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Forest Statistics for South Florida, 1988

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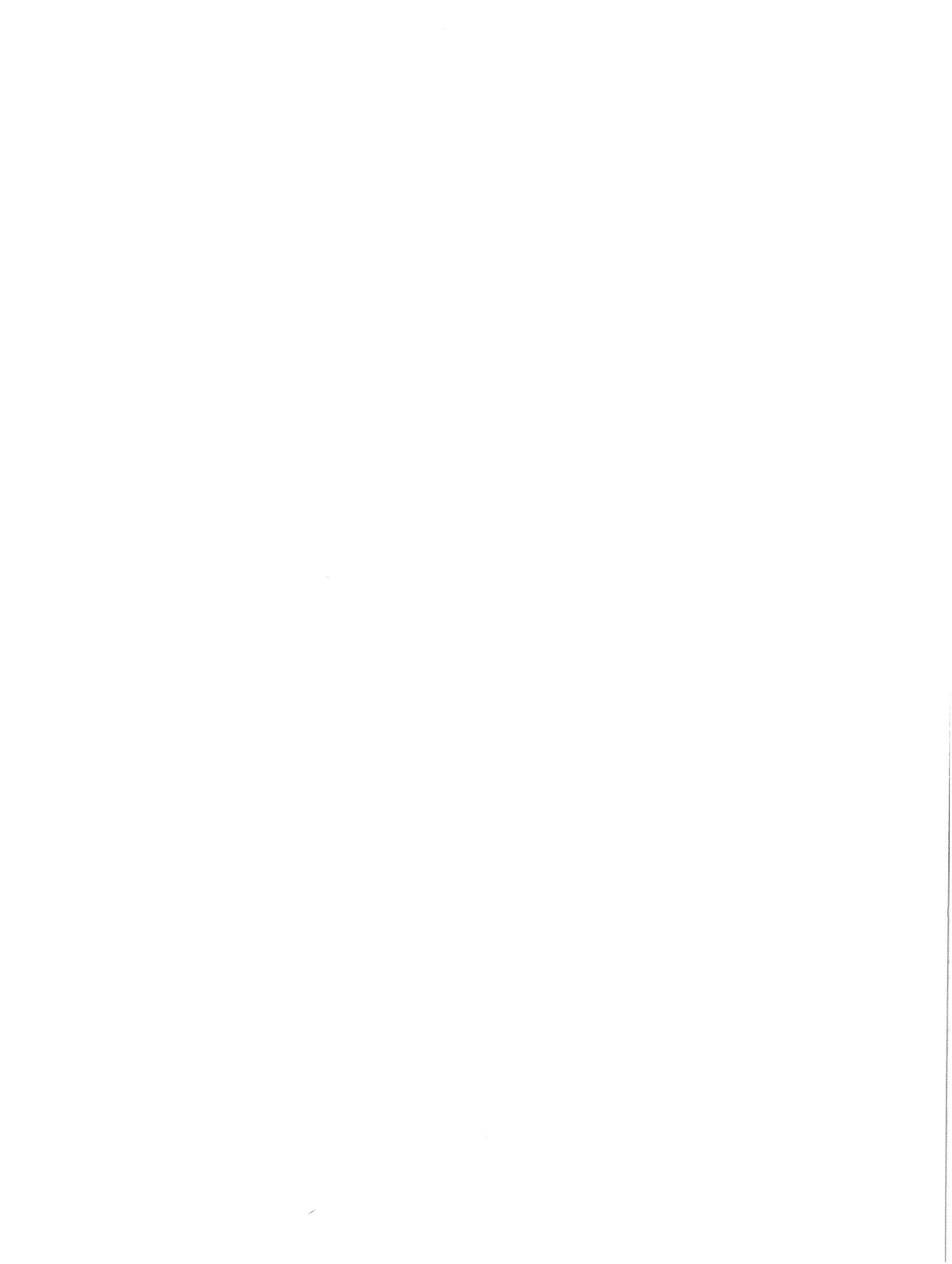


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Southeastern Forest Experiment Station
P.O. Box 2680
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Forest Statistics for South Florida, 1988

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Foreword

This report highlights the principal findings of the sixth forest survey of South Florida. Field work began in August 1987 and was completed in October 1987. Five previous surveys, completed in 1936, 1949, 1959, 1970, and 1980, provide statistics for measuring changes and trends over the past 52 years. The primary emphasis in this report is on the changes and trends since 1980. Previously reported figures have been adjusted to provide the best estimate of change.

Periodic surveys of the forest resource are authorized by the Forest and Rangeland Renewable Resources Research Act of 1978. These surveys are a continuing, nationwide undertaking by the Regional Experiment Stations of the USDA Forest Service. In Florida, Georgia, North Carolina, South Carolina, and Virginia, these surveys are administered by the Forest Inventory and Analysis (Forest Survey) Research Unit at the Southeastern Forest Experiment Station, with headquarters in Asheville, NC. The primary objective of the survey is to periodically inventory and evaluate all forest and related resources. These multi-resource data help provide a basis for formulating forest policies and programs and for the orderly development and use

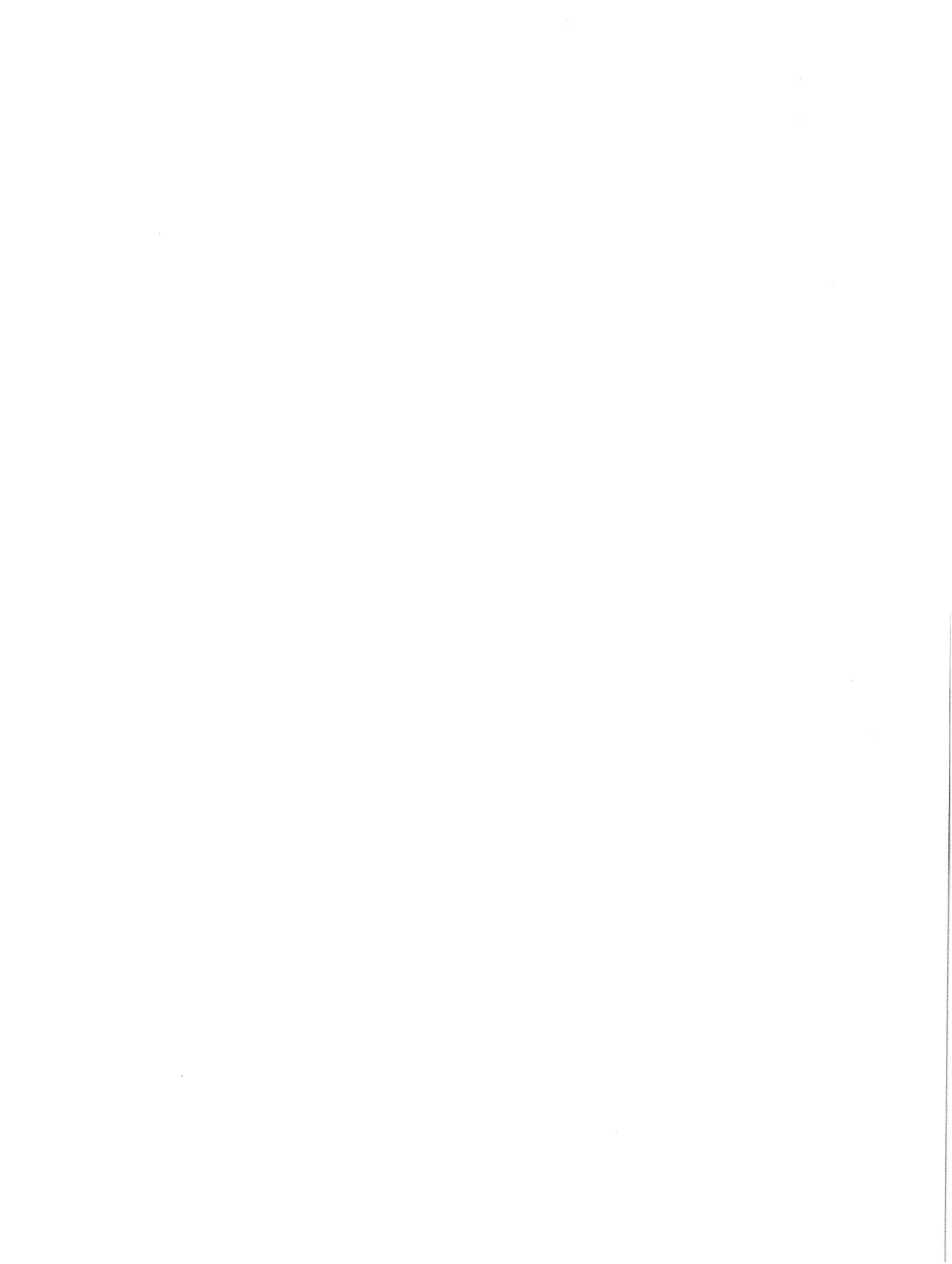
of the resources. This report deals only with the extent and condition of forest land, associated timber volumes, and rates of timber growth and removals.

The 10-county area covered by this report is one of four Survey Units in Florida. Similar reports, USDA Forest Resource Bulletins SE-96, SE-97, and SE-99, have been issued for Northwest, Northeast, and Central Florida. Another report containing many of the State totals is being released with this report. An indepth, analytical State report on the timber resource should be available in late 1988.

The Southeastern Station gratefully acknowledges the cooperation and assistance provided by the Division of Forestry, Florida Department of Agriculture and Consumer Services in collecting field data. Appreciation is also expressed for the excellent cooperation of other public agencies, forest industry, and other private landowners in providing information and access to the sample locations.



