Suwannee	705.6	264.0	264.0	—	441.6	102.9	338.7
Taylor	1,017.3	522.1	298.3	223.8	495.2	242.3	252.9
Union	325.5	202.7	143.3	59.4	122.8	102.8	20.0
Volusia	1,462.0	989.4	702.9	286.5	472.5	277.0	195.6
Wakulla	1,145.6	770.1	733.8	36.3	375.5	195.4	180.1
Walton	1,635.5	1,183.4	1,127.0	56.4	452.1	346.0	106.2
Washington	628.7	364.2	222.9	141.3	264.5	121.8	142.7
Total	45,287.2	28,311.5	20,731.1	7,580.4	16,975.7	9,003.8	7,971.9

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Table 51—Net annual change[a] of growing stock on timberland by county and species group, Florida, 1995

County	All species	Softwoods			Hardwoods		
		All softwoods	Yellow pine	Other softwood	All hardwoods	Soft hardwood	Hard hardwood
	Million cubic feet						
Alachua	5.0	3.1	3.3	-0.2	1.9	0.7	1.2
Baker	0.1	-1.6	-1.5	-0.1	1.6	1.3	0.3
Bay	-0.0	-1.2	-1.2	0.1	1.1	0.5	0.6
Bradford	4.3	3.3	3.1	0.2	1.0	0.5	0.5
Brevard	-0.2	-1.0	-0.0	-1.0	0.8	0.2	0.6
Broward	—	—	—	—	—	—	—
Calhoun	2.1	0.9	0.7	0.2	1.2	1.2	0.0
Charlotte	0.5	0.5	0.2	0.3	-0.0	-0.0	-0.0
Citrus	0.5	-0.9	-1.2	0.3	1.4	0.7	0.8
Clay	3.2	0.8	0.7	0.1	2.4	1.3	1.1
Collier	-2.1	-0.4	1.1	-1.5	-1.7	-1.0	-0.7
Columbia	1.9	-1.2	-1.1	-0.1	3.2	2.3	0.9
Dade	—	—	—	—	—	—	—
De Soto	0.5	-0.4	-0.4	0.1	0.8	0.7	0.2
Dixie	2.6	1.6	3.2	-1.6	1.1	0.1	0.9
Duval	9.7	8.3	8.2	0.1	1.3	1.7	-0.3
Escambia	1.0	2.0	1.7	0.3	-1.0	-1.1	0.0
Flagler	1.8	0.2	2.0	-1.8	1.6	0.9	0.7
Franklin	10.6	9.5	8.6	0.9	1.0	0.7	0.4
Gadsden	5.1	2.8	2.8	—	2.3	0.7	1.7
Gilchrist	4.7	3.6	3.5	0.2	1.1	0.3	0.8
Glades	-2.2	-2.3	-2.5	0.2	0.1	0.1	0.1
Gulf	4.8	3.3	2.3	1.0	1.6	1.1	0.4
Hamilton	1.0	-0.1	0.7	-0.8	1.1	-0.2	1.3
Hardee	3.1	1.5	0.5	1.0	1.6	0.5	1.1
Hendry	-1.4	-1.3	-2.4	1.2	-0.1	-0.1	-0.0
Hernando	2.4	2.4	2.2	0.2	-0.0	-0.4	0.3
Highlands	-0.0	0.4	-0.1	0.5	-0.4	-0.5	0.1
Hillsborough	1.4	1.0	0.3	0.6	0.4	0.4	-0.0
Holmes	4.2	1.3	1.2	0.2	2.9	1.8	1.1
Indian River	0.1	0.1	0.1	0.0	-0.0	0.0	-0.1
Jackson	-8.4	-5.3	-6.0	0.7	-3.1	-0.6	-2.5
Jefferson	5.0	-0.7	-1.0	0.3	5.7	3.1	2.5
Lafayette	-4.3	-6.3	-5.4	-0.9	2.0	1.0	1.0
Lake	0.6	-0.9	1.1	-2.0	1.5	1.3	0.2
Lee	0.5	0.4	0.3	0.1	0.1	—	0.1
Leon	1.9	2.0	2.0	0.0	-0.1	-0.3	0.2
Levy	9.8	7.4	6.9	0.5	2.3	1.3	1.0
Liberty	3.7	1.9	1.3	0.7	1.8	2.1	-0.3
Madison	-4.3	-4.5	-3.1	-1.3	0.2	-0.8	1.0
Manatee	0.2	-0.5	-0.5	—	0.8	0.2	0.6
Marion	4.3	-1.0	-1.2	0.2	5.4	1.6	3.7
Martin	0.9	0.9	0.6	0.3	0.0	—	0.0
Monroe	—	—	—	—	—	—	—
Nassau	3.3	0.2	0.1	0.1	3.1	2.7	0.4
Okaloosa	5.1	2.0	1.8	0.2	3.1	1.9	1.1
Okeechobee	0.7	0.1	-0.0	0.2	0.6	0.3	0.3
Orange	-0.4	0.9	-0.1	1.0	-1.3	-0.6	-0.7
Osceola	2.5	1.3	0.7	0.6	1.2	0.7	0.5
Palm Beach	—	—	—	—	—	—	—
Pasco	-2.5	-3.0	-2.2	-0.8	0.5	0.1	0.4
Pinellas	-0.3	-0.4	-0.5	0.1	0.1	0.0	0.0
Polk	3.7	1.0	3.2	-2.1	2.6	2.0	0.6
Putnam	0.5	1.4	1.3	0.1	-0.9	-1.0	0.1
Santa Rosa	3.8	-0.2	-1.5	1.3	4.0	2.5	1.5
Sarasota	0.2	0.1	0.1	—	0.1	0.0	0.1
Seminole	-0.2	0.9	0.8	0.0	-1.0	-0.4	-0.6
St. Johns	2.8	1.5	2.0	-0.6	1.4	1.3	0.1
St. Lucie	-1.1	-1.1	-1.1	0.0	0.0	—	0.0
Sumter	4.9	3.6	2.0	1.7	1.3	0.1	1.2
Suwannee	8.5	6.3	6.3	—	2.2	0.3	1.9
Taylor	-4.0	-2.1	-1.9	-0.1	-2.0	-0.4	-1.5
Union	3.0	2.4	2.0	0.3	0.6	0.4	0.2
Volusia	4.7	0.4	0.7	-0.3	4.4	3.2	1.1
Wakulla	3.6	3.1	2.7	0.4	0.5	0.8	-0.2
Walton	10.9	6.9	6.7	0.3	3.9	2.3	1.6
Washington	8.0	4.2	3.8	0.4	3.8	2.6	1.2
Total	131.9	59.1	57.3	1.8	72.8	42.2	30.5

