

# **Economic Contributions of the Forest Industry and Forest-based Recreation in Florida in 2016**

*Sponsored Project Report to the Florida Forestry Association*

Alan W. Hodges, PhD, Extension Scientist

Christa D. Court, PhD, Assistant Scientist

Mohammad Rahmani, PhD, Economic Analyst

University of Florida-IFAS, Food and Resource Economics Department

Gainesville, Florida

December 19, 2017

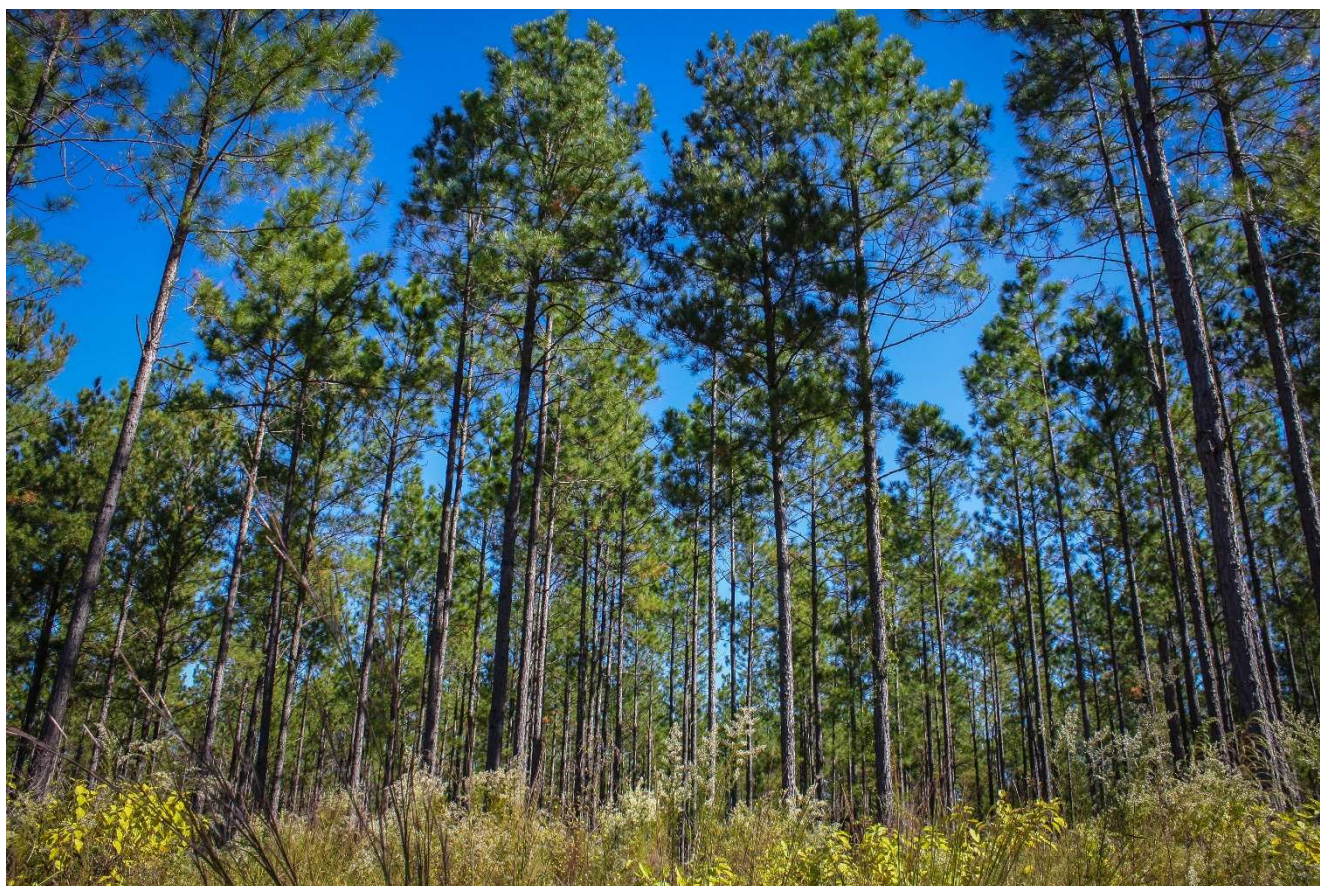


Photo credit: Florida Forestry Association

**UF | IFAS**  
UNIVERSITY of FLORIDA

**ECONOMIC IMPACT  
ANALYSIS PROGRAM**

# Table of Contents

Executive Summary .....	6
Introduction.....	10
Data.....	13
Florida Forests .....	13
Florida Forest Industry Establishments, Employment, and Exports.....	25
Forest Recreation .....	36
Methodology for Regional Economic Contribution Analysis .....	37
Economic Contribution Results for Industrial Forest Activity .....	45
State-Level Economic Contributions.....	45
Economic Contributions in Florida Regions and Counties.....	51
Community Dependence on the Forest Industry.....	61
Forestry Contribution Analyses in Other States .....	66
Comparisons to Other Agriculture Industries in Florida .....	70
Economic Contributions of Forest-Based Recreation in Florida.....	71
Ecosystem Service Values of Florida Forests.....	72
Literature and Information Sources Cited.....	75
Appendix A: Glossary of Economic Terms.....	81
Appendix B: Listing of Wood-Using Mills and Secondary Forest Product Manufacturers in Florida.....	83
Appendix C: Profile of Forest Industry Economic Contributions in Florida Counties.....	92

## List of Tables

Table 1. Area of forest land by forest type and stand origin, Florida, 2015 .....	15
Table 2. Aboveground biomass of live trees on forest land by ownership and land use in Florida, 2015.....	15
Table 3. Florida forest land area by ownership and land use, 2015 .....	17
Table 4. Summary of forestland tax parcels, acreage and value in Florida counties, 2015 .....	17
Table 5. Acreage owned by the largest twenty-five forest landowners in Florida, 2015.....	19
Table 6. Timber removals in Florida counties in 2014 .....	21
Table 7. Timber removals by ownership in Florida, 2013.....	23
Table 8. Timber removals, average stumpage price and value by product type and ownership in Florida, 2014	24
Table 9. Summary of wood-using mills in Florida, by size class, 2016 .....	27
Table 10. North American Industry Classification System (NAICS) sectors evaluated for the Florida forest industry .....	29
Table 11. Number of establishments, average employment and total wages paid in Florida forest industry sectors, 2016 .....	30
Table 12. Value and weight of forest product exports from Florida, 2016.....	32
Table 13. Value of forest product exports from Florida to world regions by major commodity group, 2016 .....	33
Table 14. Value and weight of forest product exports from specific Florida ports, 2016 .....	34
Table 15. Florida public forestland area and visitation in 2015.....	36
Table 16. Description of forest industry and forest-based recreation sectors in NAICS and IMPLAN <sup>®</sup> .....	39
Table 17. Inputs to the <i>IMPLAN</i> <sup>®</sup> model for economic contribution analysis of the forest industry and forest-based recreation in Florida.....	42
Table 18. Summary of economic contributions of the forest industry in the state of Florida in 2016.....	46
Table 19. Economic contributions of the forest industry in Florida by NAICS industry group in 2016.....	49
Table 20. Detailed state-local and federal tax contributions of the forest industry in Florida in 2016.....	50
Table 21. Summary of economic contributions of the forest industry in Florida regions and counties in 2016 ..	53
Table 22. Employment contributions of forest industry groups in Florida regions and counties in 2016 .....	55
Table 23. Economic contributions by the forest industry as a share of total employment and value added in Florida counties in 2016 .....	62
Table 24. Distribution of Florida counties by level of dependence on the forest industry .....	64
Table 25. Economic contributions of the forest industry in Florida in 2016 by urban-rural continuum classification .....	65
Table 26. Summary of recent reports on economic contributions of the forest industry in other U.S. states and regions.....	67
Table 27. Public forestland visitor expenditures in Florida residents and nonresidents, 2015 .....	71
Table 28. Economic contributions of recreational expenditures by nonresident visitors to public forestlands in Florida, 2015.....	71
Table 29. Global average forest ecosystem service values and estimated value of Florida forests.....	74
Table 30. Average forest ecosystem service values per acre-year for Georgia and estimated value of Florida forests.....	74