JOE P. McCLURE
Project Leader



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* Tables 1-12, 27, 29-33, 35-38, 41, 42, and 44 are common to all Forest Inventory and Analysis forest resource statistical reports of the Eastern United States.

Highlights

The flora and physiography of South Florida are unique among conditions found in the Southeast. Dense population patterns and other socioeconomic factors have resulted in rapid and sometimes dramatic changes in land use. All these factors greatly complicate inventory procedures in South Florida. To attain the accuracy levels achieved for most Survey Units in the Southeast would require a sampling intensity that is prohibitively costly and time consuming. The statistics presented in this report represent our best estimate at a reasonable expenditure of time and funds.

The latest survey classifies less than 2.0 million acres, or 25 percent of the land area in South Florida, as forest. More than 1.0 million acres are classified as woodland, about 659,000 acres as timberland, and almost 292,000 acres as reserved timberland. In most of the Southeast, distinctions between forest and nonforest are obtained from aerial photographs and ground samples. Here, many direct aerial observations along flight lines at low altitude were used to classify land use. Procedures for this survey are described in the "How the Inventory is Made" section.

Since 1980 in South Florida--

◦ area of timberland has decreased by 175,000 acres, or 21 percent. Timberland now occupies less than 659,000 acres, or more than 8 percent of the total land area in this 10-county region. Although almost 100,000 acres were added or returned to the timberland base, nearly 275,000 acres were concurrently diverted to some other land use. Reclassification of timberland to woodland and reserved timberland accounted for 73 percent of the diversions. Agriculture accounted for 15 percent of the diversions, and urban development claimed 12 percent.

◦ area of nonindustrial private forest (NIPF) land has declined to 552,000 acres. Within the NIPF category, farmer and other corporate-owned timberland declined, whereas that owned by other individuals increased. NIPF ownerships control 84 percent of the total timberland. Publicly owned timberlands, which represent 5 percent of the total, more than tripled to almost 33,000 acres, primarily due to an increase in

State-owned timberlands. Forest industry controls 73,000 acres or 11 percent of the timberland.

◦ area of timberland classified as hardwood forest types has declined by 21 percent to 391,000 acres. Oak-gum-cypress remains the predominant hardwood forest type. It occupies 378,000 acres, including 123,000 acres classified as palm and other tropical forest types. Pine forest types have decreased 27 percent to 221,000 acres. Slash pine remains the major pine type, accounting for 95 percent of this acreage. Oak-pine types increased 33 percent but occupy only 47,000 acres.

◦ average basal area of all live trees 5.0 inches d.b.h. and larger has increased from 50 to 58 square feet per acre. Despite some improvements in stocking levels, areas poorly stocked and nonstocked still make up 54 percent of South Florida's timberland.

◦ natural agents such as fire, insects, disease, and weather were the primary disturbances to timberland in this

4. Felled trees were measured at active cutting operations throughout Florida. These data will supplement the standing-tree volume data and are used to generate utilization factors for product and species groups. Forest biomass estimates were made from equations developed by the Utilization of Southern Timber Research Work Unit of the Southeastern Forest Experiment Station in Athens, GA.

5. Estimates of growth, removals, and mortality were determined from the remeasurement of 188 permanent sample plots established in the fourth survey.

6. Ownership information was collected from correspondence, public records, and local contacts. In those counties where the sample missed a particular ownership class, temporary sample plots were added.

7. All field data were sent to 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 the following sampling errors in terms of one standard error (two times out of three):

	<u>Percent</u>
Per million acres of timberland	5.45
Per billion cubic feet of growing stock.	9.46
Per billion cubic feet of net annual growth.	1.52
Per billion cubic feet of annual removals.	2.10

Sampling errors for county and unit totals,^a in terms of one standard error, South Florida, 1988

County	Timberland area	Cubic-foot volume of growing stock		
		Inventory	Growth	Removals
- - - - - Sampling error ^b - - - - -				
Broward	0.00	0.00	0.00	0.00
Charlotte	6.91	31.52	29.60	56.83
Collier	11.19	17.48	17.95	57.73
Dade	0.00	0.00	0.00	0.00
Glades	16.41	32.33	29.46	102.21
Hendry	15.71	30.99	27.01	55.11
Lee	15.88	35.71	28.95	82.37
Martin	20.22	38.47	41.85	103.22
Monroe	0.00	0.00	0.00	0.00
Palm Beach	0.00	0.00	0.00	0.00
Total	6.71	12.02	11.29	31.60

^aSampling error of breakdowns of county and unit totals may be computed with the following formula:

$$E = \frac{(SE) \sqrt{(\text{Specified volume or area})}}{\sqrt{(\text{Volume or area total in question})}}$$

Where: E = Sampling error of the volume or area total in question

SE = Specified sampling error in table.

^bBy random-sampling formula (in percent).

Definitions of Terms

Allowable cut. The volume of timber that could be cut on timberland during a given period under specified management plans aimed at sustained production of timber products.

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 as square feet of basal area 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.

Bureau of Land Management lands. Federal lands administered by the Bureau of Land Management.

Census water. Streams, sloughs, estuaries, canals, and other moving bodies of water one-eighth of a statute mile in width and greater, and lakes, reservoirs, ponds, and other permanent bodies of water 40 acres in area and greater.

Commercial forest land. (see: Timberland).

Commercial species. Tree species conventionally regarded as being able to develop into trees suitable for the manufacture of industrial timber products. Species that typically exhibit small size, poor form, or inferior quality 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 (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 through 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 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 25 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, constitute 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 tropical. 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.

Desirable tree. A tree that qualifies as growing stock and has no serious defects in quality limiting present or prospective use; is of relatively high vigor (30 percent or more live crown ratio); is compatible with the site and

physiographic class; has a total board-foot loss not to exceed 15 percent in softwoods or 25 percent in hardwoods as a result of severe sweep, crook, or lean; and has a relatively clear bole.

Acceptable tree. A tree that qualifies as growing stock but does not meet the minimum requirements to qualify as a desirable tree. Included are sawtimber-size trees that do not contain a 12-foot saw log because of excessive, natural taper in the butt log but have the potential to produce a 12-foot saw log as diameter increases.

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. Land including former 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.

Indian land. All lands held in trust by the United States for individual Indians or tribes, or all lands, titles to which are held by individual Indians or tribes, subject to Federal restrictions against alienation.

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.

Inhibiting vegetation. Cover sufficiently dense to prevent the establishment of tree seedlings.

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 one-eighth of a statute mile in width, and lakes, reservoirs, and ponds less than 40 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.

Logging slash. The unmerchantable portion of growing-stock trees (including saplings) plus all cull trees 1.0 inch d.b.h. and larger cut or destroyed during logging operations and not used.

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 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 the 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.

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

Quality class. A classification of saw-timber volume by log or tree grades.

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 non-commercial 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 non-pulpmills, 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. Live trees of commercial species less than 1.0 inch d.b.h. that are expected to survive and develop.

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.

Class 1. 165 or more cubic feet per acre.

Class 2. 120 to 164 cubic feet per acre.

Class 3. 85 to 119 cubic feet per acre.

Class 4. 50 to 84 cubic feet per acre.

Class 5. 20 to 49 cubic feet per acre.

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 red-cedar, 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 growing-stock trees in the stand.

Sawtimber stands. Stands at least 16.7 percent stocked with growing-stock 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 growing-stock 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 growing-stock 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.

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. Land at least 16.7 percent stocked by forest trees of any size, or formerly having had such tree cover, not currently developed for nonforest use, capable of producing 20 cubic feet of industrial wood per acre per year and not withdrawn from timber utilization by legislative action.

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

Unproductive forest land. (see: Woodland).

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.

Woodland. Forest land incapable of producing 20 cubic feet per acre per year of industrial wood under natural conditions, because of adverse site conditions.

Stocking Standard

D.b.h. class	Minimum number of trees per acre for full stocking	Minimum basal area per acre for full stocking
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

Conversion factors

Cubic feet of wood per average cord
(excluding bark)

D.b.h. class	All species	Pine	Other softwood	Hardwood
6	64.7	61.0	68.2	60.0
8	72.8	68.1	76.0	68.4
10	77.8	73.1	81.4	73.4
12	81.1	76.7	85.2	76.4
14	85.0	79.4	88.2	78.4
16	85.8	81.6	90.4	79.8
18	88.9	83.3	92.3	80.8
20	88.9	84.9	93.8	81.5
22	90.4	86.0	95.1	82.1
24+	92.3	87.0	97.4	83.2
Average	77.8	71.4	81.7	74.0

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 (4.5 feet) = 1.4 meters above ground 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

County Tables

The county tables are intended for use in compiling forest resource estimates for groups of counties. Because the sampling procedure used by the Forest Survey was intended primarily to furnish inventory data for the survey unit as a whole, individual county estimates have limited and variable accuracy. As county totals are broken down by various subdivisions, the possibility of error increases and is greatest for the smallest items. The order of this increase can be computed with the formula on page 3.

Table 1.--Area, by county and land class, South Florida, 1988

County	All land ^a	Forest land			Nonforest land ^b	
		Total	Timberland	Woodland		Reserved timberland
----- Acres -----						
Broward	775,213	35,666	--	35,666	--	739,547
Charlotte	441,613	54,217	33,838	20,379	--	387,396
Collier	1,276,224	745,852	309,023	266,917	169,912	530,372
Dade	1,251,366	240,537	--	207,661	32,876	1,010,829
Glades	488,301	91,189	79,469	11,720	--	397,112
Hendry	744,013	94,282	85,487	8,795	--	649,731
Lee	513,952	181,037	120,398	60,639	--	332,915
Martin	355,002	37,892	30,485	7,407	--	317,110
Monroe	661,824	420,634	--	331,583	89,051	241,190
Palm Beach	1,275,590	82,691	--	82,691	--	1,192,899
Total	7,783,098	1,983,997	658,700	1,033,458	291,839	5,799,101

^aFrom U.S. Bureau of the Census, 1980.

