

Economic Impacts of the Forest Industry in Florida, 2003

Executive Summary of Final Report to the Florida Forestry Association-

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Florida has over 16 million acres or 25 thousand square miles of forests, representing nearly half of the state's land area. Forests in Florida are managed to produce a variety of wood and fiber products, with about 650 million cubic feet of roundwood harvested annually. These forests also support outdoor recreational opportunities for residents and millions of visitors to the state, and provide important non-market environmental services such as biodiversity, hydrologic function, and mitigation of global climate change through sequestering atmospheric carbon.

A study was conducted to assess the economic impacts of the forest products industry in the state of Florida, in order to better understand its role and contribution to the regional economy. A mail survey was used to collect information on product sales, employment, regional trade, and types of products and services offered by forest industry firms. Major sectors of the industry surveyed were landowners, forest product manufacturing mills, and forestry service businesses such as loggers, management consultants, trucking, and forest tree nurseries. Mail surveys were supplemented by personal interviews with mill managers, and other secondary statistics. A total of 615 usable questionnaires were received, representing an overall response rate of 19 percent. Survey respondents reported total sales of \$2.54 billion (Bn) in 2003 and employment of 8,436 fulltime and part-time or seasonal employees (Table ES-1). Assuming the survey data were a representative sample of the industry, these results were extrapolated to estimate a total value of industry sales at \$7.78Bn, including \$6.37Bn by manufacturers, \$1.02Bn by service firms, and \$382 million (Mn) by landowners. Total employment in the industry was estimated at around 30 thousand jobs.

Table ES-1. Florida forest industry groups surveyed, response rates, and reported and estimated sales and employment in 2003

Survey Group	Number Firms Targeted	Number Respondents	Response Rate	Reported Sales (Million\$)	Reported Employment (full & part-time jobs)	Expanded Sales (Million\$)	Expanded Employment (jobs)
Landowners	2460	474	19.3%	73.7	729	382.4	3,781
Manufacturers	175	65	37.1%	2,366.3	6,807	6,370.9	18,327
Forestry Services	680	76	11.2%	114.4	901	1,023.8	8,057
Total	3,315	615	18.6%	2,554.4	8,436	7,777.0	30,164

Values were estimated for specific forest products and services. Among manufactured products, values in excess of \$100 million were obtained for pulp (\$2.18 Bn), paper/paperboard (\$1.78 Bn), preservative-treated wood (\$859 Mn), dimension lumber (\$388 Mn), plywood (\$365 Mn), wood chemicals (\$245Mn), chipped wood (\$185 Mn), and mulch/shavings (\$123 Mn). Revenues for forestry services included timber harvesting (\$615 Mn), timber trucking (\$113 Mn), forest thinning (\$107 Mn), tree trimming and removal (\$61 Mn), and site preparation (\$48 Mn). Values for forest products sold by landowners included pulpwood (\$80 Mn), pine straw (\$79 Mn), chip-and-saw logs (\$62 Mn), and sawtimber logs (\$37 Mn).

The forest products industry also produces a significant amount of electric power and heat energy to meet its energy needs for manufacturing processes, through utilization of residuals and byproducts, contributing to energy sustainability through reliance on locally renewable resources. The industry increasingly utilizes post-consumer recycled fiber sources for paper manufacturing, which reduces the dependence upon forests for virgin wood fiber.

Regionally in Florida, the value of all forest products and services produced was \$3.8Bn (49%) in the northeast, \$2.01Bn (26%) in the central, \$1.21Bn (16%) in the northwest, and \$695Mn (9%) in the south (Figure ES-1). Exports of forest products outside the state to domestic and international markets represented 50 percent of total industry sales, and within Florida, 23 percent of total sales were to the central region, 15 percent to the northeast, 8 percent to the south, and 4 percent to the northwest.

Total economic impacts of the forest products industry were evaluated using a regional input-output model developed with the *Implan* software system and associated databases for Florida counties (MIG, Inc). These models

represent the structure of an economy in terms of linkages between industry sectors, households and governments institutions. The model accounts for commodity production, employment, final demand, transfer payments, taxes, capital investment, and regional trade (imports and exports). Multipliers from the model enable estimation of the change in total regional economic activity resulting from output or employment of a particular sector that is attributable to business activity by input supplier industries (indirect effects) and employee household spending (induced effects). Values of total sales estimated for specific products and services were entered into *Implan* for 12 separate forest products industry sectors to calculate total impacts.

Total economic impacts of the Florida forest industry are indicated in Table ES-3. Total output or sales impacts of the forest products industry in Florida in 2003 were estimated at \$16.63 Bn, including \$8.84 Bn in the forestry and forest product sector and an additional \$7.70 Bn in other industry sectors. This was comprised of \$7.78 Bn in direct sales, plus \$3.09 Bn in indirect impacts associated with activity in supplier businesses, and \$5.67 Bn in activity due to spending by industry employees. Within the forest industry, output impacts were \$1.65 Bn in forestry and natural resources and \$7.19 Bn in forest product manufacturing. Total employment impacts were 133,475 jobs, with 48,930 in the forest sector

and 84,545 in other industry sectors. Total value added impacts were \$7.52 Bn, including labor income of \$4.92 Bn, other property-related income of \$2.02 Bn, and indirect business taxes paid to local, state and federal governments of \$581 Mn.

Fiscal impacts on total tax collections by governments were estimated at \$1.75 Bn, including sales taxes, property taxes, payroll taxes and personal and business income taxes. The value added impact indicates the net contribution of personal and business income to the regional economy. This value for the forest industry represents approximately 1.53 percent of the gross regional product of the Florida economy (\$490 Bn).