## List of Figures

Figure 1. Map of land cover types in Florida, 2014.....	12
Figure 2. Map of forest ownership in Florida, 2014 .....	16
Figure 3. Map of private forest ownership in Florida, 2014 .....	16
Figure 4. Timber removals by forest type, 2013.....	20
Figure 5. Trend in timber removals in Florida by product type, 2003-13.....	20
Figure 6. Map of timber removals in Florida counties in 2014 (green tons) .....	23
Figure 7. Forest tree planting in Florida, 2010-15 .....	24
Figure 8. Map of primary wood-using mills in Florida in 2016, by mill type and size .....	28
Figure 9. Map of secondary wood and paper product manufacturers in Florida in 2014 .....	28
Figure 10. Trend in forest industry employment, 2001-16 .....	31
Figure 11. Trend in forest industry employment, by industry 2001-16.....	31
Figure 12. Trend in value of Florida forest product exports by type of product, 2002-16 .....	35
Figure 13. Trend in value of Florida forest product exports by world region, 2013-16 .....	35
Figure 14. Economic regions in the state of Florida.....	43
Figure 15. Map of urban-rural continuum codes for Florida counties.....	44
Figure 16. Summary of employment contributions of forest industry groups in the state of Florida in 2016.....	47
Figure 17. Summary of value added (GSP) contributions of forest industry groups in the state of Florida in 2016 .....	48
Figure 18. Employment contributions of the forest industry in the top ten Florida counties in 2016 .....	57
Figure 19. Value added (GSP) contributions of the forest industry in the top ten Florida counties in 2016.....	57
Figure 20. Output contributions of the forest industry in the top ten Florida counties in 2016.....	58
Figure 21. Employment contributions of the forest industry in Florida economic regions in 2016 .....	58
Figure 22. Value added (GSP) contributions of the forest industry in Florida economic regions in 2016.....	59
Figure 23. Output contributions of the forest industry in Florida economic regions in 2016.....	59
Figure 24. Map of direct employment (jobs) in the forest industry in Florida counties in 2016 .....	60
Figure 25. Map of employment contributions (jobs) of the forest industry in Florida counties in 2016.....	60
Figure 26. Map of value added (GSP) contributions of the forest industry in Florida counties in 2016.....	61
Figure 27. Map of Florida county dependence on the forest industry in terms of employment contributions.....	64
Figure 28. Map of Florida county dependence on the forest industry in terms of value added (GSP) contributions .....	65

## **Acknowledgements**

This study was sponsored by the Florida Forestry Association (Tallahassee, Florida) under project agreement P0030605 with the University of Florida. The project was spearheaded by the Florida Forestry Economic Task Force, under the leadership of Alan Shelby (Executive Vice President), Mike Branch (Director of Operations and Regulatory Affairs), Lee Ann Fisch (Director of Communications), Mike Bell (Rayonier), Ann Hutchinson Duff (WestRock), Lynetta Usher Griner (Usher Land and Timber), and Jarek Nowak (FDACS-Florida Forest Service). Technical assistance to the project was provided by Brian Condon (BioResource Inc.), James Bentley (USDA-Forest Service), Jarek Nowak and Lorna Radcliff (Florida Forest Service), and Jimmy Conner (Florida Fish and Wildlife Conservation Commission).

## Executive Summary

The state of Florida has 17.16 million acres (26,807 square miles) of forestland, representing 50 percent of the state's total land area. The state has extensive natural and planted pine and hardwood forests that are commercially utilized for production of a wide variety of wood building materials, consumer paper and packaging products, chemicals, and renewable biomass fuels. About 44 percent of forest lands are comprised of slash, loblolly and longleaf pines, while 47 percent are hardwood or mixed hardwood and pine, and 9 percent in tropical hardwoods and other species. Nearly two-thirds (66%) of Florida's forestlands are privately owned by industry, corporations, families, or individuals, while 17 percent is state owned, 16 percent is federal, and 3 percent county and municipal government. About 16 million tons of softwood and hardwood pulpwood and sawtimber, valued at around \$316 million, is harvested annually from Florida forests. An average of 74 million trees are planted annually on 122,000 acres of forest land. Annual forest growth is 1.92 times the harvest volume, indicating that current harvest levels are sustainable. The state has 1,843 employer business establishments in the forest industry, including 74 primary wood-using mills and 363 secondary wood and paper product manufacturers. In 2016, over 3 million metric tons of Florida forest products, valued at \$1.80 billion, were exported to international destinations.

This study analyzed the economic contributions of the forest industry and forest-based recreation activities to the state of Florida in 2016, updating a previous study sponsored by the Florida Forestry Association (Hodges et al., 2005). Total economic contributions of the forest industry were estimated using data on direct employment in 32 industry sectors for forestry production (timber tracts, logging, forestry support activities), primary wood products manufacturing (sawmills, wood preservation, plywood/veneer, engineered wood, reconstituted wood, other), secondary wood products manufacturing (cut stock, millwork, wood containers, windows/doors, pallets), primary paper products manufacturing (pulp, paper, paperboard mills), converted paper products manufacturing (paperboard containers, bags, stationary, sanitary tissue, towels), forest chemical products manufacturing (turpentine, rosin, tall oil fatty acids, fragrances and flavorings), allied manufacturing of sawmill/woodworking/paper machinery, wholesale trade in lumber and wood products (lumber and wood brokers, distributors), and biomass electric power generation. Total economic contributions associated with forest-based recreation activities were estimated using data on recreational spending by nonresident visitors to Florida's 3 National Forests, 37 State Forests, and 54 Wildlife Management Areas.

A regional economic model (IMPLAN<sup>®</sup>) was used to estimate the total economic contributions of the forest industry and forest-based recreation on the Florida economy, including industry supply chain activity (indirect effects) and respending of income by households and governments (induced effects). In 2016, the forest industry sectors directly employed 36,055 persons (fulltime and part-time jobs) and collected \$12.55 billion in industry revenues. Total economic contributions of the Florida forest industry in 2016 are summarized in Table ES1. For all forest industry groups, total economic contributions included 124,104 fulltime and part-time jobs, \$25.05 billion in industry output or revenues, \$10.96 billion in value added (Gross State Product), \$6.58 billion in labor income (employee wages, salaries, benefits, business owner income), \$880 million in state and local

government tax revenues, and \$1.72 billion in federal government tax revenues. The largest forest industry groups in terms of employment contributions were primary and converted paper product manufacturing (37,355 and 20,615 jobs, respectively), together representing 47 percent of total industry contributions, followed by primary wood product manufacturing (18,549 jobs), forestry production (16,594 jobs), wholesale trade in lumber and wood (14,255 jobs), forest chemicals manufacturing (9,178 jobs), and secondary wood product manufacturing (7,101 jobs).

Total output contributions of the Florida forest industry estimated in this study are similar to the estimates for the environmental horticulture industry (nursery/greenhouse production, landscape services, retail garden centers) (Hodges et al., 2016), and are significantly larger than for the iconic Florida citrus industry in 2015-16 (Court et al., 2017).

The top ten Florida counties in terms of forest industry direct output (sales revenues) were Duval (\$1.37 billion), Miami-Dade (\$1.18 billion), Taylor (\$877 million), Polk (\$811 million), Nassau (\$773 million), Bay (\$723 million), Hillsborough (\$707 million), Putnam (\$604 million), Broward (\$502 million) and Escambia (\$437 million). The top ten counties in terms of employment contributions were Duval (11,885 jobs), Taylor (11,456), Nassau (9,847), Miami-Dade (9,010), Bay (8,461), Polk (6,399), Escambia (5,653), Hillsborough (5,370), Seminole (4,943), and Broward (4,334), as shown in Figure ES1. The mix of forest industry sectors is quite different across Florida counties: Taylor, Nassau, Bay, Escambia, Putnam, and Seminole Counties are dominated by primary paper products manufacturing due to the presence of pulp and paper mills; Duval, Miami-Dade, Polk, Hillsborough, and Putnam Counties have major converted paper products manufacturing; Polk, Duval, Hillsborough, Taylor and Miami-Dade Counties have significant wood products manufacturing; Duval and Bay Counties have significant forest chemical (allied) manufacturing; the urbanized Counties of Miami-Dade, Hillsborough, Duval, Polk and Seminole have significant wholesale trade activity (Figure ES1). County-level economic contributions were also aggregated into nine functional economic regions.

Employment contributions of the Florida forest industry represented 1.10 percent of the state workforce and total value added contributions represented 1.23 percent of Gross State Product (GSP), indicating the relative importance of this industry to the state of Florida. Community dependence on the forest industry was analyzed in terms of the share of total employment or value added (GSP) in each county: four counties were classified as “critically dependent”, with employment contributions representing over 20 percent of the county workforce and value added contributions over 30 percent of GSP (Taylor, Liberty, Nassau, and Dixie); seven counties were classified as “very dependent” with over 10 percent of employment or 15 percent of GSP (Putnam, Jefferson, Union, Lafayette, Madison, and Calhoun), and five counties were considered “moderately dependent”, with employment contributions over five percent (Gilchrist, Hamilton, Bay, Franklin, and Gadsden), as shown in Figure ES2. Although timber production and dependence on the forest industry was highest in rural counties, the overall economic contributions of the forest industry were greatest in metropolitan area counties with populations of 250,000 or more and in counties adjacent to metro areas, demonstrating the important forestry-related linkages that exist between urban and rural areas throughout the state.

In addition to industrial forest-related activity, public forestlands in Florida support a variety of recreational activities and attract a significant number of recreational visitors. National Forests, State Forests, and Wildlife Management Areas in Florida cover a total of 3.70 million acres and received a total of 6.93 million visitor-days in 2015. Total economic contributions of forest-based recreational spending by nonresident visitors to these areas were estimated at 7,818 jobs, \$851 M in industry output, \$505 M in value added, \$48 M in state and local tax revenues, and \$80 M in federal tax revenues (Table ES1).

Florida forests also provide many non-marketed environmental or ecosystem services such as surface and groundwater storage, air and water purification, atmospheric carbon storage, 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. Although these ecosystem services were not explicitly quantified in this study, secondary sources were compiled that suggest a value of approximately \$24 to \$32 billion annually.