^bIncludes 20,179 acres of water according to Forest Survey standards of area classification, but defined by the Bureau of Census as land.

Table 2.--Area of timberland, by county and ownership class, South Florida, 1988

County	All ownerships	Ownership class									
		National forest	Miscellaneous Federal	State	County and municipal	Forest industry ^a	Other private				
							Farmer	Corporate	Individual	Other private	
Acres											
Broward	--	--	--	--	--	--	--	--	--	--	--
Charlotte	33,838	--	6,827	288	--	--	--	16,702	--	10,021	--
Collier	309,023	--	1,950	2,720	--	--	44,639	24,348	--	235,366	--
Dade	--	--	--	--	--	--	--	--	--	--	--
Glades	79,469	--	--	25	73,337	--	1,475	4,427	--	--	--
Hendry	85,487	--	460	40	50	--	19,032	42,822	--	14,274	--
Lee	120,398	--	200	2,123	--	--	4,723	18,892	--	94,460	--
Martin	30,485	--	8,988	275	--	--	--	8,843	--	12,379	--
Monroe	--	--	--	--	--	--	--	--	--	--	--
Palm Beach	--	--	--	--	--	--	--	--	--	--	--
Total	658,700	--	18,425	5,471	73,387	--	69,869	116,034	--	366,500	--

^aIncludes 0 acres of other private land under long-term lease.

Table 3.--Area of timberland, by county and forest-type group, South Florida, 1988

County	All type groups	Forest-type group									
		White pine- hemlock	Spruce- fir	Longleaf- slash	Loblolly- shortleaf	Oak- pine	Oak- hickory	Oak-gum- cypress	Elm-ash- cottonwood	Maple-beech- birch	Acres
Broward	--	--	--	--	--	--	--	--	--	--	--
Charlotte	33,838	--	21,858	--	--	--	--	11,980	--	--	--
Collier	309,023	--	44,638	--	24,348	4,058	235,979	--	--	--	--
Dade	--	--	--	--	--	--	--	--	--	--	--
Glades	79,469	--	42,306	--	1,475	--	35,688	--	--	--	--
Hendry	85,487	--	33,766	--	4,758	4,758	42,205	--	--	--	--
Lee	120,398	--	56,876	--	14,169	4,723	44,630	--	--	--	--
Martin	30,485	--	15,105	6,263	1,769	--	7,348	--	--	--	--
Monroe	--	--	--	--	--	--	--	--	--	--	--
Palm Beach	--	--	--	--	--	--	--	--	--	--	--
Total	658,700	--	214,549	6,263	46,519	13,539	377,830	--	--	--	--

Table 4.--Area of timberland, by county and stand-size class, South Florida, 1988

County	All stands	Stand-size class			Nonstocked areas
		Sawtimber	Poletimber	Sapling-seedling	
----- Acres -----					
Broward	--	--	--	--	--
Charlotte	33,838	6,681	15,179	3,340	8,638
Collier	309,023	140,693	60,870	40,581	66,879
Dade	--	--	--	--	--
Glades	79,469	21,221	36,666	7,118	14,464
Hendry	85,487	36,332	31,944	12,453	4,758
Lee	120,398	23,615	56,876	14,169	25,738
Martin	30,485	9,800	--	11,569	9,116
Monroe	--	--	--	--	--
Palm Beach	--	--	--	--	--
Total	658,700	238,342	201,535	89,230	129,593

Table 5.--Area of timberland, by county and site class, South Florida, 1988

County	All classes	Site class (cubic feet per acre per year)				
		>164	120-164	85-119	50-84	20-49
----- Acres -----						
Broward	--	--	--	--	--	--
Charlotte	33,838	--	--	1,670	23,529	8,639
Collier	309,023	--	--	4,058	107,458	197,507
Dade	--	--	--	--	--	--
Glades	79,469	--	--	--	49,424	30,045
Hendry	85,487	--	--	--	57,556	27,931
Lee	120,398	--	--	--	19,092	101,306
Martin	30,485	--	--	--	9,801	20,684
Monroe	--	--	--	--	--	--
Palm Beach	--	--	--	--	--	--
Total	658,700	--	--	5,728	266,860	386,112

Table 6.--Area of timberland, by county and stocking class of growing-stock trees, South Florida, 1988

County	All classes	Stocking class (percent) ^a				
		>130	100-130	60-99	16.7-59	<16.7
----- Acres -----						
Broward	--	--	--	--	--	--
Charlotte	33,838	3,341	11,837	5,011	5,011	8,638
Collier	309,023	16,233	60,870	71,706	93,335	66,879
Dade	--	--	--	--	--	--
Glades	79,469	5,641	5,641	25,386	28,337	14,464
Hendry	85,487	14,324	8,155	26,766	31,484	4,758
Lee	120,398	4,723	23,815	9,446	56,676	25,738
Martin	30,485	--	6,263	7,075	8,031	9,116
Monroe	--	--	--	--	--	--
Palm Beach	--	--	--	--	--	--
Total	658,700	44,262	116,581	145,390	222,874	129,593

^aSee stocking standards on page 10.

Table 7.--Volume of growing stock and sawtimber on timberland, by county and species group, South Florida, 1988

County	Growing stock				Sawtimber					
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet ^a									
Broward	--	--	--	--	--	--	--	--	--	--
Charlotte	28,257	11,047	15,848	277	1,085	62,415	24,512	32,804	--	5,099
Collier	306,580	47,000	213,950	28,970	16,660	877,155	143,422	601,680	78,857	53,196
Dade	--	--	--	--	--	--	--	--	--	--
Glades	67,212	34,841	27,755	3,369	1,247	207,038	92,972	103,430	4,637	5,999
Hendry	121,746	25,672	85,713	4,607	5,754	395,640	78,318	277,564	19,682	20,076
Lee	85,523	33,004	52,519	--	--	183,339	46,105	137,234	--	--
Martin	10,539	10,313	226	--	--	40,631	40,631	--	--	--
Monroe	--	--	--	--	--	--	--	--	--	--
Palm Beach	--	--	--	--	--	--	--	--	--	--
Total	619,857	161,877	396,011	37,223	24,746	1,766,218	425,960	1,152,712	103,176	84,370

^aFactors for converting to cords are shown on page 10.

Table 8.--Average net annual growth of growing stock and sawtimber on timberland, by county and species group, South Florida, 1980-1987

County	Growing stock				Sawtimber					
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet									
Broward	--	--	--	--	--	--	--	--	--	--
Charlotte	1,042	633	351	18	40	3,682	2,612	851	--	219
Collier	8,300	2,340	4,438	1,008	514	26,897	6,991	15,275	2,932	1,699
Dade	--	--	--	--	--	--	--	--	--	--
Glades	2,465	1,918	438	75	34	9,871	6,468	2,322	873	208
Hendry	2,881	952	1,708	83	138	15,005	5,759	6,685	435	2,126
Lee	2,869	2,014	855	--	--	9,919	5,830	4,089	--	--
Martin	461	423	38	--	--	1,170	1,170	--	--	--
Monroe	--	--	--	--	--	--	--	--	--	--
Palm Beach	--	--	--	--	--	--	--	--	--	--
Total	18,018	8,280	7,828	1,184	726	66,544	28,830	29,222	4,240	4,252

Table 9.--Average annual removals of growing stock and sawtimber on timberland, by county and species group, South Florida, 1980-1987

County	Growing stock					Sawtimber				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet					Thousand board feet				
Broward	--	--	--	--	--	--	--	--	--	--
Charlotte	1,358	1,320	--	--	38	2,751	2,751	--	--	--
Collier	1,262	1,088	174	--	--	3,198	3,198	--	--	--
Dade	--	--	--	--	--	--	--	--	--	--
Glades	56	56	--	--	--	--	--	--	--	--
Hendry	1,483	1,483	--	--	--	5,473	5,473	--	--	--
Lee	224	224	--	--	--	663	663	--	--	--
Martin	30	--	--	--	30	105	--	--	--	105
Monroe	--	--	--	--	--	--	--	--	--	--
Palm Beach	--	--	--	--	--	--	--	--	--	--
Total	4,413	4,171	174	--	68	12,190	12,085	--	--	105

Unit Tables

Table 10.--Area of timberland, by forest type and ownership class, South Florida, 1988

Forest type	All ownerships	Ownership class				
		National forest	Other public	Forest industry	Forest industry- leased	Other private
----- <u>Acres</u> -----						
Softwood types						
White pine-hemlock	--	--	--	--	--	--
Spruce-fir	--	--	--	--	--	--
Longleaf pine	5,641	--	--	5,641	--	--
Slash pine	208,908	--	11,981	36,665	--	160,262
Loblolly pine	--	--	--	--	--	--
Shortleaf pine	--	--	--	--	--	--
Virginia pine	--	--	--	--	--	--
Sand pine	6,263	--	4,494	--	--	1,769
Eastern redcedar	--	--	--	--	--	--
Pond pine	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--
Pitch pine	--	--	--	--	--	--
Table Mountain pine	--	--	--	--	--	--
Total	220,812	--	16,475	42,306	--	162,031
Hardwood types						
Oak-pine	46,519	--	--	--	--	46,519
Oak-hickory	4,758	--	--	--	--	4,758
Chestnut oak	--	--	--	--	--	--
Southern scrub oak	8,781	--	--	--	--	8,781
Oak-gum-cypress	377,830	--	16,435	31,081	--	330,314
Elm-ash-cottonwood	--	--	--	--	--	--
Maple-beech-birch	--	--	--	--	--	--
Total	437,888	--	16,435	31,081	--	390,372
All types	658,700	--	32,910	73,387	--	552,403

Table 11.--Area of timberland, by ownership and stocking classes of growing-stock trees, South Florida, 1988

Ownership class	All classes	Stocking class (percent) ^a				
		>130	100-130	60-99	16.7-59	<16.7
		- - - - - <u>Acres</u> - - - - -				
National forest	--	--	--	--	--	--
Other public	32,910	--	14,918	5,696	7,430	4,866
Forest industry	73,387	5,691	5,641	25,386	25,386	11,283
Forest industry-leased	--	--	--	--	--	--
Other private	552,403	38,571	96,022	114,308	190,058	113,444
All ownerships	658,700	44,262	116,581	145,390	222,874	129,593

^aSee stocking standards on page 10 .

