ALABAMA COOPERATIVE **Extension** SYSTEM

ALABAMA A&M AND AUBURN UNIVERSITIES

In Alabama, Money Does Grow on Trees: Forestry and Its Economic Importance to Alabama

ANR-1331

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The largest wood-supplying region in the United States is the South, and Alabama figures prominently among southern states in timber production. Based on 2002 estimates, almost 56 percent of the total timber harvest in the United States was from southern states, and that trend is predicted to continue through the next 50 years. It was also estimated that between the years 2002 and 2050 the majority of the timber produced will be harvested from forested acres owned by private landowners.

Alabama boasts an estimated 22.6 million acres of forestland, which produced almost $1.7 billion in forest products in 2006. Widely accepted measures of economic activity such as employment, payrolls, and value of shipments can be used to illustrate how forestland, the source of all timber production, is vitally important to Alabama's economy. In this publication, these measures of economic activity have been estimated for the forest resource, the harvesting resource, and the resulting value of forest products manufactured.

Forestland Acreage

In 1926, the Alabama Forestry Commission estimated that there were 22 million acres of forest in Alabama. Although there has been some fluctuation of total forest acres in the past 30 years, levels are currently estimated at 22.6 million acres, slightly higher than the 1926 survey.

Sixty-seven percent, or 2 out of every 3 acres in Alabama are covered with trees (table 1). While all regions are at least 45 percent forested, regions with the highest percentage of forestland are located in the Southwest-North and West-Central regions (figure 1).

Table 1. Land Area and Acres of Forestland by Region in Alabama, 2005

Region	Total Land	Forestland
	Thousand Acres	
North	4,637	2,120
North-Central	6,628	4,343
West-Central	4,404	3,344
Southeast	9,144	6,316
Southwest-North	4,387	3,648
Southwest-South	4,324	2,787
TOTAL	33,524	22,558
Percentage of Total		67 percent

Source: Forest Inventory Mapmaker (version 3.0). http://www.ncrs2.fs.fed.us/4801/fiadb/fim30/wcfim30.asp. USDA Forest Service, Southern Research Station, 2007.

Table 2. Acres of Forestland in Alabama by Ownership Class, 2005

Ownership Class		Thousand Acres	Ownership Percent
Public:	National forest	686.9	3.0
	State	301.1	1.3
	Other federal	222.6	1.0
	County	112.9	0.5
Total Public:		1,323.5	5.8
Private:	Nonindustrial, other private	14,784.7	65.5
	Forest industry	3,498.4	15.5
	Nonindustrial, corporate	2,972.9	13.2
Total Private:		21,256.0	94.2
All Ownerships:			

Source: Forest Inventory Mapmaker (version 3.0). http://www.ncrs2.fs.fed.us/4801/fiadb/fim30/wcfim30.asp. USDA Forest Service, Southern Research Station, 2007.

Forestland Ownership

The majority of forestland in Alabama is privately owned (table 2). Of those private lands, approximately 65 percent is owned by small-scale, family landowners (figure 2). According to 2005 estimates, 13 percent of forested acres were owned by nonindustrial private corporations (i.e., a company or individual without a mill or wood-processing plant). Examples of such owners could be pension funds, mining companies, timber investment

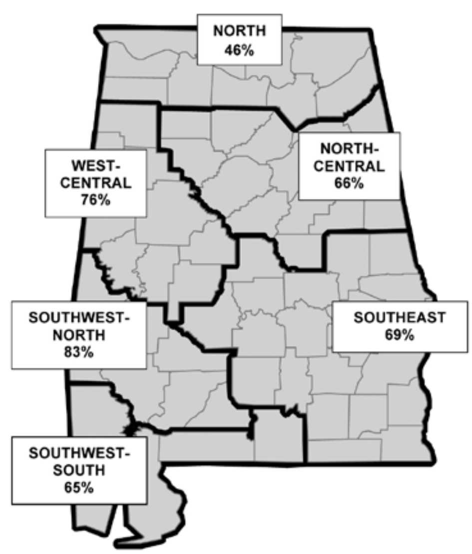

Figure 1. Percentage of commercial forestland in selected regions of Alabama, 2005

Source: Forest Inventory Mapmaker (version 3.0). http://www.ncrs2.fs.fed.us/4801/fiadb/fim30/wcfim30.asp. USDA Forest Service, Southern Research Station, 2007.