Table ES1. Summary of total economic contributions of the forest industry and forest-based recreational spending by nonresidents in Florida in 2016

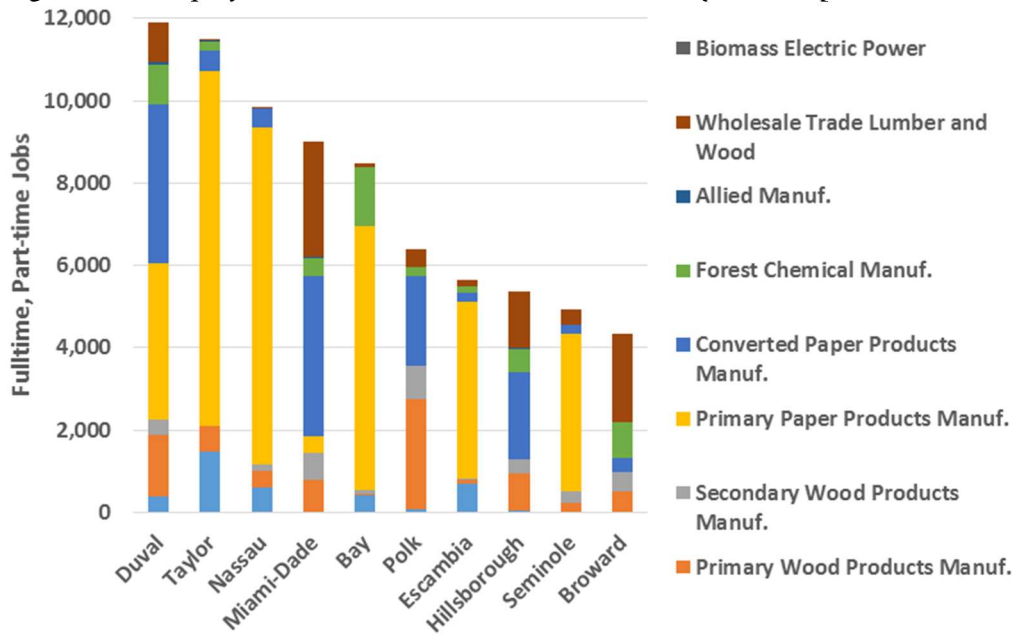
Industry Group, Sector(s)	Employment (Fulltime and Part- time Jobs)	Labor Income (Wages, salaries, benefits)	Value Added (GSP)	Industry Output (Revenues)	State and Local Taxes	Federal Taxes
----- Million Dollars -----						
<u>Forestry Production</u> : timber tracts, logging, forestry support activities	16,594	758	1,074	1,769	60.6	176.5
<u>Primary Wood Product Manufacturing</u> : sawmills, wood preservation, plywood/veneer, engineered wood, reconstituted wood, other	18,549	907	1,355	3,445	98.0	224.0
<u>Secondary Wood Product Manufacturing</u> : cut stock, millwork, wood containers, windows/doors, pallets	7,101	324	468	1,239	19.2	78.0
<u>Primary Paper Product Manufacturing</u> : pulp mills, paper mills, paperboard mills	37,355	2,031	3,477	7,685	258.1	533.6
<u>Converted Paper Product Manufacturing</u> : paperboard containers, bags, stationary, sanitary tissue, towels	20,615	1,169	2,129	5,582	132.3	316.4
Forest Chemical Product Manufacturing	9,178	479	807	2,570	78	144
Sawmill, Woodworking and Paper Machinery Manufacturing (allied manufacturing)	343	19	28	58	1.9	4.5
Wholesale Trade Lumber and Wood	14,255	874	1,569	2,558	214.6	239.2
Biomass Electric Power	114	16	50	139	17.9	5.7
<b>Total Industrial Activity</b>	<b><u>124,104</u></b>	<b><u>6,576</u></b>	<b><u>10,957</u></b>	<b><u>25,045</u></b>	<b><u>880</u></b>	<b><u>1,722</u></b>
Nonresident Public Forestland Recreation	7,818	311	505	851	48	80
<b>Total Industrial Activity and Forestland Recreation</b>	<b><u>131,922</u></b>	<b><u>6,887</u></b>	<b><u>11,462</u></b>	<b><u>25,896</u></b>	<b><u>928</u></b>	<b><u>1,802</u></b>

Values in 2016 dollars.

Estimates include applicable direct, indirect and induced multiplier effects.

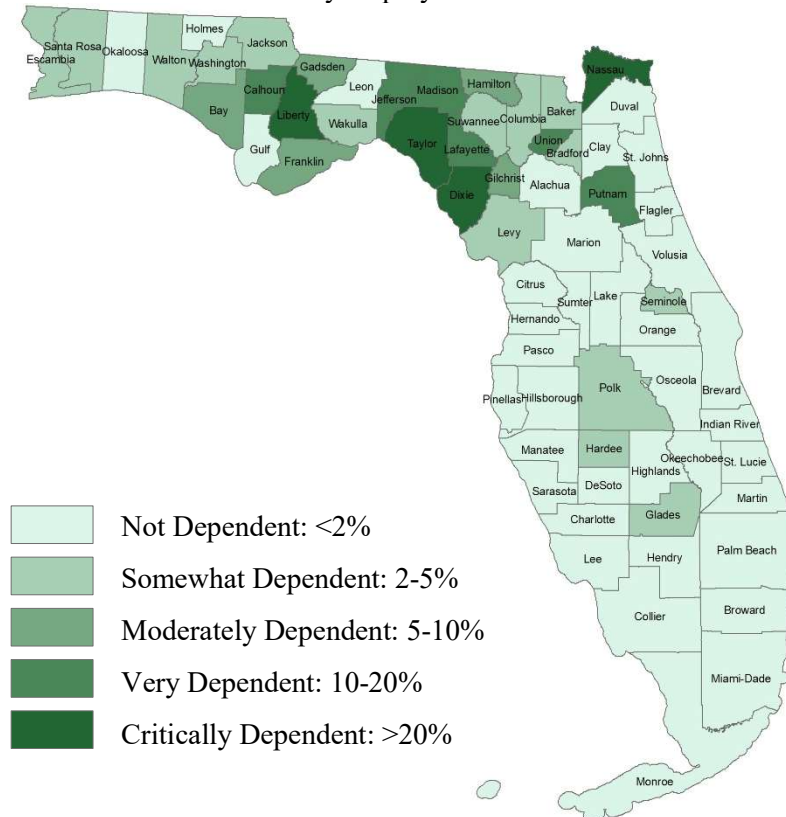


Figure ES1. Employment contributions of the forest industry in the top ten Florida counties in 2016



Note: Does not include forest-based recreation.

Figure ES2. Map of Florida county dependence on the forest industry in terms of employment contributions as share of total county employment



## Introduction

The subtropical environment of Florida supports a rich biodiversity of softwood and hardwood tree species that are commercially utilized, including pine, cypress, cedar, oak, poplar, maple, hickory, tupelo, and gum.

According to the USDA Forest Service-Forest Inventory and Analysis (FIA), Florida has over 17 million acres or 26,800 square miles of forestland, representing 50% of the state's total land area (USDA Forest Service, 2015). Figure 1 illustrates the distribution of land cover in Florida in 2014, including a variety of forestland categories. Forests are concentrated in the northern part of Florida, with nearly all counties in this area having at least 50 percent forest cover and many counties having over 75 percent forestland cover. In fact, timberlands in this region are part of one of the world's largest concentrations of intensively managed plantations of southern pines. Land cover in southern Florida is dominated by a mix of wetlands, agriculture and urban development, with forestland cover averaging only 27 percent of the area across all counties, and several counties having less than 15 percent forestland cover (Brenner et al., 2016).

Florida forests are managed to produce a variety of wood and fiber products such as lumber, poles/pilings, veneer and plywood, reconstituted wood products, preservative-treated wood products, pulp, paper and paperboard, converted paper products, wood chemicals and biomass electric power generation. In a previous study sponsored by the Florida Forestry Association for 2003, the forest industry in Florida generated \$7.78 billion in direct sales revenues and directly employed 30,164 persons (fulltime and part-time positions). The total economic contributions, including regional multiplier effects, were estimated at \$16.53 billion in industry output, \$7.52 billion in value added (GSP), and 133,475 fulltime and part-time jobs (Hodges et al, 2005). The industry suffered a significant downturn during the global recession of 2007-09, but has steadily grown since 2012. More recently, total economic contributions of the Florida forest products industry in 2014 were estimated at 77,621 jobs, labor income of \$3.98 billion, GSP of \$6.59 billion, and industry output of \$16.09 billion (Hodges et al, 2016). Industry sectors with the largest employment contributions were paper and paperboard mills (17,406 jobs), paperboard container manufacturing (12,654), sanitary paper product manufacturing (9,127 jobs), engineered wood truss manufacturing (6,608), pulp mills (6,129), and commercial logging (5,115). The purpose of this study was to update the economic contribution estimates for the Florida forest industry for 2016.