Table 12.--Area of timberland, by forest type and stand-size class, South Florida, 1988

Forest type	All stands	Stand-size class			Nonstocked areas
		Sawtimber	Poletimber	Sapling-seedling	
----- Acres -----					
Softwood types					
White pine-hemlock	--	--	--	--	--
Spruce-fir	--	--	--	--	--
Longleaf pine	5,641	--	5,641	--	--
Slash pine	208,908	55,861	114,287	15,658	23,102
Loblolly pine	--	--	--	--	--
Shortleaf pine	--	--	--	--	--
Virginia pine	--	--	--	--	--
Sand pine	6,263	--	--	6,263	--
Eastern redcedar	--	--	--	--	--
Pond pine	--	--	--	--	--
Spruce pine	--	--	--	--	--
Pitch pine	--	--	--	--	--
Table Mountain pine	--	--	--	--	--
Total	220,812	55,861	119,928	21,921	23,102
Hardwood types					
Oak-pine	46,519	10,256	8,781	21,655	5,827
Oak-hickory	4,758	4,758	--	--	--
Chestnut oak	--	--	--	--	--
Southern scrub oak	8,781	--	--	--	8,781
Oak-gum-cypress	377,830	167,467	72,826	45,654	91,883
Elm-ash-cottonwood	--	--	--	--	--
Maple-beech-birch	--	--	--	--	--
Total	437,888	182,481	81,607	67,309	106,491
All types	658,700	238,342	201,535	89,230	129,593

Table 13.--Area of timberland, by stand-age and broad management classes, all ownerships, South Florida, 1988

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
----- Acres -----						
0-10	20,806	--	16,048	4,758	--	--
11-20	29,805	5,642	9,168	--	--	14,995
21-30	74,927	30,571	39,650	--	--	4,706
31-40	39,496	--	35,005	--	--	4,491
41-50	20,273	--	10,486	4,058	--	5,729
51-60	21,956	--	4,590	--	4,758	12,608
61-70	24,781	--	--	--	--	24,781
71-80	33,196	--	--	--	--	33,196
81+	85,803	--	--	--	--	85,803
No manageable stand	307,657	--	69,652	37,703	8,781	191,521
All classes	658,700	36,213	184,599	46,519	13,539	377,830

Table 14.--Area of timberland, by stand-age and broad management classes, public ownerships, South Florida, 1988

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
----- <u>Acres</u> -----						
0-10	4,494	--	4,494	--	--	--
11-20	--	--	--	--	--	--
21-30	14,918	11,981	--	--	--	2,937
31-40	--	--	--	--	--	--
41-50	--	--	--	--	--	--
51-60	--	--	--	--	--	--
61-70	--	--	--	--	--	--
71-80	2,760	--	--	--	--	2,760
81+	2,936	--	--	--	--	2,936
No manageable stand	7,802	--	--	--	--	7,802
All classes	32,910	11,981	4,494	--	--	16,435

Table 15.--Area of timberland, by stand-age and broad management classes, forest industry,^a South Florida, 1988

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
----- Acres -----						
0-10	--	--	--	--	--	--
11-20	8,463	5,642	--	--	--	2,821
21-30	19,741	16,920	2,821	--	--	--
31-40	2,821	--	--	--	--	2,821
41-50	--	--	--	--	--	--
51-60	5,642	--	2,821	--	--	2,821
61-70	2,821	--	--	--	--	2,821
71-80	--	--	--	--	--	--
81+	5,692	--	--	--	--	5,692
No manageable stand	28,207	--	14,102	--	--	14,105
All classes	73,387	22,562	19,744	--	--	31,081

^aIncludes 0 acres of other private land under long-term lease.

Table 16.--Area of timberland, by stand-age and broad management classes, other private ownerships,^a South Florida, 1988

Stand-age class (years)	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
----- Acres -----						
0-10	16,312	--	11,554	4,758	--	--
11-20	21,342	--	9,168	--	--	12,174
21-30	40,268	1,670	36,829	--	--	1,769
31-40	36,675	--	35,005	--	--	1,670
41-50	20,273	--	10,486	4,058	--	5,729
51-60	16,314	--	1,769	--	4,758	9,787
61-70	21,960	--	--	--	--	21,960
71-80	30,436	--	--	--	--	30,436
81+	77,175	--	--	--	--	77,175
No manageable stand	271,648	--	55,550	37,703	8,781	169,614
All classes	552,403	1,670	160,361	46,519	13,539	330,314

^aExcludes 0 acres of other private land under long-term lease to forest industry.

Table 17.--Area of timberland, by broad management and stand-volume classes, South Florida, 1988

Broad management class	All classes	Stand-volume class (cubic feet of growing stock per acre)				
		0-499	500-999	1000-1499	1500-1999	2000+
----- <u>Acres</u> -----						
Pine plantation	36,213	8,462	11,804	13,127	2,820	--
Natural pine	184,599	97,589	50,314	23,389	--	13,307
Oak-pine	46,519	36,928	9,591	--	--	--
Upland hardwood	13,539	8,781	4,758	--	--	--
Lowland hardwood	377,830	170,064	49,974	51,043	23,715	83,034
All classes	658,700	321,824	126,441	87,559	26,535	96,341

Table 18.--Volume of growing stock on timberland, by broad management class, species group, and stand-age class, South Florida, 1988

Broad management class and species group	All classes	No manageable stand	Stand-age class (years)								81+
			0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	
----- Thousand cubic feet -----											
Pine plantation											
Softwood	19,278	--	1,580	17,698	--	--	--	--	--	--	--
Hardwood	--	--	--	--	--	--	--	--	--	--	--
Total	19,278	--	1,580	17,698	--	--	--	--	--	--	--
Natural pine											
Softwood	117,136	22,778	5,056	29,778	32,521	9,835	10,929	--	--	--	--
Hardwood	458	--	--	--	458	--	--	--	--	--	--
Total	117,594	22,778	5,056	29,778	32,979	9,835	10,929	--	--	--	--
Oak-pine											
Softwood	16,171	11,658	2,025	--	--	2,488	--	--	--	--	--
Hardwood	--	--	--	--	--	--	--	--	--	--	--
Total	16,171	11,658	2,025	--	--	2,488	--	--	--	--	--
Upland hardwood											
Softwood	--	--	--	--	--	--	--	--	--	--	--
Hardwood	4,149	--	--	--	--	4,149	--	--	--	--	--
Total	4,149	--	--	--	--	4,149	--	--	--	--	--
Lowland hardwood											
Softwood	405,303	29,197	3,646	2,593	2,383	8,658	27,086	51,227	64,231	216,282	
Hardwood	57,362	21,704	289	--	2,696	1,469	1,093	11,780	12,785	5,546	
Total	462,665	50,901	3,935	2,593	5,079	10,127	28,179	63,007	77,016	221,828	
All types											
Softwood	557,888	63,633	10,282	50,069	34,904	20,981	38,015	51,227	64,231	216,282	
Hardwood	61,969	21,704	289	--	3,154	1,469	5,242	11,780	12,785	5,546	
Total	619,857	85,337	10,571	50,069	38,058	22,450	43,257	63,007	77,016	221,828	

Table 19.--Average net annual growth of growing stock on timberland, by broad management class, species group, and stand-age class, South Florida, 1980-1987

Broad management class ^a and species group	All classes	No manageable stand	Stand-age class ^a (years)								Thousand cubic feet		
			0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80		81+	
Pine plantation													
Softwood	1,654	--	157	1,497	--	--	--	--	--	--	--	--	--
Hardwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	1,654	--	157	1,497	--	--	--	--	--	--	--	--	--
Natural pine													
Softwood	5,107	1,056	228	576	1,426	1,272	357	192	--	--	--	--	--
Hardwood	16	--	--	--	--	16	--	--	--	--	--	--	--
Total	5,123	1,056	228	576	1,426	1,288	357	192	--	--	--	--	--
Oak-pine													
Softwood	773	389	88	--	--	--	296	--	--	--	--	--	--
Hardwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	773	389	88	--	--	--	296	--	--	--	--	--	--
Upland hardwood													
Softwood	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwood	89	--	--	--	--	--	--	89	--	--	--	--	--
Total	89	--	--	--	--	--	--	89	--	--	--	--	--
Lowland hardwood													
Softwood	8,574	1,281	--	111	137	77	167	609	1,344	1,193	3,655		
Hardwood	1,805	577	--	49	--	51	107	42	630	219	130		
Total	10,379	1,858	--	160	137	128	274	651	1,974	1,412	3,785		
All types													
Softwood	16,108	2,726	316	844	3,060	1,349	820	801	1,344	1,193	3,655		
Hardwood	1,910	577	--	49	--	67	107	131	630	219	130		
Total	18,018	3,303	316	893	3,060	1,416	927	932	1,974	1,412	3,785		

^aClassifications at the end of the remeasurement period.

