Economic Benefits of the Forestry Industry in Georgia: 2003

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Georgia Forestry Commission

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Executive Summary

Georgia's forestry industry has many components, which interact with all other sectors of the economy in complex ways. The purpose of this analysis is to: (1) quantify the level of economic activity conducted by the components of the forestry industry, (2) estimate economic activity supported in all Georgia sectors by the industry's activities, (3) compare the level activity in the forestry industry with other industries, and (4) assess the degree of forestry dependence of Georgia's counties.

The forestry industry components, and the level of economic activity represented by them, are shown in Table E-1 for 2003. Economic activity is measured by output (similar to sales revenue), employment, and income (defined as wages and salaries including benefits plus proprietor income). These measures are traditionally used in this type of analysis.

Table E-1 shows the forestry industry employed 65,706 in all industry sectors combined, paid an annual income of more than $3.0 billion, and had estimated total sales revenue exceeding $12.7 billion.

The activities in the sectors shown in Table E-1 bring dollars into the state, which recirculate in a process called the "multiplier effect." The recirculation touches all major industry sectors as goods and services are bought and sold to meet increased demands by businesses and households resulting from the new resources brought into the state by the forestry industry. The result of the multiplier effect, given by total impacts (which includes the direct impacts), is also measured by output, employment, and income (Table E-2).

Economic activity, including the multiplier effect, supported by the forestry industry in Georgia is almost $20.2 billion. This activity employs 136,022 people whose compensation is over $5.6 billion.

Another way to examine the forestry industry in Georgia is to compare it with other manufacturing sectors. Table E-3 lists the income and employment totals for each major industry sector sorted by total income for 2003. These data show that forestry ranks second in total income generated, and third in total employment. Food processing ranks first in income and second in employment, textiles (dominated by carpet) ranks first in employment and second in income. Forestry ranks third in both employment and income, but is very close to second-ranked textiles in income, reflecting forestry's relatively higher average wages.

Of particular importance to Georgia's state government is how the forestry industry affects its annual budget. This is investigated by estimating the revenues associated with the

forestry industry's economic activity and subtracting the costs associated with providing state services to Georgia's households and companies. Revenues include individual and corporate income tax, sales and use taxes, highway taxes, fees, and miscellaneous revenues. Costs estimated include education, public health, safety and welfare costs, highways, administration, and miscellaneous costs. Table E-4 provides these estimates for both direct and total impacts. The forestry industry generates an estimated $514 million per year in revenues for the state budget. When the costs of providing services to the employees (such as educating their children) of the forestry industry, and the economic activity supported by the forestry industry, are deducted from these revenues, the net annual fiscal benefit from the forestry industry is almost $147 million per year.

Forestry Dependent Communities

The economies of Georgia's counties are all dependent upon their ability to bring resources into their areas. Manufacturing is the predominant means for securing these resources in rural Georgia, and forestry is the main industry of many. Figure 1 depicts the degree of economic dependence on forestry, as measured by its proportion of total manufacturing. This is not a perfect measure, because there are other possible sources of economic-base activity, such as tourism (in Chatham County, for example) or service economy-related activities, such as Total Systems in Muscogee County. For most counties, however, this barometer of economic dependence is probably accurate.

There is no clear delineation of where dependence ends and non-dependence begins. The approach was to provide reasonable categories. Communities labeled "crucially dependent" have between 75 percent and 100 percent of their manufacturing industries classified as forestry-related. If the percentage is less than 75 percent but greater than 50 percent, the communities are labeled very dependent. Moderately dependent communities have between 25 percent and 50 percent of their manufacturing related to forestry, somewhat dependent communities have between 10 per cent and 25 percent, and all others (not dependent) have 10 percent or less. These definitions are implemented in Figure E-1.