In addition to commercial commodities and services, there are also significant recreation and tourism values associated with the natural amenities available at public forestlands in Florida. These forested landscapes provide environmental amenities that support wildlife-related recreation, such as hunting and wildlife viewing, and nature-based recreational activities. The Outdoor Industry Association ranked Florida second in the U.S., behind only California, in terms of consumer spending on outdoor recreational activities such as camping, fishing, hunting, motorcycle riding, off-road activities, trail sports, snow sports (not available in Florida), water sports, and wheel sports, many of which take place in forests (Outdoor Industry Association, 2014). According to a survey conducted by the U.S. Department of the Interior's Fish and Wildlife Service, over 4 million participants engaged in wildlife watching, over 3 million engaged in fishing, and over 240,000 engaged in

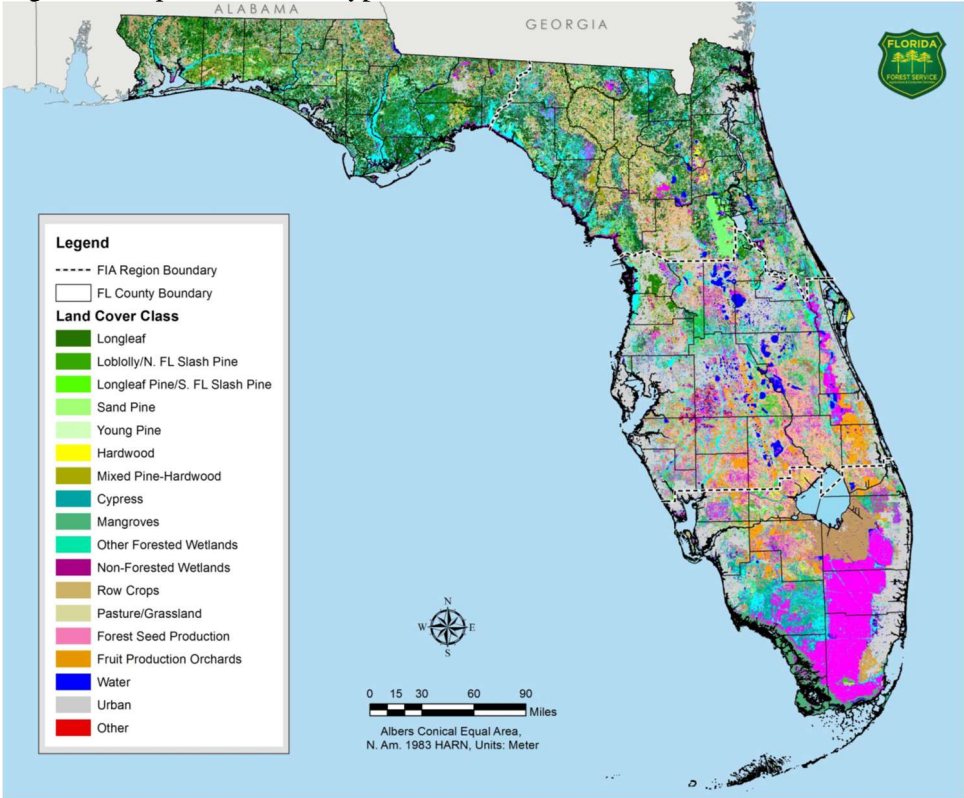
hunting in Florida in 2011 (DOI-FWS 2011 Survey). Of course, not all of this recreational activity takes place in forests, however, much of the hunting and wildlife watching probably does. To provide defensible estimates of the economic contributions associated with forest-based recreation, this analysis considers only spending by non-residents within National Forests, State Forests, and Wildlife Management Areas in Florida. Together, these public forestlands accounted for 3.7 million acres of forests available for public recreation and amassed 6.93 million visitor-days in 2015. Data on visitor-days and expenditure patterns for non-resident visitors to these public forestlands were used to estimate the total economic contributions of forest-based recreation.

Florida forests also provide many non-marketed environmental services that are important to recognize. Some of the environmental services associated with forests include surface and groundwater 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. Although many of these environmental and ecosystem services are not readily quantifiable, secondary sources were evaluated to provide a range of values for some of these services provided by Florida forests.

Finally, the forests of Florida also provide numerous amenities or quality of life benefits that are often capitalized on within real estate markets and community development projects. Many of these benefits provided are personal, psychic, or aesthetic benefits such as scenic views, therapeutic and physical health values, intrinsic existence values, and religious or spiritual values. However, these benefits also include community level benefits such as support of rural life, provision of character building opportunities, support of national identity/ideals, heritage, research, and educational values. The forest industry also generates a significant amount of electric power and heat energy to meet its own internal energy needs for manufacturing processes, using residuals and byproducts, thereby contributing to energy sustainability. Also, the industry increasingly uses post-consumer recycled fiber sources for paper manufacturing, which reduces the dependence upon forests for virgin wood fiber. Like the environmental services provided by forests, neither the quality of life and community benefits nor the sustainability efforts are readily quantifiable, but are important nonetheless. However, the quantification of these benefits was outside of the scope of this analysis.

This study provides economic contribution estimates for the Florida forest industry and forest-based recreation for 2016 at a variety of relevant geographical scales. Additionally, information on product volumes and values as well as an evaluation of secondary sources for the valuation of ecosystem services provided by Florida forests are presented. This project relied upon past analyses for the state of Florida as well as recent forestry contribution studies for other southern states and methodological recommendations found within the academic literature to generate meaningful estimates that are both academically sound and useful to the industry. The results presented within this report will enable industry leaders to demonstrate the economic importance of the industry, and support advocacy and outreach efforts to state and local policy makers, regulatory agencies, and the public at large, in the interest of informed public policy.

Figure 1. Map of land cover types in Florida, 2014



Source: Brenner et al. (2016)

## Data

A wide variety of data were compiled from numerous sources for this study including data on forest types, ownership, acreage and value of timber removals, and other characteristics of Florida forests and timberlands; data on the location, employment, and wage characteristics of forest-related industry establishments as well as exports of forest products from Florida ports; and data on the recreational use of public forestlands in Florida including visitor-days and expenditure patterns at National Forests, State Forests, and Wildlife Management areas. Data sources for each of these categories are given below along with summary statistics.

### Florida Forests

The Forest Inventory and Analysis, published by the USDA Forest Service, provides data on tree species, stand age, aboveground biomass contained in Florida forests, and forest ownership for 2015. Of Florida's 17.16 million acres of forestland, longleaf and slash pines represented the largest category of tree species with 33.0 percent of total forestland area, followed by oak/gum/cypress (21.9%), oak/hickory (16.3%), and loblolly/shortleaf pine (10.7%), as shown in Table 1. Pine and other softwood types represented 43.8 percent of forestland area, while oak and other hardwoods represented 44.0 percent. Florida is unique in the U.S. in having nearly 700,000 acres of tropical hardwoods (USDA Forest Service, 2015).

A total of 4.63 million acres (27.0%) were artificially regenerated, of which the vast majority was for pine or oak/pine forest types. FIA data indicate that 1.65 million acres or 9.6 percent of forestlands in Florida in 2015 were timber stands zero to five years of age, suggesting that an average of around 330,000 acres (1.92% of forest area) are regenerated annually (USDA Forest Service, 2015). Information from the Florida Forest Service indicate that an annual average of 74.15 million pine, cypress and hardwood tree seedlings were planted on an average of 121,883 acres of Florida timberlands during 2010-15, based on a survey of forest nurseries and public and private timberland owners (FDACS, 2015).

Total aboveground biomass of Florida forestland live trees at least one inch diameter at breast height (dbh) was over 611 million short tons (dry weight basis) in 2015, including 562 million (M) tons (92.0%) on timberland, and nearly 49 M tons (8.0%) on reserved and other forestland. Approximately half of the total biomass weight, about 306 M tons, represented carbon stored in live trees. Average annual net growth of forestland trees 5 or more inches dbh was over 962 M cubic feet (USDA Forest Service, 2015).

Figure 2 illustrates the distribution of forest ownership in Florida in 2014. In contrast with generalizations on forest ownership in many regions of the world, most of Florida's forests are privately owned as opposed to publicly owned (Figure 3). In 2015, private ownership accounted for 64.3 percent of all of Florida's forestlands whereas the federal government owned 15.6 percent and the state, local, and municipal governments owned 20.2 percent, as shown in Table 3 (USDA Forest Service, 2015). Private ownership includes industrial corporate ownership, non-industrial corporate ownership, and non-industrial non-corporate (individual and family) ownership.

Timberland tax parcel data for 2015, published by the Florida Department of Revenue, are summarized in Table 4. In 2015, there were over 77,000 timberland tax parcels in Florida, encompassing 7.12 million acres (11,123 square miles), with an assessed land value of \$1.816 billion and an estimated market value (“just value”) of \$16.876 billion, including improvements. The ten largest counties in terms of timberland acreage were Taylor (477,538 acres), Levy (340,643), Dixie (333,162), Madison (295,192), Bay (287,219), Calhoun (275,720), Jackson (274,566), Gulf (264,929), Nassau (241,908), and Lafayette (233,332). Across the state, the assessed value of timberland represented 0.1 percent of all assessed property value, but was over five percent in five counties: Calhoun (8.5%), Dixie (5.3%), Lafayette (8.7%), Madison (5.3%), and Union (6.5%). The twenty-five largest landowners in the state included six owners with over 100,000 acres, four with over 200,000 acres, and one with over 500,000 acres, as shown in Table 5. Note that eight counties did not have or did not provide data on timberland tax parcels: Broward, Collier, Hendry, Indian River, Miami-Dade, Monroe, Okeechobee, and Pinellas.