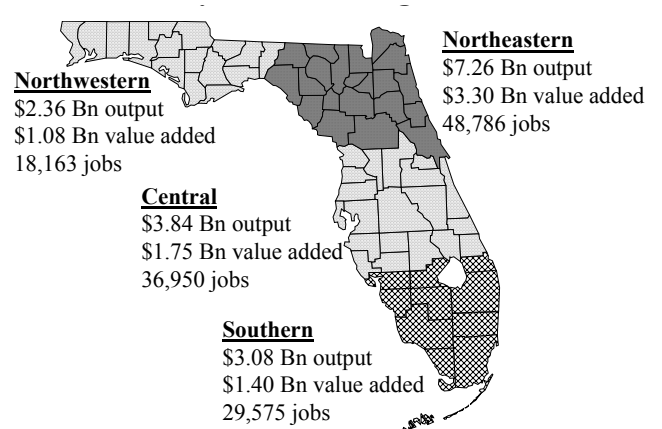


Figure ES-1. Economic impacts of the forest industry in Florida regions.

Table ES-3. Total economic impacts of the forest industry in Florida, by industry group and sector, 2003

Industry Sector	Output Impact (\$Mn)	Employment Impact (Jobs)	Value Added Impact (\$Mn)
Forestry & Forest Products	<u>8,835</u>	<u>48,930</u>	<u>2,709</u>
Forestry & Natural Resources	<u>1,646</u>	<u>24,834</u>	<u>835</u>
Logging	722	5,082	364
Forest nurseries and timber tracts	406	1,165	185
Agriculture and forestry support activities	449	17,534	244
Forest Products Manufacturing	<u>7,189</u>	<u>24,096</u>	<u>1,875</u>
Pulp mills	2,181	4,916	502
Paper and paperboard mills	1,781	4,197	594
Wood preservation	931	2,816	131
Sawmills	955	5,271	229
Veneer and plywood manufacturing	388	2,394	117
Other miscellaneous chemical product manuf.	255	828	65
Miscellaneous wood product manufacturing	86	706	28
Millwork- including flooring	10	125	5
Reconstituted wood product manufacturing	6	23	2
Other Industry Sectors	<u>7,699</u>	<u>84,545</u>	<u>4,814</u>
Total	16,534	133,475	7,523

Economic impacts were estimated for Florida counties and regions based on their share of total state economic activity in the forest products sector. Total economic impacts are indicated for four regions of the state in Figure ES-1. The top ten Florida counties in terms of output impacts were Taylor (\$1.94 Bn), Miami-Dade (\$1.89 Bn), Duval (\$1.71 Bn), Putnam (\$1.08 Bn), Escambia (\$1.05 Bn), Nassau (\$973 Mn), Polk (\$684 Mn), Orange (\$595 Mn), and Bay (\$502 Mn).

Recreation and tourism values associated with Florida forests were also evaluated in this report from secondary information sources. According to US Fish & Wildlife Service surveys, wildlife-related recreational activity, including hunting, fishing and wildlife viewing, accounted for total expenditures in Florida in 2001 estimated at \$6.05 Bn, including \$2.89 Bn for trip costs for fuel, lodging, meals, etc., and \$3.17 Bn for recreational equipment purchased (e.g. boats, guns), with \$1.20 Bn spent by Florida visitors. Of course, not all wildlife-related recreational activity is directly attributable to the forest resource, however, most of the hunting and wildlife watching takes place in forested ecosystems.

Tourism is the largest and most well known sector of the Florida economy, and forested landscapes provide environmental amenities that support this industry, particularly for the growing eco-tourism market. Visitor spending of around \$47 Bn in Florida in 2000 had an estimated output impact of \$117 Bn. Surveys indicate that over half of Florida visitors engage in some type of nature-based activity during their visit, and a study by the USDA-Forest Service indicated that 19 to 33 percent of total travel and tourism activity in the southern U.S. is attributable to outdoor recreation. Using the lower bound (19%) together with data on the total value of Florida tourism, it is estimated that outdoor recreation in the state had a total economic impact of \$22.3 Bn in output, \$14.72 Bn in value added, and 332 thousand jobs. Again, some share of this may be appropriately attributed specifically to forest ecosystems.

In addition to these commercial commodity and recreational use values associated with forests in Florida, there is an array of non-marketed environmental services that are important to recognize, although they may not be readily quantified. Some of the environmental services of forests include surface and ground water storage, purification of air and water, mitigation of droughts and floods, stabilization of climate and moderation of extreme weather events, generation and preservation of soils, detoxification and decomposition of wastes, cycling and movement of nutrients, control of agricultural pests, provision of wildlife habitat, and maintenance of biodiversity. An estimated 5.8 million tons of carbon are sequestered annually by Florida forests. Markets for this service for trading of pollution emission credits are being established (e.g. Chicago Climate Exchange). The avoided costs for pollution abatement may be conservatively estimated at a price of \$5 per ton C, which would indicate a total value of \$29 million annually for this environmental service.

Forests in Florida also provide numerous amenities or quality of life values. Published studies have shown that properties landscaped with trees and other attractive vegetation may add approximately 6 to 10 percent to the value of homes purchased. Thus, forests contribute to the large market in Florida for real estate development. Some additional non-market benefits to human communities from forests include support of rural life values, provision of character building opportunities, support of national identity/ideals, heritage, research and educational values. Finally, forests provide personal, psychic and aesthetic benefits such as job satisfaction, scenic views, therapeutic and physical health values, intrinsic existence values, religious and spiritual values.