Table E-1
Georgia Forestry Industry Economic Activity: 2003

Sector	Output	Employment	Income
Logging Camps and Logging Contractors	$663,716,800	5,203	$170,096,992
Forest Products (Greenhouses & Nurseries)	$528,249,472	656	$34,737,616
Sawmills	$924,207,936	5,062	$194,173,616
Wood Preservation	$234,413,456	727	$36,030,180
Reconstituted Wood Products	$265,617,168	1,061	$55,412,172
Veneer and Plywood	$352,818,528	2,182	$108,709,800
Engineered Wood and Trusses	$300,505,088	2,505	$91,763,840
Wood Windows and Doors	$396,587,968	2,810	$90,458,888
Cut Stock, Resawn Lumber, and Planing	$113,434,928	446	$12,764,491
Other Millwork Including Flooring	$170,863,168	2,345	$81,910,952
Containers	$177,793,232	2,716	$76,041,496
Mobile Homes	$388,694,752	3,311	$98,932,896
Prefabricated Wood Buildings	$47,867,884	425	$14,944,538
Miscellaneous Wood Products	$67,743,904	596	$15,544,657
Pulp Mills	$554,411,840	1,268	$103,740,360
Paper Mills, Except Building Paper	$3,506,030,336	8,391	$660,770,048
Paperboard Containers and Boxes	$1,628,849,408	7,404	$398,097,408
Surface Coated Paperboard	$8,427,997	28	$945,978
Coated and Laminated Packaging Materials	$438,322,016	1,917	$103,609,944
Paper Bags	$82,276,760	698	$23,168,014
Die-Cut Paper Office Supplies	$85,771,488	443	$17,699,360
Envelopes	$105,671,432	627	$39,565,956
Stationery	$47,898,440	160	$10,696,650
Sanitary Paper Products	$451,541,888	2,257	$156,445,552
All Other Converted Paper Products	$70,073,200	348	$13,799,963
Woodworking Machinery	$19,401,454	187	$10,643,428
Paper Industries Machinery	$16,380,463	97	$6,802,145
Wood Kitchen Cabinets	$299,037,792	4,299	$132,519,816
Upholstered Household Furniture	$103,235,288	1,204	$36,357,852
Non-Upholstered Household Furniture	$151,948,432	1,717	$44,038,672
Institutional Furniture	$117,713,704	960	$26,571,048
Other Household and Institutional Furniture	$23,325,054	353	$7,198,561
Office Furniture	$65,560,248	641	$27,236,142
Custom Architectural Woodwork and Millwork	$73,661,984	444	$20,295,870
Showcase, Partition, Shelving, and Locker Manufacturing	$188,046,576	2,140	$82,846,336
Burial Caskets and Vaults	$9,209,900	78	$2,678,390
Total	$12,679,309,984	65,706	$3,007,249,626

Source: Georgia Department of Labor (ES202) and Georgia Tech's Economic Development Institute

Table 3-2
Total Benefits by Major Industry Sector

Sector	Output	Employment	Compensation
Agriculture	$1,360,602,624	10,631	$293,088,928
Mining	$440,894,336	1,538	$110,110,824
Construction	$4,043,117	6	$325,294
Manufacturing	$15,696,871,424	91,820	$4,163,787,008
TCPU*	$385,775,520	3,596	$187,341,440
Trade*	$367,677,952	4,714	$210,949,728
FIRE*	$130,927,760	2,448	$65,357,040
Services	$1,812,582,784	21,268	$569,531,712
Total	$20,199,375,517	136,022	$5,600,491,974

Source: Georgia Tech's Economic Development Institute
*TCPU stands for Transportation, Communications, and Public Utilities; Trade represents all retail and wholesale trade activities, and FIRE stands for Finance, Insurance and Real Estate

Table E-3
Comparison of Georgia Industries

Sector	Employment	Payroll
Food Processing	72,659	$2,696,173,701
Textiles	77,593	$2,308,892,621
Forestry Industry	65,706	$2,241,929,734
Transportation Equipment	43,821	$2,144,050,645
Chemicals	22,462	$1,144,543,886
Machinery	23,550	$905,308,291
Computers and Electronic Products	14,939	$838,923,851
Printing	21,254	$831,154,795
Apparel	9,594	$232,474,697