Commercial timberland accounted for 15.28 million acres (89.0%) of Florida’s total forest land area, while reserved forestland not available to commercial use accounted for 1.59 million acres (9.3%) and miscellaneous other forestland accounted for 287,811 acres (1.7%) (Table 2) (USDA Forest Service, 2015). Total timber harvest removals from Florida forestlands in 2014 were estimated by Brenner et al (2016) at 16.33 M tons, including 4.89 M tons of pine sawtimber, 9.87 million tons of pine pulpwood, 1.32 M tons of mixed hardwood pulpwood, and 0.248 M tons of mixed hardwood sawtimber. A majority of timber removals in 2014 were from the longleaf-slash pine forest type (63%), followed by loblolly-shortleaf pine (19%), other pines (10%), cypress (3%), and other forest types (5%), as illustrated in Figure 4. The trends in timber removals during 2003-13 show an increase of 9.1% in overall removals, an increase of 10.6 percent for pulpwood, and a 4.9 fold increase for other industrial timber, but a decrease of 26.9 percent for saw logs (Figure 5). The distribution of timber removals in Florida counties is shown in Table 6 and Figure 6. Table 7 displays data on timber removals in 2013 by ownership, which were dominated by the forest industry (71.5%) and other private landowners (18.6), with relatively small shares for National Forests (1.5%) and other public lands (8.3%). Net annual growth of timber on non-reserved forest lands in 2014 was estimated at 31.32 million green tons, or 1.92 times the harvest (removal) rate, indicating that the industry is harvesting timber at a sustainable level (Brenner et al, 2016).

The value of timber harvested from Florida forestlands was estimated using timber removals data together with weighted average timber stumpage prices for Florida in 2014 from Forest2Market, Inc. (Forest2Market, Inc., 2017). Prices for timber products were \$25.89 per ton for pine sawtimber, \$17.56 for pine pulpwood, \$23.26 for mixed hardwood sawtimber and \$8.10 for hardwood pulpwood. The total stumpage value to landowners was estimated at \$316.5 M, including \$285.3 M for private landowners, \$21.0 M for state and local governments, and \$10.2 M for the federal government, as shown in Table 8.

Information on forest tree planting in Florida was provided by the Florida Forest Service, based on surveys of forest nurseries, tree planting contractors and large landowners. Since 2010, an average of 74 million trees were planted annually on 122,000 acres, and the number of acres planted has gradually increased over time (Figure

7). In addition, in 2015 there were 1.65 million acres of Florida forestlands with timber stands 0 to 5 years of age, suggesting an average of 330,000 acres are regenerated annually through natural or artificial means (USDA-FIA).

Table 1. Area of forest land by forest type and stand origin, Florida, 2015

Forest Type	Natural stands	Artificial regeneration	Total
	-----Acres-----		
Longleaf / Slash Pine	2,679,400	2,983,014	5,662,414
Loblolly / Shortleaf Pine	786,603	1,044,530	1,831,134
Other Eastern Softwoods	22,010		22,010
Oak / Pine	1,247,773	249,665	1,497,438
Oak / Hickory	2,681,221	114,400	2,795,621
Oak / Gum / Cypress	3,711,618	44,554	3,756,172
Elm / Ash / Cottonwood	201,300		201,300
Other Hardwoods	26,688		26,688
Tropical Hardwoods	690,782	7,882	698,663
Exotic Hardwoods	50,078	11,942	62,020
Nonstocked	426,489	176,446	602,935
Total	<u>12,523,962</u>	<u>4,632,434</u>	<u>17,156,396</u>

Source: USDA-Forest Service, Forest Inventory and Analysis program

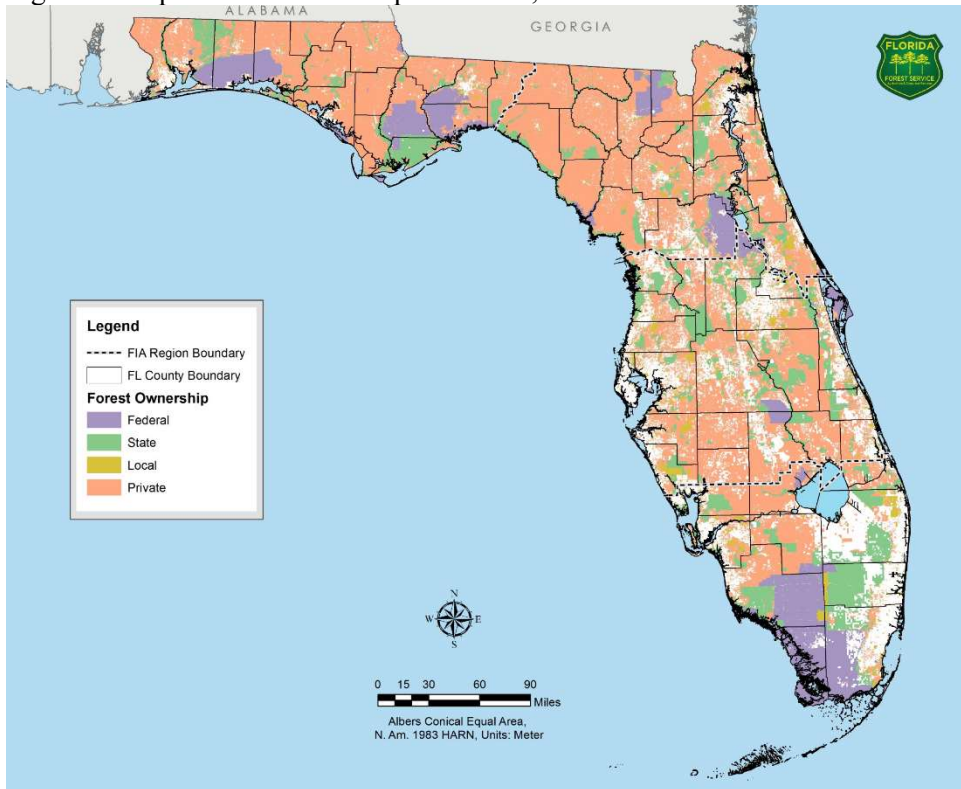
Table 2. Aboveground biomass of live trees on forest land by ownership and land use in Florida, 2015

Ownership class	Timberland	Reserved Forestland	Other forestland	Total
	----- Short tons (dry weight) -----			
National Forest	42,844,154	1,149,083	194,704	44,187,941
National Park Service		17,054,173		17,054,173
Fish and Wildlife Service		10,202,762		10,202,762
Department of Defense	14,855,865		334,498	15,190,363
Other federal	1,580,601			1,580,601
State	109,032,099	13,240,772	212,738	122,485,609
County and Municipal	11,583,184	4,603,762	263,111	16,450,058
Other local government	19,401		4,281	23,681
Private	382,268,049		1,613,059	383,881,108
Total	<u>562,183,354</u>	<u>46,250,551</u>	<u>2,622,390</u>	<u>611,056,295</u>

Trees counted that are at least 1 inch diameter at breast height (dbh).

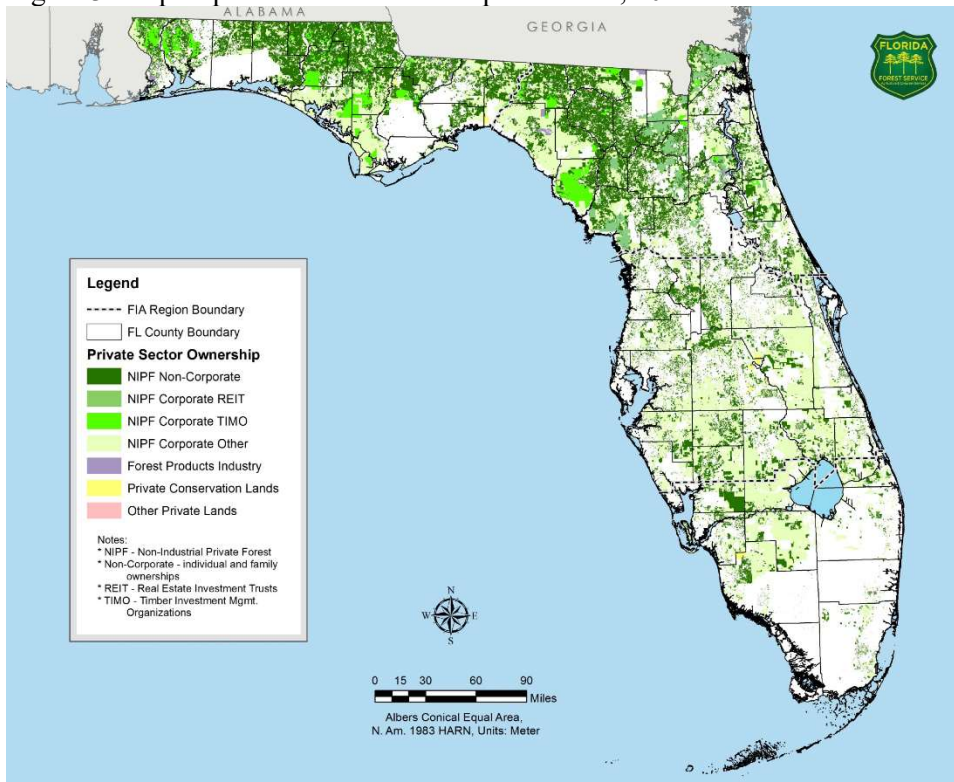
Source: USDA-Forest Service, Forest Inventory and Analysis program

Figure 2. Map of forest ownership in Florida, 2014



Source: Brenner et al. (2016)

Figure 3. Map of private forest ownership in Florida, 2014



Source: Brenner et al. (2016)



Table 3. Florida forest land area by ownership and land use, 2015

Ownership class	Timberland	Reserved	Other	Total
		Forestland	forestland	
----- Acres -----				
National Forest	1,107,573	54,083	9,571	1,171,227
National Park Service		729,502		729,502
Fish and Wildlife Service		184,785		184,785
Department of Defense	520,956		24,527	545,483
Other federal	39,207			39,207
State	2,411,775	448,218	38,166	2,898,158
County and Municipal	336,622	175,665	37,729	550,017
Other local government	3,377		5,971	9,348
Private	10,856,821		171,848	11,028,669
<b>Total</b>	<b>15,276,332</b>	<b>1,592,253</b>	<b>287,811</b>	<b>17,156,396</b>

Forest land is defined as at least 10-percent stocked by trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. The minimum area for classification of forest land is 1 acre and 120 feet wide measured stem-to-stem from the outer-most edge. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 120 feet wide.