Table 20.--Average annual removals of growing stock on timberland, by broad management class, species group, and stand-age class, South Florida, 1980-1987

Broad management class ^a and species group	All classes	No manageable stand					Stand-age class ^a (years)					Thousand cubic feet
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81+		
Pine plantation												
Softwood	56	--	56	--	--	--	--	--	--	--	--	--
Hardwood	--	--	--	--	--	--	--	--	--	--	--	--
Total	56	--	56	--	--	--	--	--	--	--	--	--
Natural pine												
Softwood	3,836	1,961	--	1,402	423	--	--	--	--	--	--	--
Hardwood	--	--	--	--	--	--	--	--	--	--	--	--
Total	3,836	1,961	--	1,402	423	--	--	--	--	--	--	--
Oak-pine												
Softwood	--	--	--	--	--	--	--	--	--	--	--	--
Hardwood	30	30	--	--	--	--	--	--	--	--	--	--
Total	30	30	--	--	--	--	--	--	--	--	--	--
Upland hardwood												
Softwood	--	--	--	--	--	--	--	--	--	--	--	--
Hardwood	--	--	--	--	--	--	--	--	--	--	--	--
Total	--	--	--	--	--	--	--	--	--	--	--	--
Lowland hardwood												
Softwood	453	279	--	--	--	--	--	174	--	--	--	--
Hardwood	38	38	--	--	--	--	--	--	--	--	--	--
Total	491	317	--	--	--	--	--	174	--	--	--	--
All types												
Softwood	4,345	2,240	50	56	1,402	423	--	174	--	--	--	--
Hardwood	68	68	--	--	--	--	--	--	--	--	--	--
Total	4,413	2,308	50	56	1,402	423	--	174	--	--	--	--

^aClassifications before timber removals.

Table 21.--Merchantable volume of live trees and growing stock on timberland, by forest-type and species groups, South Florida, 1988

Forest-type group	Live trees					Growing stock				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	--- Thousand cubic feet ---									
White pine-hemlock	--	--	--	--	--	--	--	--	--	--
Spruce-fir	--	--	--	--	--	--	--	--	--	--
Longleaf-slash pine	142,237	131,057	7,727	--	3,453	136,189	130,588	5,143	--	458
Loblolly-shortleaf pine	683	683	--	--	--	683	683	--	--	--
Oak-pine	17,819	12,404	4,203	--	1,212	16,171	12,404	3,767	--	--
Oak-hickory	9,668	--	--	500	9,168	4,149	--	--	500	3,649
Oak-gum-cypress	525,198	18,202	410,335	48,343	48,318	462,665	18,202	387,101	36,723	20,639
Elm-ash-cottonwood	--	--	--	--	--	--	--	--	--	--
Maple-beech-birch	--	--	--	--	--	--	--	--	--	--
All types	695,605	162,346	422,265	48,843	62,151	619,857	161,877	396,011	37,223	24,746

Table 24.--Area of timberland regenerated annually, by type of regeneration and broad management class, South Florida, 1980 to 1988

Type of regeneration	All classes	Broad management class ^a				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
		----- <u>Acres</u> -----				
Artificial regeneration following harvest	--	--	--	--	--	--
Natural regeneration following harvest	--	--	--	--	--	--
Other artificial regeneration on forest land	--	--	--	--	--	--
Other natural regeneration on forest land	1,716	--	1,082	634	--	--
Artificial regeneration on nonforest land	--	--	--	--	--	--
Natural reversion of nonforest land	783	--	242	--	--	541
Total	2,499	--	1,324	634	--	541

^aClassification after regeneration.

Table 25.--Area of timberland, by treatment opportunity and broad management classes, South Florida, 1988

Treatment opportunity class	All classes	Broad management class				
		Pine plantation	Natural pine	Oak-pine	Upland hardwood	Lowland hardwood
----- Acres -----						
Salvage	--	--	--	--	--	--
Harvest	68,273	--	--	--	--	68,273
Commercial thinning	8,460	8,460	--	--	--	--
Other stand improvement	20,990	--	12,174	4,758	--	4,058
Stand conversion	--	--	--	--	--	--
Regeneration	300,663	--	69,652	37,703	8,781	184,527
Stands in relatively good condition	213,596	27,753	102,773	4,058	4,758	74,254
Adverse sites ^a	46,718	--	--	--	--	46,718
All classes	658,700	36,213	184,599	46,519	13,539	377,830

^aAreas where management opportunities are severely limited because of steep slopes or poor drainage.

Table 26.--Area of timberland, by treatment opportunity and ownership classes, South Florida, 1988

Treatment opportunity class	All ownerships	Ownership class			
		Public	Forest industry	Forest industry-leased	Other private
----- Acres -----					
Salvage	--	--	--	--	--
Harvest	68,273	5,696	5,692	--	56,885
Commercial thinning	8,460	--	8,460	--	--
Other stand improvement	20,990	--	--	--	20,990
Stand conversion	--	--	--	--	--
Regeneration	300,663	4,866	28,207	--	267,590
Stands in relatively good condition	213,596	19,412	25,386	--	168,798
Adverse sites ^a	46,718	2,936	5,642	--	38,140
All classes	658,700	32,910	73,387	--	552,403

^aAreas where management opportunities are severely limited because of steep slopes or poor drainage.

Table 27.--Merchantable volume of live trees and growing stock on timberland, by ownership class and species group, South Florida, 1988

Ownership class	Live trees					Growing stock				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand cubic feet									
National forest	--	--	--	--	--	--	--	--	--	--
Other public	31,068	2,347	11,893	8,324	8,504	21,189	2,347	10,603	4,737	3,502
Forest industry	89,868	32,943	40,662	9,671	6,592	80,832	32,943	40,482	6,160	1,247
Forest industry-leased	--	--	--	--	--	--	--	--	--	--
Other private	574,669	127,056	369,710	30,848	47,055	517,836	126,587	344,926	26,326	19,997
All ownerships	695,605	162,346	422,265	48,843	62,151	619,857	161,877	396,011	37,223	24,746

Table 28.--Volume of sawtimber on timberland, by ownership class and species group, South Florida, 1988

Ownership class	Small sawtimber ^a					Large sawtimber ^b				
	All species	Pine	Other softwood	Soft hardwood	Hard hardwood	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
	Thousand board feet									
National forest	--	--	--	--	--	--	--	--	--	--
Other public	34,386	7,274	17,507	4,822	4,783	44,650	3,633	14,824	15,016	11,177
Forest industry	130,729	46,802	74,607	9,320	--	138,826	37,706	88,293	6,828	5,999
Forest industry-leased	--	--	--	--	--	--	--	--	--	--
Other private	894,529	269,228	571,267	34,021	20,013	523,098	61,317	386,214	33,169	42,398
All ownerships	1,059,644	323,304	663,381	48,163	24,796	706,574	102,656	489,331	55,013	59,574

^aVolume of sawtimber trees less than 15.0 inches at d.b.h.

^bVolume of sawtimber trees 15.0 inches and larger at d.b.h.

Table 31.--Volume of timber on timberland, by class of timber and species group, South Florida, 1988

Class of timber	All species	Pine	Other softwood	Soft hardwood	Hard hardwood
- - - - - <u>Thousand cubic feet</u> - - - - -					
Sawtimber trees					
Saw-log portion	355,365	82,022	237,481	20,795	15,067
Upper-stem portion ^a	52,579	11,510	32,986	5,524	2,559
Total	407,944	93,532	270,467	26,319	17,626
Poletimber trees					
All growing-stock trees	619,857	161,877	396,011	37,223	24,746
Rough trees					
Sawtimber size	32,685	--	8,596	6,025	18,064
Poletimber size	38,816	469	14,914	4,602	18,831
Total	71,501	469	23,510	10,627	36,895
Rotten trees					
Sawtimber size	3,245	--	1,874	861	510
Poletimber size	1,002	--	870	132	--
Total	4,247	--	2,744	993	510
Salvable dead trees					
Sawtimber size	1,298	966	332	--	--
Poletimber size	859	372	487	--	--
Total	2,157	1,338	819	--	--
Total, all timber	697,762	163,684	423,084	48,843	62,151

^aIncludes cull sections in the saw-log portion.

Table 32.--Number of live trees on timberland, by species and diameter class, South Florida, 1988

Species	Diameter class (inches at breast height)													21.0-29.0 and larger
	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	594	154	308		66	43	23							
Slash pine	45,095	11,963	8,517	9,835	8,131	4,074	1,477	620	293	107	73	5		
Shortleaf pine														
Loblolly pine														
Pond pine	336			164	172									
Virginia pine														
Pitch pine														
Table Mountain pine														
Spruce pine														
Sand pine	1,201	1,048		92	48				13					
Eastern white pine														
Eastern hemlock														
Spruce and fir														
Baldcypress	11,072	3,836	2,872	1,152	1,182	944	445	381	139	61	35	25		
Pondcypress	136,623	59,554	31,174	16,924	13,863	7,450	3,209	2,269	999	636	216	300	29	
Cedars														
Total softwoods	194,921	76,555	42,871	28,167	23,462	12,511	5,154	3,270	1,444	804	324	330	29	
Hardwood														
Select white oaks														
Select red oaks														
Chestnut oak														
Other white oaks	8,980	3,936	1,904	1,682	446	369	195	137	219	50	17	19	6	
Other red oaks	4,036	782	850	825	246	411	401	173	124	46	81	80	17	
Hickory														
Yellow birch														
Hard maple														
Soft maple	12,752	6,179	3,148	976	449	573	735	224	315	107	13	33		
Beech														
Sweetgum														
Tupelo and blackgum	153				49	37	67							
Ash	13,744	7,562	5,107	823	187	65								
Cottonwood														
Basswood														
Yellow-poplar														
Bay and magnolia	4,059	2,772	770	141	226	99	51							
Black cherry														
Black walnut														
Sycamore														
Black locust														
Elm	101				57	44								
Other eastern hardwoods	59,716	48,067	8,708	1,993	640	261		32			15			
Total hardwoods	103,541	69,298	20,487	6,440	2,300	1,859	1,449	566	658	203	126	132	23	
All species	298,462	145,853	63,358	34,607	25,762	14,370	6,603	3,836	2,102	1,007	450	462	52	