Source: Georgia Tech's Economic Development Institute

Table E-4
Fiscal Impact Analysis

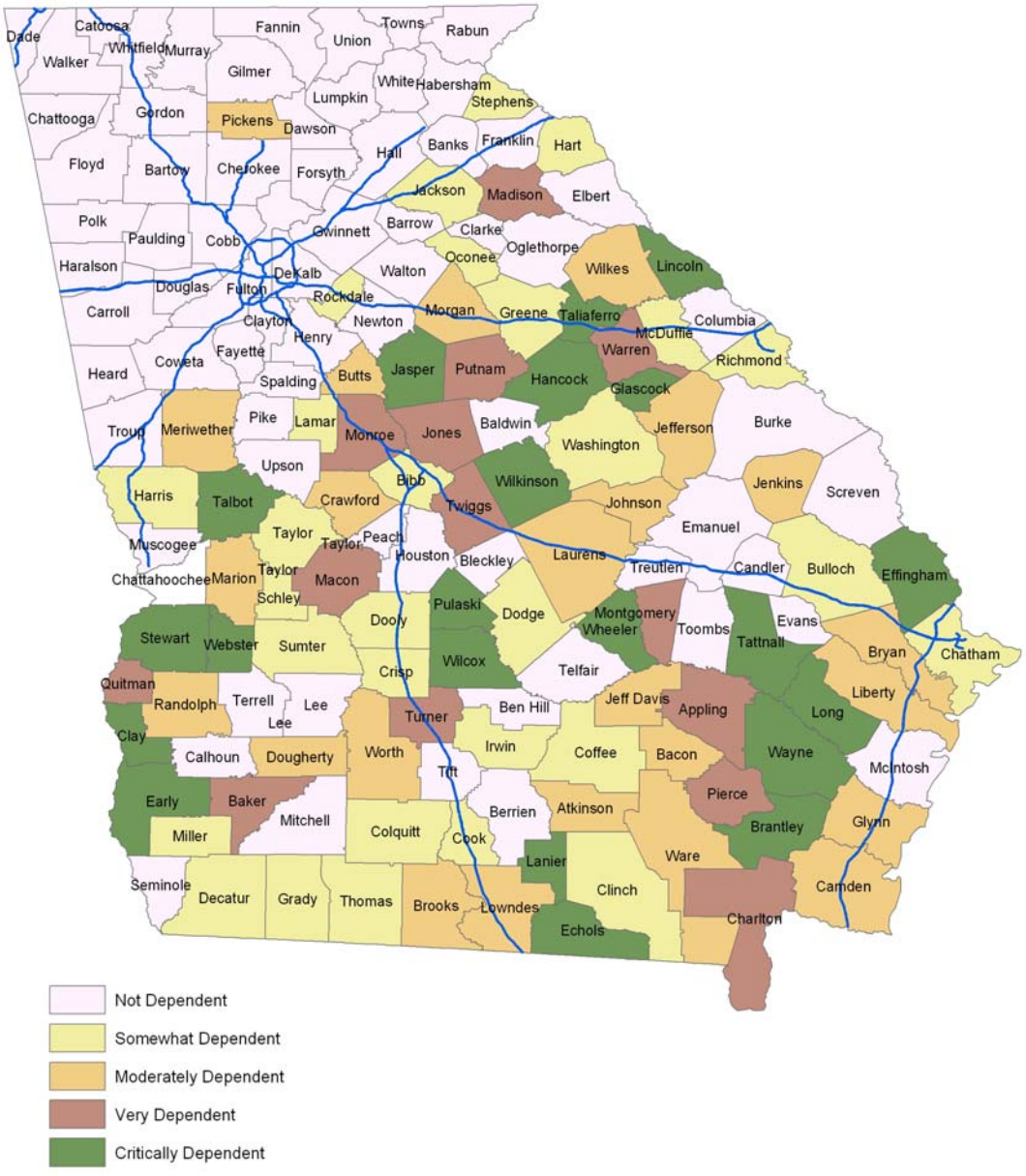
Annual State Government Revenues	$ 514,089,031
Annual State Government Costs	$ 367,579,485
Net Annual Revenues	$ 146,509,546

Source: Georgia Tech's Economic Development Institute

Figure E-1

Forestry-Dependent

Communities



Section 1
Introduction

Georgia's forestry industry contains many components and supports a significant proportion of the state's economic activity. This analysis quantifies that activity in terms of economic output, employment, and household income where economic output is defined as business revenues and household income is defined as wages, salaries (including benefits), and proprietor income. Additional factors considered include how the manufacturing components in the forestry industry compare to other manufacturing sectors, and how the industry affects state government costs and revenues.

The first step in this process is to define the limits of what constitutes the "forestry industry." This is not as simple a task as it may appear because the borders of one industry overlap those of other industries. How this was done and its results appear in Section 2, which also contains estimates of how much economic activity is occurring in each component of the forestry industry.

After the industry was defined and activities quantified, the total economic activity supported by the forestry industry was estimated. Total activity is generally referred to as the "multiplier effect." This effect occurs whenever dollars are brought into the state's economy and recirculated before leaking out. Section 3 explains the methodology used to estimate total economic activity and provides perspective on how important these activities are in the overall Georgia economy.

Section 4 examines how important the forestry components are to the existing industry base in each of Georgia's counties and divides counties into four categories according to their degree of dependence on forestry.

Section 2
Definition of the Forestry Industry in Georgia

The forestry industry in Georgia has many diverse components. A general definition would include all service and manufacturing activity related to the growth, harvesting, and use of forest materials that would not exist in Georgia without the presence of extensive forests or forest industries. For example, the papermaking industry would be a part of the forestry industry definition, but retail sales of that paper would not. States without commercial forests still sell paper within their borders.