Source: USDA-Forest Service, Forest Inventory and Analysis program

Table 4. Summary of forestland tax parcels, acreage and value in Florida counties, 2015

County	Number Parcels	Acres	Assessed Value of Timberland (Million \$)	Market Value Timberland and Improvements (Million \$)	Forestland Share of Total County Assessed Value
Alachua	3,442	205,294	49.1	605.9	0.2%
Baker	1,027	147,589	41.6	177.6	3.1%
Bay	1,040	287,219	51.7	368.1	0.3%
Bradford	964	95,685	21.3	244.3	1.7%
Brevard	62	12,232	0.8	8.5	0.0%
Calhoun	1,937	275,720	50.2	281.9	8.5%
Charlotte	49	2,345	1.4	9.6	0.0%
Citrus	858	19,440	6.5	149.9	0.1%
Clay	672	106,682	23.9	326.7	0.2%
Columbia	2,045	178,551	37.1	333.0	1.0%
Desoto	18	213	0.1	1.7	0.0%
Dixie	1,803	333,162	45.9	603.1	5.3%
Duval	1,281	94,867	113.0	1,849.8	0.1%
Escambia	851	135,536	12.4	226.3	0.1%
Flagler	1,184	172,359	30.7	330.1	0.3%
Franklin	167	39,030	3.1	56.0	0.1%
Gadsden	3,106	219,062	61.1	696.6	2.7%
Gilchrist	1,593	102,334	24.4	291.6	2.7%
Glades	126	65,908	4.9	294.9	0.4%
Gulf	755	264,929	61.2	264.0	2.9%
Hamilton	1,630	149,988	30.8	220.4	3.2%
Hardee	16	771	0.1	2.7	0.0%
Hernando	1,045	37,353	22.3	297.0	0.2%
Highlands	191	5,550	2.0	8.2	0.0%

County	Number Parcels	Acres	Assessed Value of Timberland (Million \$)	Market Value Timberland and Improvements (Million \$)	Forestland Share of Total County Assessed Value
Hillsborough	110	5,469	6.4	50.9	0.0%
Holmes	3,126	178,865	33.9	338.1	4.6%
Jackson	4,457	274,566	72.1	418.8	3.0%
Jefferson	1,963	143,761	26.5	338.5	3.0%
Lafayette	1,900	233,332	37.3	265.9	8.7%
Lake	1,092	44,709	24.1	86.7	0.1%
Lee	48	3,853	1.8	12.8	0.0%
Leon	674	78,422	70.8	340.7	0.3%
Levy	3,012	340,643	67.9	553.3	2.8%
Liberty	1,415	180,009	22.9	249.2	3.6%
Madison	3,925	295,192	49.0	437.7	5.3%
Manatee	4	82	0.1	0.6	0.0%
Marion	2,245	145,869	42.0	575.7	0.2%
Martin	33	4,011	1.0	32.1	0.0%
Nassau	2,258	241,908	70.6	679.9	0.8%
Okaloosa	1,625	114,328	22.2	244.8	0.1%
Orange	236	18,285	197.7	573.8	0.2%
Osceola	156	3,990	8.0	241.1	0.0%
Palm Beach	12	1,255	0.5	67.8	0.0%
Pasco	611	35,915	18.0	239.0	0.1%
Polk	246	8,628	7.6	86.3	0.0%
Putnam	2,934	145,336	27.4	361.0	0.6%
Santa Rosa	2,507	205,975	44.9	352.0	0.2%
Sarasota	7	798	0.2	23.0	0.0%
Seminole	37	833	0.8	20.0	0.0%
St Johns	937	145,473	63.6	658.8	0.1%
St Lucie	6	1,794	0.6	6.1	0.0%
Sumter	81	2,214	1.0	14.1	0.0%
Suwannee	2,152	118,821	24.4	237.1	1.1%
Taylor	1,797	477,538	64.0	376.5	3.6%
Union	1,746	117,339	29.3	340.4	6.5%
Volusia	2,970	133,576	16.7	397.8	0.0%
Wakulla	1,305	74,796	12.3	215.0	0.7%
Walton	2,340	171,720	20.7	75.2	0.1%
Washington	3,518	217,606	33.8	317.4	2.8%
Total	<u>77,347</u>	<u>7,118,732</u>	<u>1,815.8</u>	<u>16,876.0</u>	0.1%

Note: Missing data for eight counties: Broward, Collier, Hendry, Indian River, Miami-Dade, Monroe, Okeechobee, Pinellas.

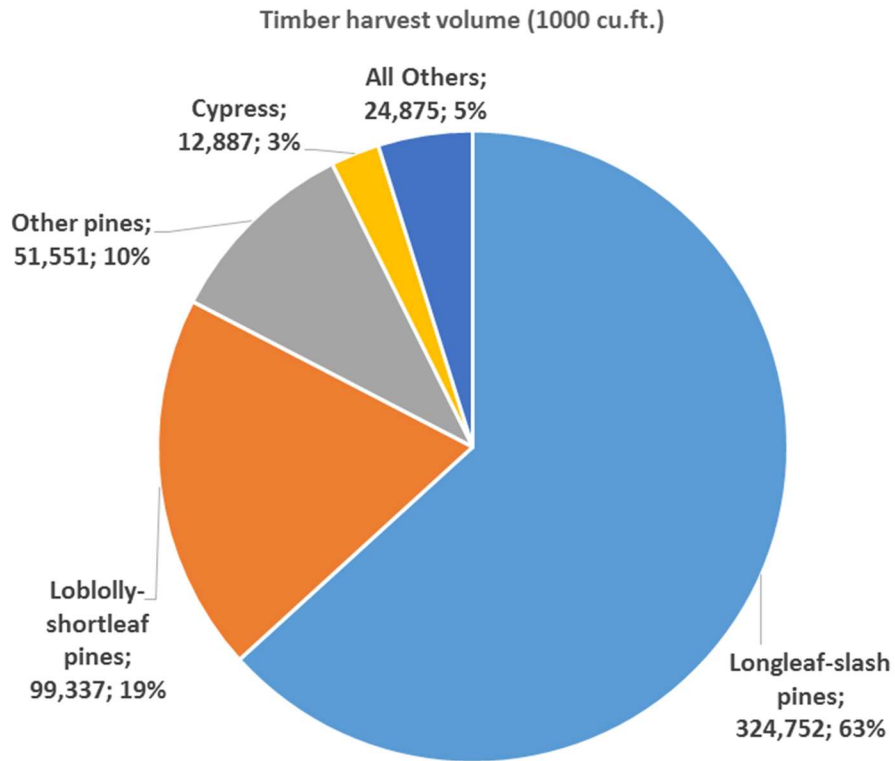
Source: Florida Department of Revenue and County Property Appraisers.

Table 5. Acreage owned by the largest twenty-five forest landowners in Florida, 2015

Owner Name	Acres
Foley Timber & Land Co.	557,154
Plum Creek Timberlands LP	320,315
Deseret Ranches Of North Florida LLC	283,535
Rayonier Atlantic Timber Co.	234,845
Bascom Southern LLC	120,536
St Joseph Land & Development Co.	115,060
Bear Creek Timber LLC	97,214
RMS Timberlands LLC	91,670
Neal Land & Timber Co.	77,473
Sleepy Creek Lands LLC	69,385
Lykes Bros Inc.	65,714
Northern Trust Co.	52,959
Ware Holland M. Trustee	51,325
Miami Corp.	51,308
Lyme Cross City Forest Company	45,758
La Floresta Perdida Inc.	41,865
Profundus Holdings Inc.	32,760
Relay Timberlands LLC	30,329
Southern Timber Venture II LLC	27,802
Holland M Ware Charitable Foundation	25,964
TRM Woodlands Inc.	25,669
Terrapointe LLC	25,486
FIA Timber Growth Florida 1 LLC	24,671
Lake Talquin Timberlands LLC	23,916
Suwannee Lake Plantation Inc.	23,611