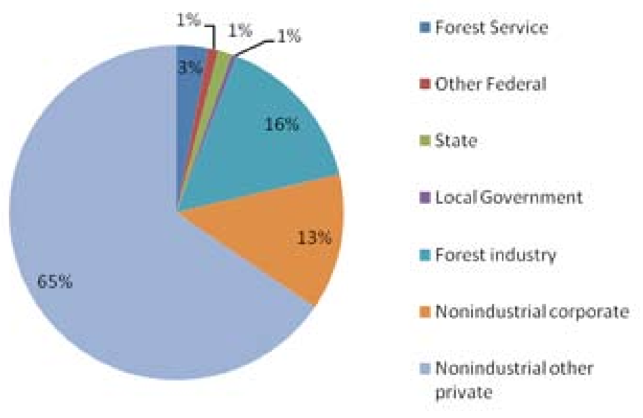

Figure 2. Percentage of forestland in Alabama by ownership class, 2005

Source: Forest Inventory Mapmaker (version 3.0). http://www.ncrs2.fs.fed.us/4801/fiadb/fim30/wcfim30.asp. USDA Forest Service, Southern Research Station, 2007.

management organizations (TIMOs), or real estate investment trusts (REITs). The percentage of industrial ownership declined from approximately 25 percent in 1990 to around 16 percent in 2005. Nonindustrial corporate lands have increased as many forest products companies have sold or reallocated their timberland to focus on the manufacturing side of the business.

The remaining 6 percent (approximately 1.3 million acres) were publicly owned (figure 2). National forests such as the Talladega, Bankhead, Conecuh, and Tuskegee made up just over half of this public ownership.

Timber Inventory

Timber inventory is the volume or number of trees growing at a given time. In 2005, inventory of growing stock was 54 percent hardwoods and 46 percent softwoods (table 3). The total growing stock decreased from 27.8 billion cubic feet in 2000 to 25.1 billion cubic feet in 2005, a 10 percent decrease in 5 years. Softwood inventories had the greatest growth with an almost 6 percent increase during this period. Hardwood inventories decreased by 3.5 billion cubic feet, or 23 percent, between 2000 and 2005, with hard hardwoods such as oaks and hickories reduced by 2.9 billion cubic feet.

Table 3. Inventory of Timber-Growing Stock for Softwood and Hardwood Timber, Alabama, 2005

Timber Type		2000	2005
		Million Cubic Feet	
Softwood	Longleaf/slash pine	1,865	1,762
	Loblolly/shortleaf pine	9,769	10,702
	Other yellow pine	705	605
	Other softwood	344	387
Total Softwood		12,683	13,456
Hardwood	Soft	6,947	6,393
	Hard	8,218	5,296
Total Hardwood		15,165	11,689
Total Inventory		27,848	25,145

Source: Forest Inventory Mapmaker (version 3.0). http://www.ncrs2.fs.fed.us/4801/fiadb/fim30/wcfim30.asp. USDA Forest Service, Southern Research Station, 2007.

Timber Growth and Removal

Timber volume increases as trees grow and as new trees are planted or regenerate naturally. Timber removals occur through harvesting, natural mortality, and conversion of forestland to other uses. Available timber inventories increase over time when more timber is grown than harvested.