Therefore, the forestry industry definition used in this analysis includes these broad sectors: forestry, logging, wood products (such as dimension lumber), paper products, manufactured housing, furniture, other miscellaneous wood products, and woodworking and papermaking machinery. The coding system follows the North American Industrial Classification System (NAICS) that replaced the Standard Industrial Classification (SIC) system in 1997. The NAICS codes and descriptions comprising the detailed definition appear in Table 2-1.

The organization of the industries on this list resembles the SIC system in that the number of digits of the NAICS codes increases as the level of detail increases. The highest level of detail practicable is the six-digit level, which roughly equals the four-digit level in the older SIC system. In some cases, however, the six-digit industry is the same as the five-digit industry, so these duplications are not presented in Table 2-1. For example, industry 11311 (timber tract operations) does not break down into smaller components, so the six-digit industry (which would be 113110) is omitted because it's redundant.

In some cases, the higher-level NAICS industries contain components that are not a part of the forestry industry. For example, metal furniture is included in NAICS 3371, but is not included at the six-digit level. Each component containing only forestry-related industries is indicated by italicized text in the table. Non-forestry-related components have been eliminated.

Table 2-1
Forestry Industry Definition Components: NAICS

NAICS	Description
113	Forestry and Logging
1131	Timber Tract Operations
11311	Timber Tract Operations
1132	Forest Nurseries and Gathering of Forest Products
11321	Forest Nurseries and Gathering of Forest Products
1133	Logging
11331	Logging
321	Wood Product Manufacturing
3211	Sawmills and Wood Preservation
32111	Sawmills and Wood Preservation
321113	Sawmills
321114	Wood Preservation
3212	Veneer, Plywood, and Engineered Wood Product Manufacturing
32121	Veneer, Plywood, and Engineered Wood Product Manufacturing
321211	Hardwood Veneer and Plywood Manufacturing
321212	Softwood Veneer and Plywood Manufacturing
321213	Engineered Wood Member (except Truss) Manufacturing
321214	Truss Manufacturing
321219	Reconstituted Wood Product Manufacturing
3219	Other Wood Product Manufacturing
32191	Millwork
321911	Wood Window and Door Manufacturing
321912	Cut Stock, Resawing Lumber, and Planing
321918	Other Millwork (including Flooring)
32192	Wood Container and Pallet Manufacturing
32199	All Other Wood Product Manufacturing
321991	Mobile Homes
321992	Prefabricated Wood Building Manufacturing
321999	All Other Miscellaneous Wood Product Manufacturing
322	Paper Manufacturing
3221	Pulp, Paper, and Paperboard Mills
32211	Pulp Mills
32212	Paper Mills
322121	Paper (except Newsprint) Mills
322122	Newsprint Mills
32213	Paperboard Mills
3222	Converted Paper Product Manufacturing
32221	Paperboard Container Manufacturing
322211	Corrugated and Solid Fiber Box Manufacturing
322212	Folding Paperboard Box Manufacturing
322213	Setup Paperboard Box Manufacturing
322214	Fiber Can, Tube, Drum, and Similar Products Manufacturing
322215	Non-folding Sanitary Food Container Manufacturing
32222	Paper Bag and Coated and Treated Paper Manufacturing

322221	*Coated and Laminated Packaging Paper and Plastics Film Manufacturing*
322222	*Coated and Laminated Paper Manufacturing*
322223	*Plastics, Foil, and Coated Paper Bag Manufacturing*
322224	*Uncoated Paper and Multiwall Bag Manufacturing*
322225	*Laminated with Foil for Flexible Packaging*
322226	*Surface-Coated Paperboard Manufacturing*
32223	*Stationery Product Manufacturing*
322231	*Die-Cut Paper and Paperboard Office Supplies Manufacturing*
322232	*Envelope Manufacturing*
322233	*Stationery, Tablet, and Related Product Manufacturing*
32229	*Other Converted Paper Product Manufacturing*
322291	*Sanitary Paper Product Manufacturing*
322299	*All Other Converted Paper Product Manufacturing*
33321	*Sawmill and Woodworking Machinery Manufacturing*
333291	*Paper Industry Machinery Manufacturing*
337	Furniture & Related Product Manufacturing
3371	Household and Institutional Furniture and Kitchen Cabinet Manufacturing
33711	*Wood Kitchen Cabinet and Countertop Manufacturing*
33712	Household and Institutional Furniture Making
337121	*Upholstered Household Furniture Manufacturing*
337122	*Non-Upholstered Wood Household Furniture Manufacturing*
337127	*Institutional Furniture Manufacturing*
337129	*Wood Television, Radio, and Sewing Machine Cabinet Manufacturing*
337211	*Wood Office Furniture Manufacturing*
337212	*Custom Architectural Woodwork and Millwork Manufacturing*
337215	*Showcase, Partition, Shelving, and Locker Manufacturing*
333	Machinery Manufacturing
3332	Industrial Machinery Manufacturing
33321	*Sawmill and Woodworking Machinery Manufacturing*
33329	Other Industrial Machinery Manufacturing
333291	*Paper Industry Machinery Manufacturing*
339	Miscellaneous Manufacturing
3399	Other Miscellaneous Manufacturing
33999	All Other Miscellaneous Manufacturing
339995	*Burial Casket Manufacturing*