Table 33.--Number of growing-stock trees on timberland, by species and diameter class, South Florida, 1988

Species	Diameter class (inches at breast height)														29.0 and larger
	All classes		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		
	----- Thousand trees -----														
Softwood															
Longleaf pine	594	154	308		66	43	23								
Slash pine	42,952	10,310	8,276	9,631	8,086	4,074	1,477	620	293	107	73	5			
Shortleaf pine															
Loblolly pine															
Pond pine	336			164	172										
Virginia pine															
Pitch pine															
Table Mountain pine															
Spruce pine															
Sand pine	1,201	1,048		92	48				13						
Eastern white pine															
Eastern hemlock															
Spruce and fir															
Baldcypress	10,095	3,200	2,718	1,152	1,127	833	445	381	118	61	35	25			
Pondcypress	108,267	42,834	25,093	14,213	11,936	6,913	3,039	2,122	999	600	216	277			
Cedars															
Total softwoods	163,445	57,546	36,395	25,252	21,435	11,863	4,984	3,123	1,423	768	324	307	25		
Hardwood															
Select white oaks															
Select red oaks															
Chestnut oak															
Other white oaks	753		482	160	246	205	361	54	58	29	44	50	5		
Other red oaks	1,835		241	499	246				101						
Hickory															
Yellow birch															
Hard maple															
Soft maple	6,771	2,169	2,169	554	371	484	535	146	246	51	13	33			
Beech															
Sweetgum															
Tupelo and blackgum	135				49	37	49								
Ash	2,853	980	1,703	170											
Cottonwood															
Basswood															
Yellow-poplar															
Bay and magnolia	2,341	1,540	462	141	48	99	51								
Black cherry															
Black walnut															
Sycamore															
Black locust															
Elm															
Other eastern hardwoods	354			258	96										
Total hardwoods	15,042	4,689	5,057	1,622	970	825	996	244	405	80	66	83	5		
All species	178,487	62,235	41,452	26,874	22,405	12,688	5,980	3,367	1,828	848	390	390	30		

Table 34.--Merchantable volume of live trees on timberland, by species and diameter class, South Florida, 1988

Species	Diameter class (inches at breast height)											29.0 and larger									
	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		21.0-22.9				
All classes	Thousand cubic feet																				
Softwood																					
Longleaf pine	837		258	264	315																
Slash pine	159,826	24,525	42,610	39,320	22,135	14,303	8,031	4,468	4,077												
Shortleaf pine																					
Loblolly pine																					
Pond pine	1,011	349	662																		
Virginia pine																					
Pitch pine																					
Table Mountain pine																					
Spruce pine																					
Sand pine	672	163	247									262									
Eastern white pine																					
Eastern hemlock																					
Spruce and fir																					
Baldcypress	44,446	3,701	7,299	8,865	6,921	8,149	3,364	2,335	1,789												
Pondcypress	377,819	48,600	81,728	71,770	45,616	45,735	28,731	22,853	10,154												
Cedars																					
Total softwoods	584,611	77,338	132,804	120,219	74,987	68,187	40,388	29,656	16,020												
Hardwood																					
Select white oaks																					
Select red oaks																					
Chestnut oak																					
Other white oaks	19,328	3,900	1,854	2,202	1,826	2,168	4,125	1,214	623												
Other red oaks	30,602	1,766	1,323	3,830	4,825	3,418	3,331	1,346	2,917												
Hickory																					
Yellow birch																					
Hard maple																					
Soft maple	42,796	2,629	3,195	5,482	11,537	4,207	8,947	3,793	676												
Beech																					
Sweetgum																					
Tupelo and blackgum	1,603		277	271	1,055																
Ash	2,568	1,583	711	274																	
Cottonwood																					
Basswood																					
Yellow-poplar																					
Bay and magnolia	3,087	231	1,014	1,182	660																
Black cherry																					
Black walnut																					
Sycamore																					
Black locust																					
Elm	575		276	299																	
Other eastern hardwoods	10,435	4,930	2,653	1,707		617			528												
Total hardwoods	110,994	15,039	11,303	15,247	19,903	10,410	16,403	6,353	4,744												
All species	695,605	92,377	144,107	135,466	94,890	78,597	56,791	36,009	20,764												

Table 35.--Volume of growing stock on timberland, by species and diameter class, South Florida, 1988

Species	Diameter class (inches at breast height)											All classes	Thousand cubic feet		
	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	21.0-22.9	29.0 and larger					
Softwood															
Longleaf pine	837	258	264	315											
Slash pine	159,357	24,284	39,320	22,135	14,303	8,031	4,468	4,077	357						
Shortleaf pine															
Loblolly pine															
Pond pine	1,011	349	662												
Virginia pine															
Pitch pine															
Table Mountain pine															
Spruce pine															
Sand pine	672	163	247			262									
Eastern white pine															
Eastern hemlock															
Spruce and fir															
Baldcypress	43,189	3,701	8,002	6,921	8,149	3,150	2,335	1,789	2,023						
Pondcypress	352,822	42,207	67,410	43,607	43,943	28,731	22,262	10,154	18,150	3,841					
Cedars															
Total softwoods	557,888	70,704	123,185	114,996	66,395	40,174	29,065	16,020	20,530	3,841					
Hardwood															
Select white oaks															
Select red oaks															
Chestnut oak															
Other white oaks	2,999	720		686	1,172			421							
Other red oaks	19,853	1,061	2,122	4,334	1,256	2,821	1,055	1,453	3,635	793					
Hickory															
Yellow birch															
Hard maple															
Soft maple	33,577	1,354	2,418	9,352	3,285	7,141	2,158	676	2,330						
Beech															
Sweetgum															
Tupelo and blackgum	1,265	277	271	717											
Ash	293														
Cottonwood															
Basswood															
Yellow-poplar															
Bay and magnolia	2,381	231	1,182	660											
Black cherry															
Black walnut															
Sycamore															
Black locust															
Elm															
Other eastern hardwoods	1,601	1,072	529												
Total hardwoods	61,969	4,011	5,575	8,438	5,227	11,134	3,213	2,550	5,965	793					
All species	619,857	74,715	128,760	123,434	71,622	51,308	32,278	18,570	26,495	4,634					

Table 36.--Volume of sawtimber on timberland, by species and diameter class, South Florida, 1988

Species	All classes	Diameter class (inches at breast height)										29.0 and larger
		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 board feet -----												
Softwood												
Longleaf pine	2,515	951	1,564	--	--	--	--	--	--	--	--	--
Slash pine	421,982	143,902	101,643	75,244	45,508	27,183	26,050	2,452	--	--	--	--
Shortleaf pine	--	--	--	--	--	--	--	--	--	--	--	--
Loblolly pine	--	--	--	--	--	--	--	--	--	--	--	--
Pond pine	--	--	--	--	--	--	--	--	--	--	--	--
Virginia pine	--	--	--	--	--	--	--	--	--	--	--	--
Fitch pine	--	--	--	--	--	--	--	--	--	--	--	--
Table Mountain pine	--	--	--	--	--	--	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--	--	--	--
Sard pine	1,463	--	--	1,463	--	--	--	--	--	--	--	--
Eastern white pine	--	--	--	--	--	--	--	--	--	--	--	--
Eastern hemlock	--	--	--	--	--	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--	--
Baldcypress	133,077	23,596	26,414	34,815	14,880	11,975	9,674	11,723	--	--	--	--
Pondcypress	1,019,635	212,518	170,210	195,828	140,162	115,607	55,444	105,349	24,517	--	--	--
Cedars	--	--	--	--	--	--	--	--	--	--	--	--
Total softwoods	1,578,672	380,967	299,831	305,887	202,013	154,765	91,168	119,524	24,517			
Hardwood												
Select white oaks	--	--	--	--	--	--	--	--	--	--	--	--
Select red oaks	--	--	--	--	--	--	--	--	--	--	--	--
Chestnut oak	--	--	--	--	--	--	--	--	--	--	--	--
Other white oaks	9,577	--	--	4,912	--	--	1,992	--	--	--	--	--
Other red oaks	74,793	--	16,486	5,637	13,522	5,353	7,737	21,064	4,994	--	--	--
Hickory	--	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--	--
Hard maple	--	--	--	--	--	--	--	--	--	--	--	--
Soft maple	98,539	--	31,018	--	--	--	--	--	--	--	--	--
Beech	--	--	--	--	--	--	--	--	--	--	--	--
Sweetgum	--	--	--	--	--	--	--	--	--	--	--	--
Tupelo and blackgum	2,448	--	2,448	--	--	--	--	--	--	--	--	--
Ash	--	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--
Basswood	--	--	--	--	--	--	--	--	--	--	--	--
Yellow-poplar	--	--	--	--	--	--	--	--	--	--	--	--
Bay and magnolia	2,189	--	2,189	--	--	--	--	--	--	--	--	--
Black cherry	--	--	--	--	--	--	--	--	--	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--	--	--	--	--
Black locust	--	--	--	--	--	--	--	--	--	--	--	--
Elm	--	--	--	--	--	--	--	--	--	--	--	--
Other eastern hardwoods	--	--	--	--	--	--	--	--	--	--	--	--
Total hardwoods	187,546	--	52,141	20,818	48,564	15,142	13,037	32,850	4,994			
All species	1,766,218	380,967	351,972	326,705	250,577	169,907	104,205	152,374	29,511			