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

[a] Average net annual growth minus annual timber removals.

Table 52—Net annual change[a] of sawtimber on timberland by county and species group, Florida, 1995

County	All species	Softwoods			Hardwoods		
		All softwoods	Yellow pine	Other softwood	All hardwoods	Soft hardwood	Hard hardwood
	Million board feet						
Alachua	18.0	10.0	10.2	-0.2	8.0	2.9	5.1
Baker	1.0	-1.2	-3.1	1.8	2.2	1.8	0.4
Bay	-6.9	-9.8	-10.1	0.3	2.9	1.3	1.6
Bradford	11.4	8.7	7.7	0.9	2.7	1.2	1.5
Brevard	3.9	0.4	3.1	-2.7	3.5	1.2	2.3
Broward	—	—	—	—	—	—	—
Calhoun	9.4	1.9	0.2	1.7	7.5	5.3	2.2
Charlotte	2.7	2.9	2.3	0.6	-0.2	—	-0.2
Citrus	5.6	0.7	-1.6	2.2	4.9	2.1	2.8
Clay	11.6	3.9	3.4	0.5	7.8	2.9	4.8
Collier	-3.0	5.3	4.6	0.7	-8.3	-4.9	-3.4
Columbia	-2.7	-7.6	-7.7	0.1	4.9	2.2	2.7
Dade	—	—	—	—	—	—	—
De Soto	2.0	-1.5	-1.8	0.3	3.5	3.5	-0.1
Dixie	7.9	3.2	6.2	-2.9	4.7	-3.2	7.9
Duval	33.0	25.8	24.7	1.0	7.3	5.3	2.0
Escambia	3.7	4.1	3.0	1.1	-0.4	-1.9	1.4
Flagler	25.8	17.6	19.8	-2.2	8.2	4.9	3.3
Franklin	17.4	12.9	8.9	4.0	4.5	3.4	1.1
Gadsden	5.0	-4.2	-4.2	—	9.2	2.8	6.3
Gilchrist	4.2	1.9	1.0	0.9	2.2	-0.2	2.5
Glades	-3.4	-4.5	-6.1	1.6	1.2	0.6	0.6
Gulf	19.4	10.4	5.7	4.6	9.0	7.1	1.9
Hamilton	-5.0	-9.3	-7.8	-1.5	4.2	-1.1	5.4
Hardee	11.1	6.8	4.1	2.7	4.3	0.7	3.5
Hendry	-0.7	-0.6	-7.1	6.5	-0.1	-0.5	0.4
Hernando	5.5	5.7	5.2	0.6	-0.3	-1.0	0.7
Highlands	2.2	3.2	0.1	3.1	-1.0	-1.2	0.3
Hillsborough	7.4	4.5	1.4	3.0	2.9	3.3	-0.4
Holmes	2.8	-3.7	-4.4	0.7	6.5	4.3	2.2
Indian River	0.2	0.5	0.3	0.2	-0.3	—	-0.3
Jackson	-43.7	-30.6	-32.3	1.7	-13.1	-3.7	-9.3
Jefferson	9.2	-13.2	-16.0	2.8	22.4	12.5	9.9
Lafayette	-5.3	-7.0	-6.4	-0.6	1.7	0.4	1.3
Lake	1.9	-5.5	-0.9	-4.7	7.4	6.8	0.6
Lee	2.5	2.5	1.5	0.9	—	—	—
Leon	8.6	3.5	3.4	0.1	5.1	2.1	2.9
Levy	38.9	28.7	23.5	5.3	10.2	3.9	6.3
Liberty	16.0	6.6	3.2	3.4	9.4	9.6	-0.3
Madison	-13.5	-17.5	-14.7	-2.7	3.9	-1.1	5.0
Manatee	1.0	-2.5	-2.5	—	3.5	1.1	2.3
Marion	36.8	14.9	13.8	1.1	21.8	8.0	13.8
Martin	1.2	1.2	1.2	—	0.0	—	0.0
Monroe	—	—	—	—	—	—	—
Nassau	8.7	1.0	-0.9	2.0	7.6	5.5	2.1
Okaloosa	22.4	13.8	12.5	1.3	8.6	4.0	4.6
Okeechobee	4.5	1.0	0.3	0.8	3.4	2.0	1.4
Orange	10.5	13.0	8.4	4.6	-2.5	-0.5	-2.0
Osceola	20.1	14.5	5.1	9.4	5.6	3.3	2.4
Palm Beach	—	—	—	—	—	—	—
Pasco	-3.5	-7.5	-9.0	1.5	4.0	1.8	2.2
Pinellas	-0.8	-1.0	-1.6	0.6	0.2	0.2	—
Polk	26.1	12.8	10.9	1.9	13.3	9.5	3.8
Putnam	3.0	7.1	6.5	0.6	-4.1	-4.6	0.5
Santa Rosa	34.5	21.4	15.5	6.0	13.0	7.6	5.4
Sarasota	1.4	0.5	0.5	—	0.9	0.3	0.6
Seminole	1.9	4.5	4.4	0.1	-2.6	-1.4	-1.2
St. Johns	8.8	3.2	3.1	0.0	5.6	5.1	0.5
St. Lucie	-2.6	-2.6	-2.8	0.2	—	—	—
Sumter	12.7	10.0	2.8	7.2	2.6	-0.5	3.2
Suwannee	20.9	12.2	12.2	—	8.7	1.0	7.7
Taylor	-9.7	-8.8	-9.2	0.5	-1.0	-0.6	-0.4
Union	7.4	4.8	3.7	1.1	2.6	1.6	1.0
Volusia	16.9	1.9	0.1	1.8	15.0	8.8	6.2
Wakulla	-0.3	-2.6	-3.6	1.0	2.3	1.5	0.8
Walton	41.8	27.4	26.2	1.2	14.4	9.3	5.1
Washington	14.3	8.1	4.8	3.2	6.2	2.2	4.0
Total	482.2	204.3	122.2	82.1	277.9	138.8	139.2

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

[a] Average net annual growth minus annual timber removals.