Source: North American Industrial Classification System, and Georgia Tech's Economic Development Institute

The level of economic activity in each forestry industry component is measured by output, employment, and income. Measures for the 2003 calendar year appear in Table 2-2. This table shows that total employment in all of the forestry industry sectors is 65,706 and these jobs earned annual total wages and salaries (including benefits) of over $3.0 billion from estimated total sales revenue of almost $12.7 billion.

Within the industry, Georgia companies have representatives in each of the sectors and subsectors down to the NAICS six-digit level. The highest employment is seen in paper mills with 8,391 workers followed by paperboard containers and boxes with 7,404. Many segments have employment exceeding 5,000, including sawmills and logging. The greatest payrolls come from paper mills, and paperboard containers and boxes. The largest outputs are produced by paper mills (about $3.2 billion) and paperboard containers and boxes, (about $1.6 billion).

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Institutional Furniture	$117,713,704	960	$26,571,048
Other Household and Institutional Furniture	$23,325,054	353	$7,198,561
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Showcase, Partition, Shelving, and Locker Manufacturing	$188,046,576	2,140	$82,846,336
Burial Caskets and Vaults	$9,209,900	78	$2,678,390
Total	$12,679,309,984	65,706	$3,007,249,626

Section 3
Economic Benefits

Methodology

Economic impact analysis has used basically the same methods for over 40 years. The tools, although greatly improved in quality and ease of use, are also similar to those in long-time use.

The conceptual basis for estimating economic benefits of an industry is that resources brought into Georgia's economy by the industry raise the level of economic activity. This additional economic activity, commonly called the multiplier effect, supports increased employment, income, and business revenues. These increases are estimated from an input-output model (I/O).

The purpose of an I/O model is to estimate the flows of resources among various economic sectors by using the "recipes" followed by producers. These recipes provide the type and amount of goods and services purchased during production, which are produced by other firms. For example, a pulp mill purchases wood from a logger. The logger, in turn, purchases equipment and fuel from firms, that, in turn, purchase their raw materials from still other firms. Combined with estimates of what percentages of these items are supplied by Georgia firms, the recipes can be used to estimate how much of each item is purchased from Georgia firms and how much is purchased from outside Georgia.

Purchases from sources outside the Georgia economy are known as "leakage," which puts the brakes on the multiplier effect; the higher the leakage, the lower the multiplier effect.

The I/O model used in this analysis is called IMPLAN, devised by the Minnesota IMPLAN Group. It is a nationally recognized model that uses Georgia data to tailor its estimates to the state economy. Still, the model must be modified somewhat to account for differences in specific industry sectors revealed by more current data. For example, the wage and salary data used in this analysis is from 2003, whereas the wage and salary data available to IMPLAN is from 2001.

One area of uncertainty that persists, however, is the level of benefits provided to workers in each of the forestry industry sectors. The available wage and salary information does not include benefits, but the I/O model bases its analysis on wages and salaries that include benefits. An average of 25 percent was assumed for this analysis, based on the latest available U.S. Bureau of Labor Statistics compensation cost data for all civilian employment.

The analytical process includes three steps after the industry sectors are defined, as described in the previous section. The first step is to quantify employment, income, and output associated with each of the defined sectors. Several data sources are used to accomplish this.

The best source for employment and wages is the employment security data collected and maintained by the Georgia Department of Labor. Commonly called ES202 data, it has the advantage of being current, allowing an estimate of the economic benefits occurring in 2003.

The second task is to divide the forestry industry output into two categories, (1) output that is sold to another Georgia firm and (2) output sold outside the state. Another way to look at this is to recall that the multiplier effect starts from dollars brought into the Georgia economy. Output not sold to another Georgia firm is, by definition, bringing in resources from outside the Georgia economy, and it is these "exports" that fuel the multiplier effect. Forestry industry output used as an input to another Georgia forestry-industry firm is already accounted for in the multiplier effect; counting it again would result in double-counting and would imply a level of production from the input-supplying industry higher than actually observed. For example, if the multiplier effect is calculated for the paper industry, it will include some of the activities of Georgia logging operations. If the entire output from logging was then added to the multiplier effect for paper, it would double-count the logging output that went to the paper industry. The I/O model is used iteratively for these estimations, with the resulting estimates called "direct impacts." Direct impacts are measures of the output from, in this case, forestry industries that are exported to entities outside Georgia. These are considered exports even if they only go to Alabama.