Table 37.--Volume of sawtimber on timberland, by species, size class, and tree grade, and tree grade, South Florida, 1988

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
----- Thousand board feet -----									
Softwood									
Yellow pines ^a	425,960	108,568	106,630	210,762	--	102,656	52,722	19,298	30,636
Eastern white pineb	--	--	--	--	--	--	--	--	--
Spruce and firb	--	--	--	--	--	--	--	--	--
Cypressc	1,152,712	246,816	307,705	587,238	10,953	489,331	246,816	188,163	54,352
Other eastern softwoods ^b	--	--	--	--	--	--	--	--	--
Total	1,578,672	355,384	414,335	798,000	10,953	591,987	299,538	207,461	84,988
Hardwood^c									
Select white and red oaks	--	--	--	--	--	--	--	--	--
Other white and red oaks	84,370	8,255	34,312	40,406	1,397	59,574	8,255	34,312	15,610
Hickory	--	--	--	--	--	--	--	--	--
Yellow birch	--	--	--	--	--	--	--	--	--
Hard maple	--	--	--	--	--	--	--	--	--
Sweetgum	--	--	--	--	--	--	--	--	--
Ash, walnut, and black cherry	--	--	--	--	--	--	--	--	--
Yellow-poplar	--	--	--	--	--	--	--	--	--
Other eastern hardwoods	103,176	--	3,754	95,771	3,651	55,013	--	3,754	48,525
Total	187,546	8,255	38,066	136,177	5,048	114,587	8,255	38,066	64,135
All species	1,766,218	363,639	452,401	934,177	16,001	706,574	307,793	245,527	149,123

^aFor 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.

^bFor 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, Broomall, PA, 1971.

^cFor 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, Broomall, 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, Broomall, PA, 1971.

Table 38.--Cubic volume in the merchantable saw-log portion of sawtimber trees on timberland, by species and diameter class, South Florida, 1988

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
----- Thousand cubic feet -----									
Softwood									
Longleaf pine	489	197	292	--	--	--	--	--	--
Slash pine	81,281	31,024	20,055	13,613	7,796	4,401	4,038	354	--
Shortleaf pine	--	--	--	--	--	--	--	--	--
Loblolly pine	--	--	--	--	--	--	--	--	--
Pond pine	--	--	--	--	--	--	--	--	--
Virginia pine	--	--	--	--	--	--	--	--	--
Pitch pine	--	--	--	--	--	--	--	--	--
Table Mountain pine	--	--	--	--	--	--	--	--	--
Spruce pine	--	--	--	--	--	--	--	--	--
Sand pine	252	--	--	--	252	--	--	--	--
Eastern white pine	--	--	--	--	--	--	--	--	--
Eastern hemlock	--	--	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--
Baldcypress	27,428	5,604	5,851	7,247	2,896	2,192	1,698	1,940	--
Pondcypress	210,053	52,123	38,213	40,394	27,037	21,211	9,754	17,570	3,751
Cedars	--	--	--	--	--	--	--	--	--
Total softwoods	319,503	88,948	64,411	61,254	37,981	27,804	15,490	19,864	3,751
Hardwood									
Select white oaks	--	--	--	--	--	--	--	--	--
Select red oaks	--	--	--	--	--	--	--	--	--
Chestnut oak	--	--	--	--	--	--	--	--	--
Other white oaks	1,954	--	--	564	1,008	--	382	--	--
Other red oaks	13,113	--	3,172	1,060	2,464	946	1,326	3,392	753
Hickory	--	--	--	--	--	--	--	--	--
Yellow birch	--	--	--	--	--	--	--	--	--
Hard maple	--	--	--	--	--	--	--	--	--
Soft maple	19,817	--	6,507	2,605	6,059	1,898	613	2,135	--
Beech	--	--	--	--	--	--	--	--	--
Sweetgum	--	--	--	--	--	--	--	--	--
Tupelo and blackgum	517	--	517	--	--	--	--	--	--
Ash	--	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--	--
Basswood	--	--	--	--	--	--	--	--	--
Yellow-poplar	--	--	--	--	--	--	--	--	--
Bay and magnolia	461	--	461	--	--	--	--	--	--
Black cherry	--	--	--	--	--	--	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--
Sycamore	--	--	--	--	--	--	--	--	--
Black locust	--	--	--	--	--	--	--	--	--
Elm	--	--	--	--	--	--	--	--	--
Other eastern hardwoods	--	--	--	--	--	--	--	--	--
Total hardwoods	35,862	--	10,657	4,229	9,531	2,844	2,321	5,527	753
All species	355,365	88,948	75,068	65,483	47,512	30,648	17,811	25,391	4,504

Table 39.--Total volume of live trees on timberland, by species and diameter class, South Florida, 1988

Species	Diameter class (inches at breast height)											Total softwoods	Total hardwoods	All species		
	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 cubic feet -----															
Softwood																
Longleaf pine	1,328	34		319	309	358										
Slash pine	202,585	2,693	33,826	51,503	45,515	25,142	16,091	8,994	4,984	4,541	396					
Shortleaf pine																
Loblolly pine																
Pond pine	1,271		477	794												
Virginia pine																
Pitch pine																
Table Mountain pine																
Spruce pine								297								
Sand pine	1,015	171	244	303												
Eastern white pine																
Eastern hemlock																
Spruce and fir																
Baldcypress	61,722	1,289	5,723	9,400	11,013	8,437	9,872	4,137	2,801	2,142	2,417					
Pondcypress	574,514	18,468	82,703	113,602	94,444	58,782	58,359	36,286	28,769	12,698	23,532	5,090				
Cedars																
Total softwoods	842,435	22,655	122,973	175,921	151,281	92,719	84,322	49,714	36,554	19,381	26,345	5,090				
Hardwood																
Select white oaks																
Select red oaks																
Chestnut oak																
Other white oaks	29,729	1,387	6,556	2,530	2,838	2,285	2,663	5,032	1,474	753	1,011	706				
Other red oaks	40,688	127	2,755	1,752	4,908	6,195	4,293	4,177	1,704	3,642	6,945	2,858				
Hickory																
Yellow birch																
Hard maple																
Soft maple	58,802	1,601	3,778	4,020	6,725	13,939	5,147	10,670	4,574	801	2,762					
Beech																
Sweetgum																
Tupelo and blackgum	1,981			360	337	1,284										
Ash	11,962	2,004	2,243	884	331											
Cottonwood																
Basswood																
Yellow-poplar																
Bay and magnolia	5,414	668	399	1,287	1,429	787										
Black cherry																
Black walnut																
Sycamore																
Black locust																
Elm	719			346	373											
Other eastern hardwoods	29,906	8,159	7,936	3,390	2,077		705			599						
Total hardwoods	179,201	13,946	22,771	14,569	19,018	24,490	12,808	19,879	7,752	5,795	10,718	3,564				
All species	1,021,636	36,601	145,744	190,490	170,299	117,209	97,130	69,593	44,306	25,176	37,063	8,654				

42 Table 40.--Green weight of forest biomass on timberland, by species and diameter class, South Florida, 1988

Species	Diameter class (inches at breast height)													Total softwoods
	All classes		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	
----- Hundred thousand pounds -----														
Softwood														
Longleaf pine	1,098	28	268		253	250	299							
Slash pine	160,753	1,813	8,253	25,406	40,912	36,142	20,211	12,863	7,302	3,952	3,577		322	
Shortleaf pine														
Lebolly pine														
Pond pine	979			343	636									
Virginia pine														
Pitch pine														
Table Mountain pine														
Spruce pine														
Sand pine	746	105		180	227				234					
Eastern white pine														
Eastern hemlock														
Spruce and fir														
Baldcypress	43,523	731	2,836	2,673	5,992	7,725	6,355	7,672	3,371	2,326	1,801	2,041		
Pondcypress	353,176	10,010	26,360	35,982	62,983	57,523	39,070	40,990	26,371	21,511	9,709	18,471	4,196	
Cedars														
Total softwoods	560,275	12,687	37,717	64,584	111,003	101,640	65,935	61,525	37,278	27,789	15,087	20,834	4,196	
Hardwood														
Select white oaks														
Select red oaks														
Chestnut oak														
Other white oaks	25,846	1,081	1,843	3,973	2,108	2,645	2,210	2,634	5,195	1,559	761	1,063	774	
Other red oaks	34,927	119	995	2,287	1,584	4,316	5,437	3,781	3,588	1,498	3,282	5,754	2,286	
Hickory														
Yellow birch														
Hard maple														
Soft maple	44,687	1,219	3,388	2,704	2,892	5,197	10,729	4,038	8,353	3,503	630	2,034		
Beech														
Sweetgum														
Tupelo and blackgum	1,319													
Ash	8,437	1,229	4,116	1,996	770	233	868							
Cottonwood														
Basswood														
Yellow-poplar														
Bay and magnolia	3,423	417	521	189	856	909	531							
Black cherry														
Black walnut														
Sycamore														
Black locust														
Elm	494				243	251								
Other eastern hardwoods	23,592	6,615	6,411	5,243	2,751	1,720		476			376			
Total hardwoods	142,725	10,680	17,274	16,392	11,422	15,597	19,775	10,929	17,136	6,560	5,049	8,851	3,060	
All species	703,000	23,367	54,991	80,976	122,425	117,237	85,710	72,454	54,414	34,349	20,136	29,685	7,256	

Table 41.--Average net annual growth and removals of live timber and growing stock on timberland, by species, South Florida, 1980-1987

Species	Live timber ^a		Growing stock	
	Net annual growth	Annual timber removals	Net annual growth	Annual timber removals
	- - - - - <u>Thousand cubic feet</u> - - - - -			
Softwood				
Yellow pines	8,291	4,171	8,280	4,171
Eastern white pine	--	--	--	--
Spruce and fir	--	--	--	--
Cypress	7,957	319	7,828	174
Other eastern softwoods	--	--	--	--
Total softwoods	16,248	4,490	16,108	4,345
Hardwood				
Select white and red oaks	--	--	--	--
Other white and red oaks	1,328	512	589	68
Hickory	--	--	--	--
Yellow birch	--	--	--	--
Hard maple	--	--	--	--
Sweetgum	--	--	--	--
Ash, walnut, and black cherry	121	--	58	--
Yellow-poplar	--	--	--	--
Tupelo and blackgum	51	--	45	--
Bay and magnolia	53	--	48	--
Other eastern hardwoods	1,907	47	1,170	--
Total hardwoods	3,460	559	1,910	68
All species	19,708	5,049	18,018	4,413

^aMerchantable portion only.