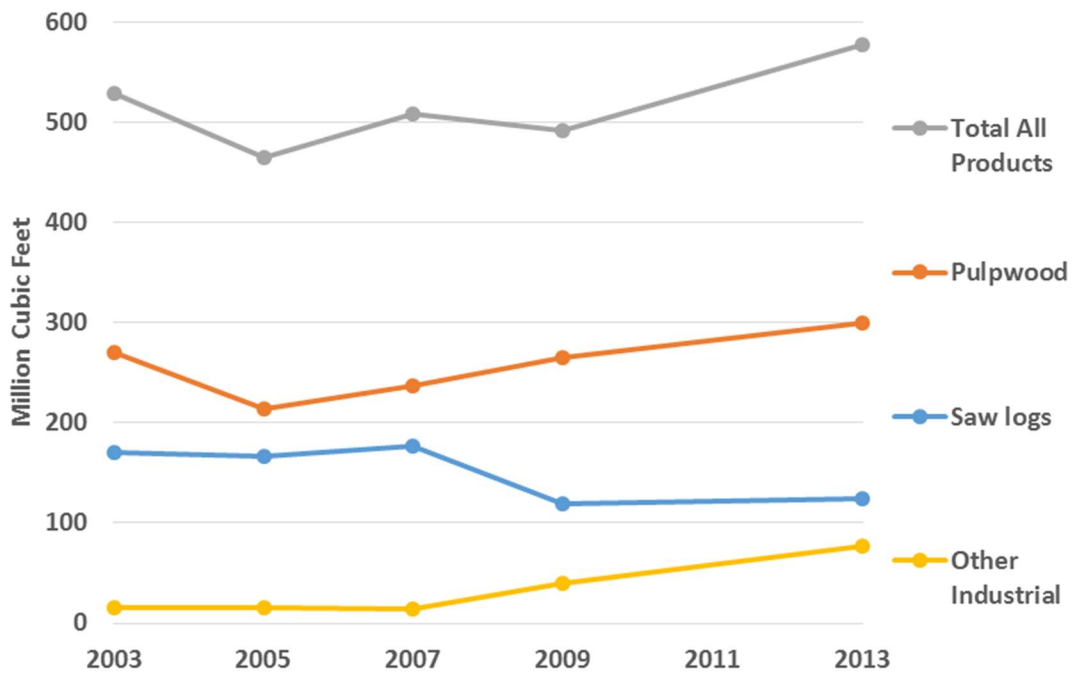
Source: Florida Department of Revenue and County Property Appraisers.

Figure 4. Timber removals by forest type, 2013



Source: USDA-Forest Service, Timber Product Output program.

Figure 5. Trend in timber removals in Florida by product type, 2003-13



Source: USDA-Forest Service, Timber Product Output program.

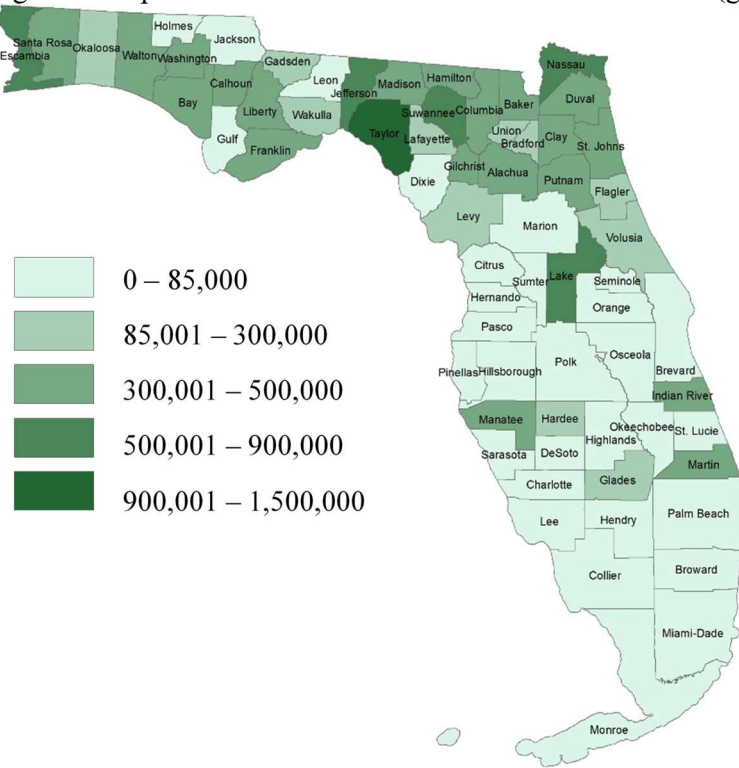
Table 6. Timber removals in Florida counties in 2014

County	Pine Pulpwood	Pine Sawtimber	Hardwood & Cypress Pulpwood	Hardwood & Cypress Sawtimber	Total All Timber
----- Green Tons -----					
Alachua	263,610	166,268	38,257	9,819	477,954
Baker	237,371	135,095	31,388	3,700	407,554
Bay	280,961	131,397	63	4,464	416,885
Bradford	116,684	109,322	16,757	3,862	246,625
Brevard	513	822	1,070	1,067	3,472
Broward	0	88	930	0	1,018
Calhoun	209,689	246,483	2,498	4,334	463,004
Charlotte	18,066	809	7,347	355	26,577
Citrus	17,104	9,502	4,336	5,731	36,673
Clay	249,016	139,636	22,729	4,663	416,044
Collier	21,237	2,219	5,741	0	29,197
Columbia	210,702	166,076	38,311	7,718	422,807
Dade	0	0	0	0	0
Desoto	13,884	666	10,091	617	25,258
Dixie	210,074	89,754	69,623	6,871	376,322
Duval	500,758	134,362	38,074	3,747	676,941
Escambia	151,161	77,624	14,217	1,033	244,035
Flagler	304,984	53,826	14,992	377	374,179
Franklin	121,005	29,465	944	2,814	154,228
Gadsden	241,179	149,022	47,625	4,701	442,527
Gilchrist	95,006	89,926	21,623	4,413	210,968
Glades	11,587	248	19,201	314	31,350
Gulf	150,479	184,711	193	3,303	338,686
Hamilton	163,336	106,627	21,923	4,628	296,514
Hardee	11,483	1,590	10,961	954	24,988
Hendry	14,176	414	16,745	4	31,339
Hernando	14,894	4,004	5,779	4,745	29,422
Highlands	10,946	777	19,942	801	32,466
Hillsborough	24,973	5,181	14,436	8,725	53,315
Holms	245,650	168,313	16,619	2,693	433,275
Indian River	178	0	541	365	1,084
Jackson	501,946	350,338	54,701	6,722	913,707
Jefferson	112,257	55,089	66,441	7,682	241,469
Lafayette	370,891	132,225	43,548	7,568	554,232
lake	30,348	7,179	11,048	5,524	54,099
Lee	19,799	1,095	7,266	195	28,355
Leon	126,597	86,049	38,518	6,594	257,758
Levy	155,181	156,933	28,979	10,367	351,460
Liberty	348,229	157,812	6,292	6,380	518,713
Madison	187,833	109,837	52,283	6,641	356,594
Manatee	9,125	1,356	7,489	3,122	21,092
Marion	238,184	83,754	30,819	11,858	364,615
Martin	960	0	3,048	0	4,008

County	Pine	Pine	Hardwood	Hardwood	Total All
	Pulpwood	Sawtimber	& Cypress Pulpwood	& Cypress Sawtimber	
----- Green Tons -----					
Monroe	0	0	0	0	0
Nassau	438,410	102,043	38,849	3,394	582,696
Okaloosa	221,588	62,448	20,959	1,269	306,264
Okeechobee	494	108	3,784	328	4,714
Orange	15,025	4,258	6,421	1,894	27,598
Osceola	7,633	2,790	6,719	1,913	19,055
Palm Beach	597	0	11,322	0	11,919
Pasco	19,790	6,890	7,262	6,684	40,626
Pinellas	3,755	846	2,474	2,186	9,261
Polk	38,985	8,957	27,346	9,461	84,749
Putnam	329,715	89,110	44,128	2,875	465,828
Santa Rosa	369,305	97,003	25,728	1,336	493,372
Sarasota	8,549	314	2,348	887	12,098
Seminole	4,900	1,225	1,818	559	8,502
St Johns	251,006	80,531	28,585	873	360,995
St Lucie	6	0	1,865	164	2,035
Sumter	30,161	4,999	11,997	4,875	52,032
Suwannee	315,921	188,684	39,984	8,017	552,606
Taylor	901,107	441,811	100,775	11,213	1,454,906
Union	87,367	128,359	36,047	3,831	255,604
Volusia	96,452	29,719	8,224	1,160	135,555
Wakulla	107,397	88,831	13,808	7,458	217,494
Walton	369,405	92,767	10,625	4,713	477,510
Washington	242,275	113,586	8,653	3,535	368,049
Total All Areas	<u>9,871,899</u>	<u>4,891,173</u>	<u>1,323,109</u>	<u>248,096</u>	<u>16,334,277</u>

Source: Brenner et al (2016).

Figure 6. Map of timber removals in Florida counties in 2014 (green tons)



Source: Brenner et al, 2016.

Table 7. Timber removals by ownership in Florida, 2013

Ownership class	Softwood	Hardwood	All Species	Percent of Total
	----- Thousand Cubic Feet -----			
National Forest	7,428	428	7,856	1.5%
Other Public	40,559	2,177	42,736	8.3%
Forest Industry	349,834	17,291	367,125	71.5%
Other Private	91,331	4,352	95,683	18.6%
Total	<u>489,153</u>	<u>24,248</u>	<u>513,401</u>	<u>100.0%</u>
Total forest industry and other private	441,165	21,643	462,808	90.1%

Source: USDA-Forest Service, Timber Product Output program.