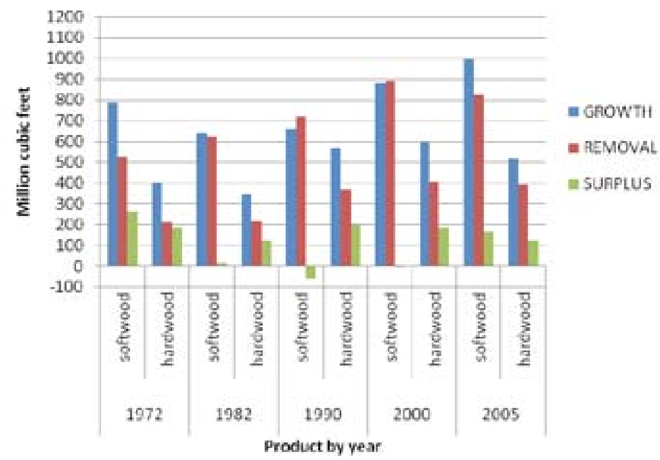

Figure 3. Summary of Alabama's hardwood and softwood timber growth, removals, and surplus in million cubic feet from 1972 to 2005

Source: Forest Inventory Mapmaker (version 3.0). http://www.ncrs2.fs.fed.us/4801/fiadb/fim30/wcfim30.asp. USDA Forest Service, Southern Research Station, 2007.

Since 1972, growth has exceeded harvest for hardwood timber (figure 3). For softwood timber, cubic foot volume removals either equaled or slightly exceeded growth for the years of 1982, 1990, and 2000. Increases in industrial use of softwood during this period caused this harvest increase. During 2005, growth exceeded harvest for both softwoods and hardwoods in Alabama.

Most recently, the majority of timber removals occurred in the Southeast and Southwest-North regions of the state (table 4). These two regions make up over half of the removals and almost 49 percent of the total growth from growing stock trees in the state. Hardwood growth levels were at 123.4 million cubic feet more than removals in Alabama for 2005. Softwood growth was also at a surplus of 167.3 million cubic feet during that same time. Although statewide removals for hardwood and softwood were at 76.1 percent and 83.2 percent of growth, respectively, several regions of the state had growth deficits. The North region had a 13 percent growth deficit in softwood timber. The West-Central region had a slight (1 percent) deficit in hardwood growth, and the Southwest-South region had growth deficits of almost 4 percent for softwoods and 13 percent for hardwoods during that same time period.

Current stocking levels have increased in recent years. Although timber harvest rates have remained at approximately the same level for the last 5 years, growth rates have increased by more than 10 percent since 2000. It is possible that increased awareness of the importance of sustainable forest practices and improved forest management techniques used by forest landowners have aided this increase and the sustainable management of Alabama's forests.

Table 4. Periodic Net Annual Growth and Removals of Growing Stock, Alabama, 2005

Region		Softwoods	Hardwoods
		Million Cubic Feet	
North	Growth	17.2	85.7
	Removal	19.7	48.7
North Central	Growth	149.9	99.2
	Removal	111.9	48.3
West Central	Growth	157.1	76.9
	Removal	140.9	77.9
Southeast	Growth	312.6	129.4
	Removal	210.6	94.4
Southwest-North	Growth	216.0	80.2
	Removal	224.4	92.5
Southwest-South	Growth	141.6	45.8
	Removal	119.7	31.8
STATE TOTALS	Growth	994.5	517.1
	Removal	827.2	393.7
SURPLUS		167.3	123.4
REMOVALS AS PERCENT OF NET GROWTH		83.2	76.1

Source: Forest Inventory Mapmaker (version 3.0). http://www.ncrs2.fs.fed.us/4801/fiadb/fim30/wcfim30.asp. USDA Forest Service, Southern Research Station, 2007.

Employment and Payrolls

Activities associated with growing, harvesting, processing, and marketing timber products provide jobs to many Alabamians. Total employment in timber-based manufacturing jobs in Alabama was 34,656 in 2002 (table 5). At that time, approximately 12 percent of all manufacturing employment in Alabama was in wood-based facilities, or almost one out of every eight jobs in Alabama was wood-products-related. From 1972 to 1997, total employment numbers for forest-based industries showed only small deceases from period to period. In 2002, however, there was a 24 percent decline in total employment from the previous period, with the majority of the jobs lost in the pulp and paper and manufactured home sectors. This reduction in employment may be accounted for in the overall decline in number of wood products facilities in the state, from 588 facilities in 1997 to 539 in 2002 (an 8.4 percent decrease).