The third step is to use the I/O model to estimate total impacts, which are divided into three components. The first is the *direct* impacts (the value of resources brought into the state); the second is *indirect* impacts (impacts from recirculation of resources resulting from forestry industry purchases from other industries; and the third is *induced* impacts, which result from activities in the household sector. Adding direct, indirect, and induced impacts yields total benefits.

Three measures of economic benefits are provided. The first, output, is a measure of how much each industry or sector produced in 2003 – roughly equivalent to a measure of sales revenue. The second measure is income, including all household income and employee benefits. The third measure is employment provided by the firms in each forestry-related industry.

Results

Table 3-1 provides estimates of direct impacts for each of the forestry industry sectors contained in the industry's definition. These differ from the level of economic activity shown in Table 2-3 because Table 3-1 eliminates production consumed by another sector. This eliminates the double counting of production in the multiplier effect of the consuming industry sector. For example, Table 3-1 does not contain much output from the logging industry because most of it seems to be consumed by the various Georgia wood-using industries such as paper and millwork. Logging operations are included primarily as part of the multiplier effect by these consuming industries, not as a direct impact separate from them.

Another way to interpret Table 3-1 is to consider the direct impacts to be estimates of the exports of forestry-related industries. This exporting (to anyone outside Georgia) brings resources into the state to support the increase in economic activity estimated by the multiplier effect.

The highest output is achieved by the "Paper Mills Except Building Paper" sector, which includes all paper (such as newsprint and Kraft paper) but does not include sanitary paper and products from pressed pulp such as paper plates and egg cartons. The greatest employment is also in the "Paper Mills Except Building Paper" sector, with 8,381 employees. This sector also has the highest payroll, with over $659 million in salaries, wages, and benefits. Together, the forestry industry exports over $11 billion with this activity supporting 56,245 jobs with a payroll of almost $2.7 billion.

Recirculation of dollars brought into Georgia's economy (as measured by the direct impacts) support a higher level of economic activity. This higher level is estimated by applying the IMPLAN input-output model to the direct impacts provided in Table 3-1. The results of this analysis are presented in Table 3-2. Because all industries in Georgia are affected by the forestry industry, Table 3-2 summarizes the benefits by aggregated industry codes (used in the input-output model), which are roughly equivalent to two-digit NAICS code.

Table 3-1
Direct Impacts by Forest Industry Sector
(Dollars)

Sector	Output	Employment	Income
Logging Camps and Logging Contractors	$66,588,536	522	$17,065,274
Forest Products (Greenhouses & Nurseries)	$521,807,392	648	$34,313,984
Sawmills	$459,913,056	2,519	$96,626,504
Wood Preservation	$229,576,880	712	$35,286,784
Reconstituted Wood Products	$216,549,328	865	$45,175,800
Veneer and Plywood	$287,655,424	1,779	$88,631,864
Engineered Wood and Trusses	$298,105,856	2,485	$91,031,200
Wood Windows and Doors	$385,720,608	2,733	$87,980,120
Cut Stock, Resawn Lumber, and Planing	$57,226,140	225	$6,439,486
Other Millwork Including Flooring	$166,710,000	2,288	$79,919,944
Containers	$169,479,632	2,589	$72,485,808
Mobile Homes	$388,694,752	3,311	$98,932,896
Prefabricated Wood Buildings	$47,755,256	424	$14,909,375
Pulp Mills	$552,662,912	1,264	$103,413,104
Paper Mills, Except Building Paper	$3,501,851,904	8,381	$659,982,592
Paperboard Containers and Boxes	$1,607,289,856	7,306	$392,828,160
Surface Coated Paperboard	$6,621,998	22	$743,269
Coated and Laminated Packaging Materials	$436,721,472	1,910	$103,231,608
Paper Bags	$81,098,008	688	$22,836,094
Die-Cut Paper Office Supplies	$85,771,488	443	$17,699,360
Envelopes	$105,671,432	627	$39,565,956
Stationery	$47,898,440	160	$10,696,650
Sanitary Paper Products	$451,141,760	2,255	$156,306,928
All Other Converted Paper Products	$69,871,840	347	$13,760,308
Woodworking Machinery	$19,297,704	186	$10,586,511
Paper Industries Machinery	$10,301,116	61	$4,277,638
Wood Kitchen Cabinets	$288,882,048	4,153	$128,019,256
Upholstered Household Furniture	$95,175,392	1,110	$33,519,284
Non-Upholstered Household Furniture	$149,028,048	1,684	$43,192,268
Institutional Furniture	$117,100,608	955	$26,432,656
Other Household and Institutional Furniture	$23,325,054	353	$7,198,561
Office Furniture	$65,355,692	639	$27,151,162
Custom Architectural Woodwork and Millwork	$72,500,648	437	$19,975,890
Showcase, Partition, Shelving, and Locker Manufacturing	$183,301,472	2,086	$80,755,824
Burial Caskets and Vaults	$9,209,900	78	$2,678,390
	$11,275,861,652	56,245	$2,673,650,506