Table 53—Green weight of forest biomass on timberland by county and species group, Florida, 1995

County	All species	Softwoods			Hardwoods		
		All softwoods	Yellow pine	Other softwood	All hardwoods	Soft hardwood	Hard hardwood
	Thousand tons						
Alachua	18,433.0	9,801.8	7,940.0	1,861.8	8,631.3	2,624.4	6,006.9
Baker	20,843.8	15,745.6	12,557.2	3,188.5	5,098.2	4,692.2	406.0
Bay	11,218.1	8,899.1	8,498.2	400.9	2,319.0	1,213.1	1,105.9
Bradford	7,680.9	5,288.7	4,838.0	450.7	2,392.3	1,334.1	1,058.2
Brevard	5,340.3	2,538.2	2,249.4	288.8	2,802.1	1,042.7	1,759.5
Broward	—	—	—	—	—	—	—
Calhoun	14,863.3	8,830.4	7,970.2	860.2	6,032.9	3,686.5	2,346.4
Charlotte	1,667.0	1,549.6	678.5	871.1	117.4	—	117.4
Citrus	9,914.1	3,869.2	2,331.2	1,538.0	6,044.9	1,687.9	4,357.1
Clay	17,901.7	9,549.8	8,941.1	608.7	8,351.9	3,129.8	5,222.2
Collier	10,899.2	8,738.2	1,827.9	6,910.3	2,161.0	743.2	1,417.8
Columbia	22,347.4	12,936.9	10,547.5	2,389.4	9,410.6	5,871.0	3,539.6
Dade	—	—	—	—	—	—	—
De Soto	3,353.3	432.5	166.4	266.1	2,920.8	1,029.4	1,891.5
Dixie	25,777.9	12,505.6	8,706.3	3,799.3	13,272.3	5,018.4	8,253.9
Duval	18,058.1	9,718.3	8,995.0	723.3	8,339.8	4,566.3	3,773.6
Escambia	18,218.5	10,912.5	10,648.0	264.6	7,306.0	4,328.2	2,977.8
Flagler	15,588.4	11,223.1	7,661.1	3,562.0	4,365.3	2,523.0	1,842.3
Franklin	16,566.5	12,131.3	9,559.3	2,572.0	4,435.2	3,362.5	1,072.7
Gadsden	16,446.6	6,300.5	6,300.5	—	10,146.1	4,612.4	5,533.7
Gilchrist	7,290.6	4,819.3	3,992.7	826.6	2,471.3	394.7	2,076.6
Glades	3,321.5	2,229.0	686.6	1,542.5	1,092.5	355.2	737.3
Gulf	15,626.7	7,402.1	4,311.6	3,090.5	8,224.6	5,859.7	2,365.0
Hamilton	14,159.9	7,218.7	6,128.1	1,090.7	6,941.2	3,078.3	3,862.9
Hardee	7,051.7	2,553.6	1,364.4	1,189.2	4,498.1	932.8	3,565.3
Hendry	5,767.8	4,575.0	262.5	4,312.6	1,192.8	401.2	791.6
Hernando	11,684.8	3,659.9	3,346.1	313.8	8,024.9	2,483.1	5,541.9
Highlands	4,614.4	2,330.0	840.2	1,489.8	2,284.4	982.0	1,302.4
Hillsborough	10,357.2	5,333.0	1,148.2	4,184.8	5,024.2	1,778.7	3,245.5
Holmes	10,801.5	4,427.3	3,972.1	455.2	6,374.2	3,943.1	2,431.1
Indian River	1,246.5	906.9	599.2	307.7	339.7	17.2	322.5
Jackson	17,102.4	6,201.7	4,885.1	1,316.6	10,900.8	5,813.6	5,087.2