Table 5. Estimated Employment in Timber-Based Economic Activities, Alabama, Selected Years

	1997	2002
Forest management	*	*
Harvesting	*	*
Primary manufacturing		
Lumber and plywood	10,806	9,869
Pulp and paper	14,788	9,907
Secondary manufacturing		
Millwork	4,457	4,642
Wood containers and pallets	1,216	1,045
Manufactured homes/ prefab. wood buildings	8,496	4,327
Misc. wood products	974	858
Paperboard containers and Boxes	4,303	3,670
Misc. paper products	451	338
STATE TOTALS	45,491	34,656

*Data not available

Source: Census of Manufacturers. U.S. Department of Commerce, Washington DC, 1997 and 2002.

Table 6. Estimated Payrolls in Timber-Based Economic Activities, Alabama, Selected Years

	1997	2002
	Million Dollars	
Forest management	*	*
Harvesting	*	*
Primary manufacturing		
Lumber and plywood	287.4	313.4
Pulp and paper	846.9	614.3
Secondary manufacturing		
Millwork	94.5	111.2
Wood containers and pallets	20.2	23.0
Manufactured homes/ Prefab. wood buildings	200.2	113.1
Misc. wood products	23.2	20.6
Paperboard containers and Boxes	119.6	127.2
Misc. paper products	12.1	9.4
STATE TOTALS	1,604.1	1,332.2

*Data not available

Source: Census of Manufacturers. U.S. Department of Commerce, Washington DC, 1997 and 2002.

Table 7. Estimated Value of Shipments at Various Stages of Processing, Alabama, Selected Years

	1997	2002
	Million Dollars	
Forest management	*	*
Harvesting	*	*
Primary manufacturing		
Lumber and plywood	2,490.2	2,184.0
Pulp and paper	5,489.0	4,866.8
Secondary manufacturing		
Millwork	649.9	670.1
Wood containers and pallets	94.1	107.9
Manufactured homes/ prefab. wood buildings	1,043.4	545.8
Misc. wood products	104.2	109.0
Paperboard containers and Boxes	798.7	914.0
Misc. paper products	98.9	122.3
STATE TOTALS	10,664.2	9,519.9

*Data not available

Source: Census of Manufacturers. U.S. Department of Commerce, Washington DC, 1997 and 2002.

Payroll for wood products and pulp and paper manufacturing in the state during 2002 was approximately $1.3 billion, down 18 percent from $1.6 billion in 1997 (table 6). Until this downturn in 2002, payrolls in timber-related industries had steadily increased since 1972. Recently, wages and salaries have been dominated by the pulp and paper sector, which accounted for 46 percent of all wages earned in the sector.

Value of Shipments

Value of shipments is the total value of all materials produced by the forest products industry, whether they are purchased in the state or shipped out of state. Forestry and the production of forest products continue to be important to the state's economy. In 2002, the U.S. Census Bureau estimated value of shipments for all manufacturing in the state was almost $66.7 billion. The value of shipments for forest products in 2002 totaled $9.5 billion, down just over 10 percent from 5 years prior (table 7). The pulp and paper sector continued to make up the majority of value produced at 62 percent or almost $4.9 billion. In 2002, Alabama's total value of shipments for paper manufacturing ranked 5th in the state at $5.9 billion, while total value of shipments for solid wood products in Alabama ranked 7th at $3.6 billion.

Forest Recreation

There is more to Alabama's forests than just lumber and paper products. In addition to the manufacturing sector, Alabama's forest also contributes to the economy through outdoor recreation. In 2001, Alabama was ranked 5th in the country with almost $800 million in hunting-related retail sales. Other important economic benefits of the state's forests are fishing, hiking, camping, and other outdoor activities enjoyed by recreationists. These benefits from Alabama forests are not easily quantified but are of increasing importance to the state's economy. Additional research is currently underway by scientists at Auburn University's School of Forestry and Wildlife Sciences to develop comprehensive estimates of the value of these contributions to Alabama's economy.