The largest sector benefits are seen, not surprisingly, in the manufacturing sector, with some $16 billion in output, 91,820 employees, and about $4.1 billion in income. A distant second is held by services, with almost $1.8 billion in output, 21,268 employees, and almost $570 million in income. Together, the economic activity supported by Georgia's forestry industry totals almost $20.2 billion, involving employment of 136,022 people whose income exceeds $5.6 billion. This employment represents about 3.5 percent of total Georgia employment and 3.4 percent of household income when compared to 2003 ES202 totals.

Table 3-2
Total Benefits by Major Industry Sector

Sector	Output	Employment	Income
Agriculture	$1,360,602,624	10,631	$293,088,928
Mining	$440,894,336	1,538	$110,110,824
Construction	$4,043,117	6	$325,294
Manufacturing	$15,696,871,424	91,820	$4,163,787,008
Transportation, Communication, Utilities	$385,775,520	3,596	$187,341,440
Retail and Wholesale Trade	$367,677,952	4,714	$210,949,728
Finance, Insurance, Real Estate	$130,927,760	2,448	$65,357,040
Services	$1,812,582,784	21,268	$569,531,712
Total	$20,199,375,517	136,022	$5,600,491,974

Comparison of the Forestry Industry with Other Industry Sectors

It is difficult to appreciate the significance of the impacts generated by the forestry industry without some basis of comparison. This comparison is provided in Table 3-3, which shows that the forestry industry is the third largest industry sector in Georgia, behind food processing and textiles, and exceeding industries such as transportation equipment.

Table 3-3
Comparison of Georgia Industries

Sector	Employment	Payroll
Food Processing	72,659	$2,696,173,701
Textiles	77,593	$2,308,892,621
Apparel	9,594	$232,474,697
Printing	21,254	$831,154,795
Chemicals	22,462	$1,144,543,886
Machinery	23,550	$905,308,291
Computers and Electronic Products	14,939	$838,923,851
Transportation Equipment	43,821	$2,144,050,645
Forestry Industry	65,706	$2,241,929,734

Source: Georgia Department of Labor (ES202)

Section 4
Economic Dependence

What Is Economic Dependence?

Economies are interwoven in a complex web. In general, however, a local economy's economic health depends on the flow of resources into and out of it. Economic base theory calls those sectors within an economy that are responsible for bringing resources in "basic" or "traded" sectors. The resources that are brought in are then (at least partially) recirculated within the local economy to support the "non-basic" sectors. For example, a sawmill will generally sell its products to builders or lumber supply houses outside the local economy. The revenue it receives from these sales is then used to purchase logs from, perhaps, a local logging firm, and it also pays wages to its employees which are available to be spent in local restaurants, grocery stores, and the like. As the basic sector grows or declines, so does the non-basic sector.

Forestry industry components are very much part of Georgia's basic industry sector, with products sold worldwide. As such, it is one of the key sources of funds flowing into many local Georgia economies. Where the local economy has many sources of such flows, the growth or decline of any specific sector, such as forestry, may not have significant effects. However, in those communities where forestry is a large proportion of the local basic industry, all of economic support activities, such as retail, are likewise generally dependent.

Approach

There is no clear delineation between economic dependence and non-dependence, and there are many possible facets that can be examined to depict the spectrum that describes the degree of dependence. This analysis examines the proportion of the county-level basic economy, defined as manufacturing, that is attributable to forestry industries. In today's economy, manufacturing is only one of many possible components of the basic economy, but in rural areas in Georgia, it is almost always the most significant. The exceptions would be those counties that have either a significant tourism industry, or some other service-related industry, that operates like a basic industry. Chatham County, for example, has a significant basic tourism industry sector, and Muscogee County (with Total Systems) has a significant service-related basic sector.

With these caveats in mind, Figure 4-1 depicts the degree of forestry-dependent counties. Counties with between 75 percent and 100 percent of their manufacturing base are categorized as "critically dependent", and counties with between 50 percent and 75 percent are categorized as "very dependent". If a county has between 25 percent and 50 percent of its manufacturing base

in forestry industries, it is categorized as "moderately dependent." A lesser dependence (labeled "somewhat dependent") is used for counties with between 10 percent and 25 percent, and those counties with less than 10 percent are considered as "not dependent."