Jefferson	21,276.3	5,954.0	4,071.2	1,882.8	15,322.4	7,795.9	7,526.5
Lafayette	12,649.0	6,470.7	4,654.0	1,816.8	6,178.3	2,392.7	3,785.6
Lake	15,567.4	7,960.3	5,345.4	2,614.9	7,607.2	4,578.0	3,029.2
Lee	3,201.1	2,611.5	955.8	1,655.7	589.6	—	589.6
Leon	19,407.4	9,655.7	9,317.5	338.2	9,751.7	4,586.3	5,165.5
Levy	33,284.2	18,079.3	13,650.4	4,428.9	15,204.9	5,692.7	9,512.2
Liberty	31,623.6	17,812.6	13,094.6	4,718.0	13,811.1	9,602.6	4,208.5
Madison	16,307.8	6,615.0	4,449.3	2,165.7	9,692.8	5,498.5	4,194.3
Manatee	2,669.0	158.1	158.1	—	2,510.9	767.6	1,743.3
Marion	32,065.4	18,367.5	17,400.0	967.6	13,697.9	4,155.6	9,542.3
Martin	1,822.4	1,557.9	1,430.1	127.8	264.5	—	264.5
Monroe	—	—	—	—	—	—	—
Nassau	23,143.0	11,383.6	9,580.9	1,802.7	11,759.5	7,252.2	4,507.3
Okaloosa	27,440.5	17,054.3	16,006.2	1,048.2	10,386.2	4,573.6	5,812.6
Okeechobee	4,623.6	1,702.1	787.3	914.8	2,921.6	1,881.9	1,039.7
Orange	10,379.8	6,072.1	2,420.8	3,651.3	4,307.8	2,848.4	1,459.4
Osceola	15,625.9	9,901.8	2,301.4	7,600.5	5,724.1	3,191.4	2,532.8
Palm Beach	—	—	—	—	—	—	—
Pasco	11,542.2	4,384.2	771.2	3,613.0	7,158.1	2,151.0	5,007.1
Pinellas	505.4	348.4	180.4	168.0	157.0	89.4	67.7
Polk	17,071.9	8,894.9	3,823.8	5,071.1	8,177.0	4,989.9	3,187.1
Putnam	18,103.6	9,603.8	9,024.5	579.3	8,499.8	3,942.2	4,557.7
Santa Rosa	32,750.4	20,015.7	16,886.0	3,129.7	12,734.7	7,657.8	5,077.0
Sarasota	2,395.9	863.1	863.1	—	1,532.8	222.5	1,310.3
Seminole	5,161.6	1,487.2	1,433.5	53.7	3,674.4	791.2	2,883.3
St. Johns	15,758.9	8,345.4	7,129.4	1,216.0	7,413.6	4,247.7	3,165.9
St. Lucie	794.9	502.5	400.6	101.9	292.5	33.2	259.3
Sumter	13,991.4	6,508.5	2,587.7	3,920.8	7,482.9	2,613.7	4,869.2
Suwannee	14,419.6	5,765.0	5,752.9	12.1	8,654.6	1,609.0	7,045.7
Taylor	25,076.3	13,380.7	9,845.2	3,535.5	11,695.6	5,183.2	6,512.4
Union	7,793.7	4,926.9	3,974.4	952.6	2,866.8	2,361.4	505.4
Volusia	27,897.1	17,063.0	10,673.6	6,389.4	10,834.2	5,934.5	4,899.7
Wakulla	18,575.0	10,354.6	9,875.0	479.6	8,220.5	4,234.5	3,986.0
Walton	28,651.2	16,625.8	15,932.0	693.8	12,025.5	6,008.8	6,016.7
Washington	16,496.6	6,636.1	4,961.9	1,674.2	9,860.5	5,096.7	4,763.8
Total	892,213.7	479,688.5	361,689.6	117,998.9	412,525.2	199,487.2	213,038.0