Table 42.--Average net annual growth and removals of sawtimber on timberland, by species, South Florida, 1980-1987

Species	Net annual growth	Annual timber removals
	<u>Thousand board feet</u>	
Softwood		
Yellow pines	28,830	12,085
Eastern white pine	--	--
Spruce and fir	--	--
Cypress	29,222	--
Other eastern softwoods	--	--
	<hr/>	
Total softwoods	58,052	12,085
	<hr/>	
Hardwood		
Select white and red oaks	--	--
Other white and red oaks	4,252	105
Hickory	--	--
Yellow birch	--	--
Hard maple	--	--
Sweetgum	--	--
Ash, walnut, and black cherry	--	--
Yellow-poplar	--	--
Tupelo and blackgum	69	--
Bay and magnolia	804	--
Other eastern hardwoods	3,367	--
	<hr/>	
Total hardwoods	8,492	105
	<hr/>	
All species	66,544	12,190

Table 43.--Average annual removals of growing stock on timberland, by species and diameter class, South Florida, 1980-1987

Species	Diameter class (inches at breast height)										Thousand cubic feet	
	All classes	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
Softwood												
Yellow pines	4,171	531	1,030	945	729	452	364	120				
Eastern white pine	--	--	--	--	--	--	--	--	--	--	--	--
Spruce and fir	--	--	--	--	--	--	--	--	--	--	--	--
Cypress	174	60	114	--	--	--	--	--	--	--	--	--
Other eastern softwoods	--	--	--	--	--	--	--	--	--	--	--	--
Total softwoods	4,345	591	1,144	945	729	452	364	120	--	--	--	--
Hardwood												
Select white and red oaks	--	--	--	--	--	--	--	--	--	--	--	--
Other white and red oaks	68	38	--	--	30	--	--	--	--	--	--	--
Hickory	--	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--	--
Hard maple	--	--	--	--	--	--	--	--	--	--	--	--
Sweetgum	--	--	--	--	--	--	--	--	--	--	--	--
Ash, walnut, and black cherry	--	--	--	--	--	--	--	--	--	--	--	--
Yellow-poplar	--	--	--	--	--	--	--	--	--	--	--	--
Tupelo and blackgum	--	--	--	--	--	--	--	--	--	--	--	--
Bay and magnolia	--	--	--	--	--	--	--	--	--	--	--	--
Other eastern hardwoods	--	--	--	--	--	--	--	--	--	--	--	--
Total hardwoods	68	38	--	--	30	--	--	--	--	--	--	--
All species	4,413	629	1,144	945	759	452	364	120	--	--	--	--

Table 44.--Average annual mortality of live timber, growing stock, and sawtimber on timberland, by species, South Florida, 1980-1987

Species	Live timber ^a	Growing stock	Sawtimber
	<u>Thousand</u> -- <u>cubic feet</u> --		<u>Thousand</u> <u>board feet</u>
Softwood			
Yellow pines	3,833	3,738	12,928
Eastern white pine	---	---	---
Spruce and fir	---	---	---
Cypress	2,857	2,285	3,958
Other eastern softwoods	---	---	---
Total softwoods	6,690	6,023	16,886
Hardwood			
Select white and red oaks	---	---	---
Other white and red oaks	633	189	356
Hickory	---	---	---
Yellow birch	---	---	---
Hard maple	---	---	---
Sweetgum	---	---	---
Ash, walnut, and black cherry	91	---	---
Yellow-poplar	---	---	---
Tupelo and blackgum	---	---	---
Bay and magnolia	71	71	---
Other eastern hardwoods	1,003	376	711
Total hardwoods	1,798	636	1,067
All species	8,488	6,659	17,953

^aMerchantable portion only.

Table 45.--Change in number of live trees on timberland, by species group, survey completion date, and diameter class, South Florida

Species group and year	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 and larger
----- Thousand trees -----									
Yellow pine									
1980	65,528	18,847	18,434	13,613	7,711	3,879	1,666	913	465
1988	47,226	13,165	8,825	10,091	8,417	4,117	1,500	620	491
Change	-18,302	-5,682	-9,609	-3,522	+706	+238	-166	-293	+26
Other softwood									
1980	189,697	81,989	43,499	26,233	19,586	9,546	4,587	2,118	2,139
1988	147,695	63,390	34,046	18,076	15,045	8,394	3,654	2,650	2,440
Change	-42,002	-18,599	-9,453	-8,157	-4,541	-1,152	-933	+532	+301
Hardwood									
1980	107,896	71,032	21,704	6,373	3,388	2,050	1,587	1,062	700
1988	103,541	69,298	20,487	6,440	2,300	1,859	1,449	566	1,142
Change	-4,355	-1,734	-1,217	+67	-1,088	-191	-138	-496	+442

Table 46.--Land area, by land use class, major forest type, and survey completion date, South Florida

Land use class	Survey completion date			Change 1980-1988
	1970	1980	1988	
----- Acres -----				
Forest land				
Timberland:				
Pine and oak-pine types	383,528	339,500	267,331	-72,169
Hardwood types	341,073	494,471	391,369	-103,102
Total	724,601	833,971	658,700	-175,271
Reserved timberland	50,600	264,865	291,839	+26,974
Woodland	1,441,615	948,754	1,033,458	+84,704
Total forest land	2,216,816	2,047,590	1,983,997	-63,593
Nonforest land				
Cropland	849,364	926,660	1,089,536	+162,876
Pasture and range	1,589,513	1,910,185	1,513,037	-397,148
Other	3,019,186	2,790,444	3,176,349	+385,905
Total	5,458,063	5,627,289	5,778,922	+151,633
All land^a	7,674,879	7,674,879	7,762,919	+88,040

^aExcludes all water areas.

Table 47.--Volume^a of sawtimber, growing stock, and live timber on timberland, by species group, survey completion date, and diameter class, South Florida

Species group and year	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 (in thousand board feet)										
Softwood										
1970	1,005,197	--	261,085	180,324	233,011	132,229	88,982	48,607		60,959
1980	1,232,405	--	294,452	288,326	243,149	144,186	117,516	64,332		80,444
1988	1,578,672	--	380,967	299,831	305,887	202,013	154,765	91,168		144,041
Hardwood										
1970	119,068	--	--	27,860	36,397	10,457	12,389	8,852		23,113
1980	124,407	--	--	27,508	37,156	9,324	14,200	10,004		26,215
1988	187,546	--	--	52,141	20,818	48,564	15,142	13,037		37,844
GROWING STOCK (in thousand cubic feet)										
Softwood										
1970	422,342	101,803	82,955	45,918	50,875	26,896	17,032	8,961		10,394
1980	469,256	103,007	93,562	73,430	53,091	29,330	22,496	11,860		13,716
1988	557,888	123,185	114,996	72,978	66,395	40,174	29,065	16,020		24,371
Hardwood										
1970	48,905	6,389	8,831	8,658	9,918	2,405	2,764	1,805		4,329
1980	48,118	6,169	8,159	8,550	10,126	2,144	3,169	2,040		4,910
1988	61,969	5,575	8,438	15,063	5,227	11,134	3,213	2,550		6,758
LIVE TIMBER^b (in thousand cubic feet)										
Softwood										
1970	455,722	111,256	90,126	47,692	51,774	28,109	17,032	8,961		10,906
1980	503,611	112,514	101,567	76,289	54,042	30,650	22,496	11,860		14,410
1988	584,611	132,804	120,219	74,987	68,187	40,388	29,656	16,020		25,012
Hardwood										
1970	97,225	13,670	14,819	15,597	15,562	6,138	4,973	3,574		7,615
1980	93,592	13,205	13,699	15,404	15,879	5,494	5,684	4,080		8,675
1988	110,994	11,303	15,247	19,903	10,410	16,403	6,353	4,744		11,592

^aTo provide a basis for valid comparisons, adjustments have been made to allow for differences in volume tables and sawtimber specifications used in previous surveys.

^bMerchantable volume.

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Since 1980, area of timberland in South Florida has decreased by 21 percent to less than 659,000 acres. Area of nonindustrial private forest (NIPF) land has declined to 552,000 acres. Harvests and other cuttings occurred on 2,800 acres annually, while 2,500 acres regenerated each year. Volume of softwood growing stock increased by 19 percent to 558 million cubic feet, and volume of hardwood growing stock by 29 percent to 62 million cubic feet. Average net annual growth decreased 15 percent to 18.0 million cubic feet. Annual removals were down 73 percent to 4.4 million cubic feet. Annual mortality was down 36 percent to 6.7 million cubic feet.

KEYWORDS: Timberland, land use trends, timberland ownership, timber volume, timber growth, timber removals.

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