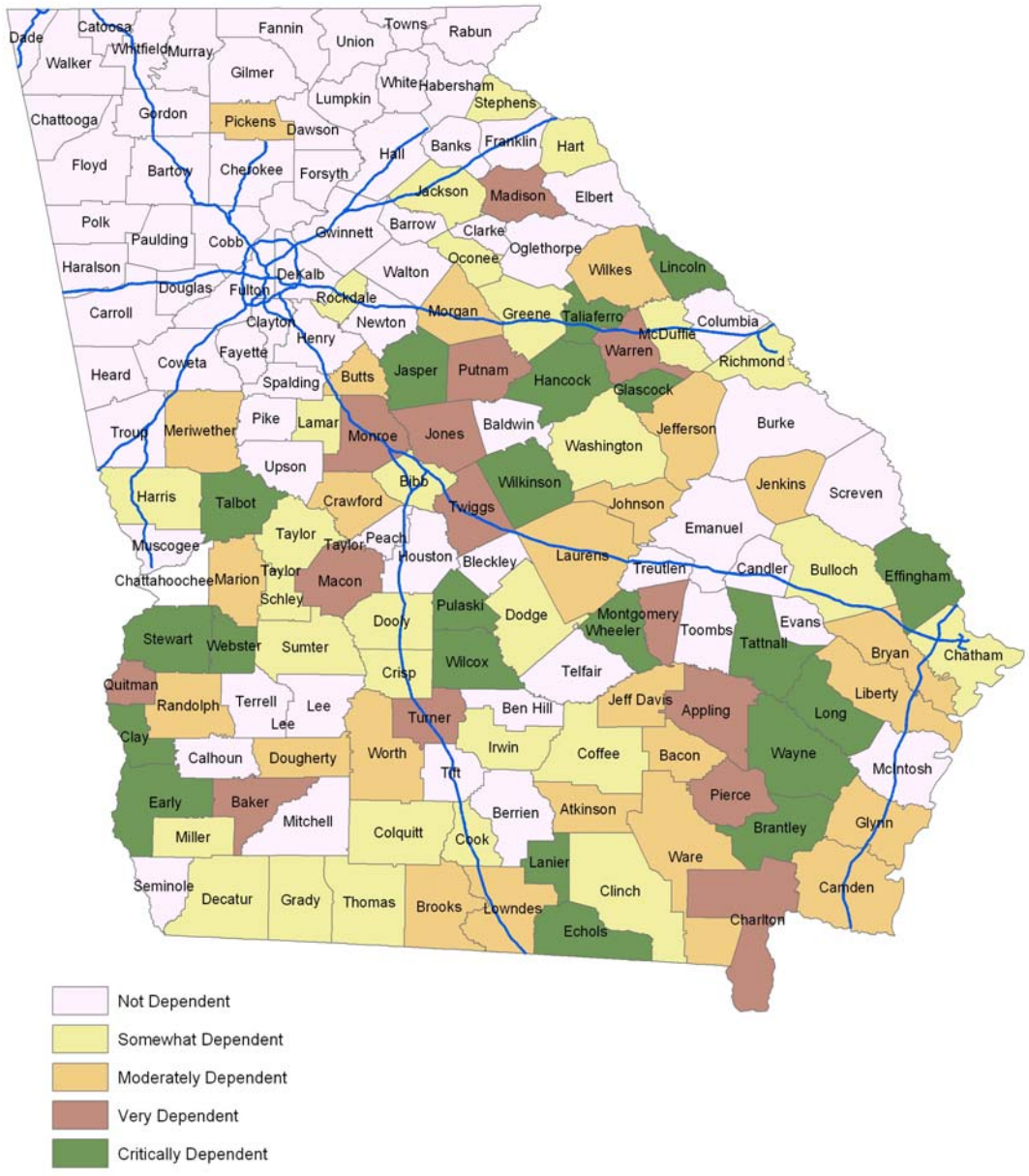
Applying these criteria to Georgia's counties results in a distribution of counties as depicted in Table 4-1. While most (100) counties are considered either not, or somewhat, dependent on forestry industries, the remaining 59, concentrated in south Georgia, owe significant proportions of their livelihood to forestry.

Table 4-1
Distribution of Georgia Counties by Level of Dependence

Category	Number
Critically Dependent	21
Very Dependent	18
Moderately Dependent	20
Somewhat Dependent	50
Not Dependent	50
Total	159

Source: Georgia Tech's Economic Development Institute

Figure 4-1
Forestry-Dependent Counties



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