Forest Products Compared With Other Manufacturers

Primary manufacturing in Alabama is made up of five main industries: forest products, transportation equipment, food, chemicals, and primary metals. Altogether, these five industries made up over 56 percent of the state's manufacturing income in 2002. They also accounted for almost one-quarter of Alabama's payroll and 46 percent of Alabama's employment. The forest products industry had the largest annual payroll of the five primary industries in 2002 and was second in the state for total number of paid employees (tables 8 and 9). Forest products were Alabama's largest primary manufacturing industry, as measured by value of shipments in 2002 (table 10).

Table 8. Annual Payrolls for Alabama's Leading Primary Manufacturing Industries, Selected Years

Industry	1997	2002	Percent Change
	Million Dollars		
FOREST PRODUCTS	1,592.0	1,322.7	-16.6
Transportation equipment mfg.	1,071.1	1,310.2	21.3
Food mfg.	673.9	875.1	29.4
Primary metals	887.5	774.7	-13.5
Chemicals and allied products	690.6	671.9	-4.1
All manufacturing*	10,187.8	9,744.3	-4.4

*Includes primary and secondary manufacturing.

Source: Census of Manufacturers. U.S. Department of Commerce, Washington DC, 1997 and 2002.

Table 9. Number of Paid Employees for Alabama's Leading Primary Manufacturing Industries, Selected Years

Industry	1997	2002	Percent Change
Food mfg.	34,935	36,481	3.9
FOREST PRODUCTS	45,040	34,513	-23.4
Transportation equipment mfg.	26,521	29,156	8.9
Primary metals	23,728	17,387	-27.6
Chemicals and allied products	15,486	14,303	-10.0
All manufacturing*	352,618	284,127	-19.5

*Includes primary and secondary manufacturing

Source: Census of Manufacturers. U.S. Department of Commerce, Washington DC, 1997 and 2002.

Table 10. Value of Shipments for Alabama's Leading Primary Manufacturing Industries, Selected Years

Industry	1997	2002	Percent Change
	Million Dollars		
FOREST PRODUCTS	10,669.5	9,397.5	-11.8
Transportation equipment mfg.	4,961.2	9,262.6	84.2
Food mfg.	6,124.3	7,150.6	15.7
Chemicals and allied products	7,191.2	6,796.1	-6.7
Primary metals	6,637.9	5,033.6	-25.2
All manufacturing*	67,970.1	66,686.2	-2.7

*Includes primary and secondary manufacturing

Source: Census of Manufacturers. U.S. Department of Commerce, Washington DC, 1997 and 2002.

Summary

Forestry is vital to Alabama's economy. Growing, processing, and manufacturing wood contribute millions of dollars each year. Like other investments, the markets of timber and wood products cycle in response to changes in the marketplace. As the forest products industry adjusts to changes in the economic climate, Alabama's timber industry will continue to change with it. With prudent management, Alabama's forests will grow and flourish, and the use of products they provide will persist in both traditional and emerging markets.

Forestry Highlights

- The forest products industry is Alabama's leading primary manufacturing industry.
- Sixty-seven percent of the total land area in Alabama is forested.
- Almost 85 percent of Alabama forestland belongs to nonindustrial owners or governmental agencies.
- In 2005:
    - Total growing stock: 25.1 billion cubic feet
    - Growth: 1.5 billion cubic feet
    - Removals: 1.2 billion cubic feet
    - Net increases in inventory: 290.7 million cubic feet
- Harvested timber value:
    - In the woods: $808 million
    - At the first delivery point: $1,392 million
- In 2002, 34,656 full-time jobs were attributed to timber-based economic activity.
- In 2002, the forest products industry had the largest annual payroll of Alabama's five primary industries at $1.3 billion.
- In 2002, the value of shipments for forest products was almost $9.4 billion.
- In 2001, Alabama ranked 5th in the country with almost $800 million in hunting-related retail sales.

Resources

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Rebecca J. Barlow, *Extension Specialist*, Assistant Professor, School of Forestry and Wildlife Sciences, Auburn University

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