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

A dash (—) indicates no sample for the cell; 0.0 indicates a value of >0.0 but <0.05 for the cell.

Brown, Mark J. 1999. Florida's forests, 1995. Resour. Bull. SRS-48. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 83 p.

Between 1987 and 1995, timberland area in Florida decreased by 2 percent to less than 14.7 million acres. Timberland under nonindustrial private ownership increased 2 percent to 7.2 million acres, and public ownership increased 16 percent to 2.8 million acres. However, timberland controlled by forest industry decreased by 16 percent to 4.6 million acres. Pine plantations now account for 32 percent of the State's timberland, the highest proportion in the South. Volume of softwood growing stock increased almost 5 percent to 9.4 billion cubic feet, and volume of hardwood growing stock increased nearly 10 percent to more than 5.9 billion cubic feet. Net annual growth of softwood growing stock increased 9 percent to 532 million cubic feet, and that of hardwood increased 14 percent to 161 million cubic feet. Average annual removals of softwood growing stock changed little at 473 million cubic feet, whereas hardwood removals increased 33 percent to 88 million cubic feet.

Keywords: Forest type, growing stock, harvest, mortality, ownership, regeneration, removals, timberland, volume.

The Forest Service, U.S. Department of Agriculture, is dedicated to the principle of multiple use management of the Nation's forest resources for sustained yields of wood, water, forage, wildlife, and recreation. Through forestry research, cooperation with the States and private forest owners, and management of the National Forests and National Grasslands, it strives—as directed by Congress—to provide increasingly greater service to a growing Nation.