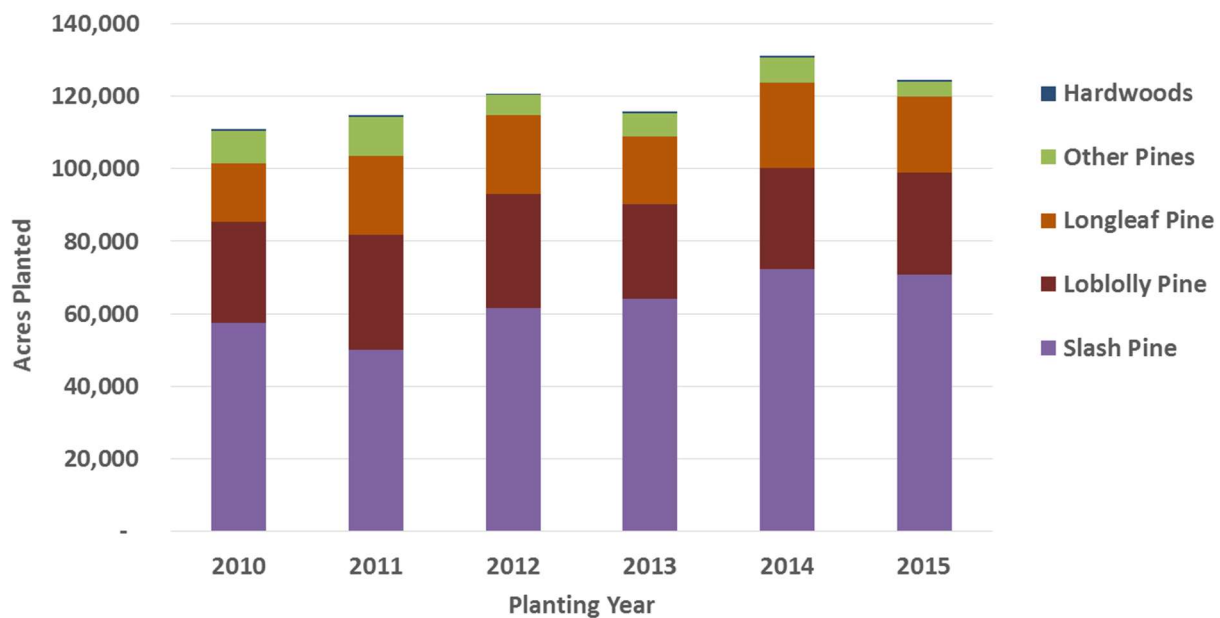
Table 8. Timber removals, average stumpage price and value by product type and ownership in Florida, 2014

Product / Ownership	Timber Removals (tons)	Average Price (\$/ton)	Stumpage Value (M\$)
Pine Sawtimber	4,891,170	25.89	126.63
Pine Pulpwood	9,871,902	17.56	173.35
Mixed Hardwood Sawtimber	248,093	23.26	5.77
Hardwood Pulpwood	1,323,109	8.10	10.72
<b>Total</b>	<b>16,334,227</b>		<b>316.47</b>
Private Ownership			285.28
Federal Government Ownership			10.19
State/Local Government Ownership			21.00

Price for pine sawtimber is an average of sawtimber and chip-n-saw.

Sources: Brenner et al, 2016 (timber removals); Forest2Market, Inc., 2017 (prices).

Figure 7. Forest tree planting in Florida, 2010-15



Source: Florida Department of Agriculture and Consumer Services, Forest Service



## **Florida Forest Industry Establishments, Employment, and Exports**

The Forest Product Network publishes data on the locations and characteristics of primary and secondary wood product manufacturers in Florida. In 2016, there were 74 primary wood-using mills in Florida, including sawmills (32), pulp mills (6), mills for mulch (19), poles/posts (7), plywood, veneer or oriented strand board (2), wood chips (8), firewood or wood fuel pellets (2), shavings/animal bedding (2), and biomass fueled electricity generation plants (3), as summarized in Table 9 and mapped in Figure 8. Data from 2014 suggest that there were 363 secondary wood and paper product manufacturers in Florida, as mapped in Figure 9. Complete listings of primary wood-using mills and secondary wood product manufacturers are provided in Appendix B.

The forest-related industry sectors included in this analysis are listed in Table 10. Industry sectors are classified based on the primary product or service produced or technology used and are defined by the North American Industry Classification System (NAICS). Note that Table 10 displays sectors at various levels of detail and aggregation. Forest industry sectors broadly fall into four major groups: 113-Forestry and Logging, 321-Wood Product Manufacturing, 322-Paper Manufacturing, and Other Sectors. Forestry and logging is comprised of separate sectors for timber tract operations, forest nurseries and gathering of forest products, logging, and support activities for forestry. Wood product manufacturing includes primary wood products sectors for sawmills, wood preservation, veneer and plywood, engineered wood members and trusses, and reconstituted wood products (e.g. particleboard, oriented strandboard), plus secondary wood products sectors for windows and doors, cut stock, other millwork, wood containers, and all other wood products. Note that prefabricated wood buildings and mobile homes were not included in this analysis, although these sectors are classified within the wood products industry. Paper manufacturing includes pulp mills, paper mills, and paperboard mills for primary products from roundwood, plus converted paper products such as paperboard containers, paper bags, coated and treated paper, stationary (writing paper), sanitary paper, and all other converted paper products. Other sectors included in this analysis were allied manufacturers of gum and wood chemicals and sawmill, woodworking and paper machinery. In addition, lumber, plywood, and wood panel merchant wholesalers for distribution of forest products to retailers were included in the study.

The number of forest industry establishments, average employment and total wages paid in Florida in 2016, as published in the Quarterly Census of Employment and Wages by the Bureau of Labor Statistics, are summarized in Table 11. There were 1,849 forest-related employer establishments in the state, with total employment of 30,956 fulltime and part-time workers, and total wages paid of \$1,541 M. Note that in order to avoid breach of confidential information, employment and wages were not disclosed for sectors with a small number of firms. Values for these undisclosed sectors were estimated based on averages per firm or by deduction from parent industry sectors. The largest industry sectors in terms of employment were lumber and wood merchant wholesalers (5,412 jobs), truss manufacturing (3,163 jobs), paperboard container manufacturing (2,923 jobs), sawmills (2,107 jobs), support activities for forestry (1,837 jobs), wood container and pallet manufacturing (1,720 jobs), logging (1,688 jobs), and sanitary paper product manufacturing (1,648 jobs). The largest sectors in terms of wages paid were wood merchant wholesalers (\$297 M), paperboard container

manufacturing (\$173 M), truss manufacturing (\$131 M), and paperboard mills (\$105 M). The overall average wages paid per employee was \$51,109 (reflects fulltime and part-time employees).

Trends in employment in the Florida forest industry from 2001 through 2016 are charted in Figure 10 and Figure 11. Total employment in these sectors rose from 36,273 jobs in 2001 to a peak of 42,922 jobs in 2006, then declined during the Great Recession and its aftermath to 24,171 jobs in 2011, and has since steadily recovered to just under 30,000 jobs in 2016, representing a 17.3 percent decline in total forest industry employment over the 2001-16 period. Among specific sectors, employment increased for sawmills and wood preservation plants (+10.3%) and lumber/wood wholesalers (+2.9%), but declined for plywood/engineered wood mills (-33.0%), converted paper products (-26.0%), pulp/paper/paperboard mills (-19.4%), other wood products (-18.1%), and forestry/logging (-12.9%). Since 2011, forest industry employment increased by 24.0 percent, led by plywood/engineered wood (+132%), sawmills/wood preservation (+85%), and other wood product manufacturing (+62%). The number of forest industry employer firms (establishments) declined by 0.4 percent over the entire time period (2001-16) but has increased by 3.1 percent between 2011 and 2016.

Data on international export shipments of forest products shipped from Florida ports are available from the USA Trade Online database, published by the U.S. Census Bureau. Exports are published at both the state and port levels. State-level exports include all forest products originating in Florida that depart for an international destination, regardless of the port of exit. Port-level exports are not tracked by state of origin and do not include international shipments that originated in Florida but were shipped from a port outside of Florida, such as Savannah, GA, Brunswick, GA, and Mobile, AL. International exports of Florida forest products shipped from seaports and airports in 2016 are summarized in Table 12. The total value of all forest products exported was \$1.801 billion, including \$790 M (43.9%) for wood pulp, \$376 M (20.9%) for bulk paper/paperboard products, \$257 M (14.3%) for converted paper products, \$147 M (8.2%) for fuel wood and charcoal, \$135 M (7.5%) for solid wood products, \$58 M (3.2%) for forest chemicals, and \$38 M (2.1%) for composite wood products. The total weight of shipments by waterborne vessels was 3.649 M metric tons, and the total value of waterborne vessel shipments was \$1.510 B. The value of export shipments by major world region in 2016 are summarized in Table 13. The largest export destination region was South/Central America with \$520 M in export value, representing 28.9 percent of total exports, followed closely by Europe (\$480 M, 26.7%) and Asia (\$466 M, 25.9%), then by North America (\$298 M, 16.5%), while exports to Africa and Australia/Oceania were comparatively small.

Forest product exports through specific Florida seaports and airports in 2016 are summarized in Table 14. The largest seaports for value of export shipments were Jacksonville (\$337 M), Panama City (\$288 M), Miami (\$253 M), and Port Everglades-Ft. Lauderdale (\$249 M). Exports valued in excess of \$100 M were made for wood pulp from Jacksonville (\$219 M), fuel wood from Panama City (\$119 M), and converted paper products from Miami (\$106 M) and Port Everglades (\$104 M). Some high unit value shipments were also made from airports in Miami, Ft. Lauderdale, and Orlando. Forest product exports represent a significant share of overall commodity export values from Panama City, Fernandina and Pensacola. In terms of weight, the largest seaport

was Panama City (959,981 tonnes), due to a large volume of wood fuel pellets (696,923 tonnes), followed by Jacksonville, (872,929 tonnes) and Miami (771,845 tonnes).

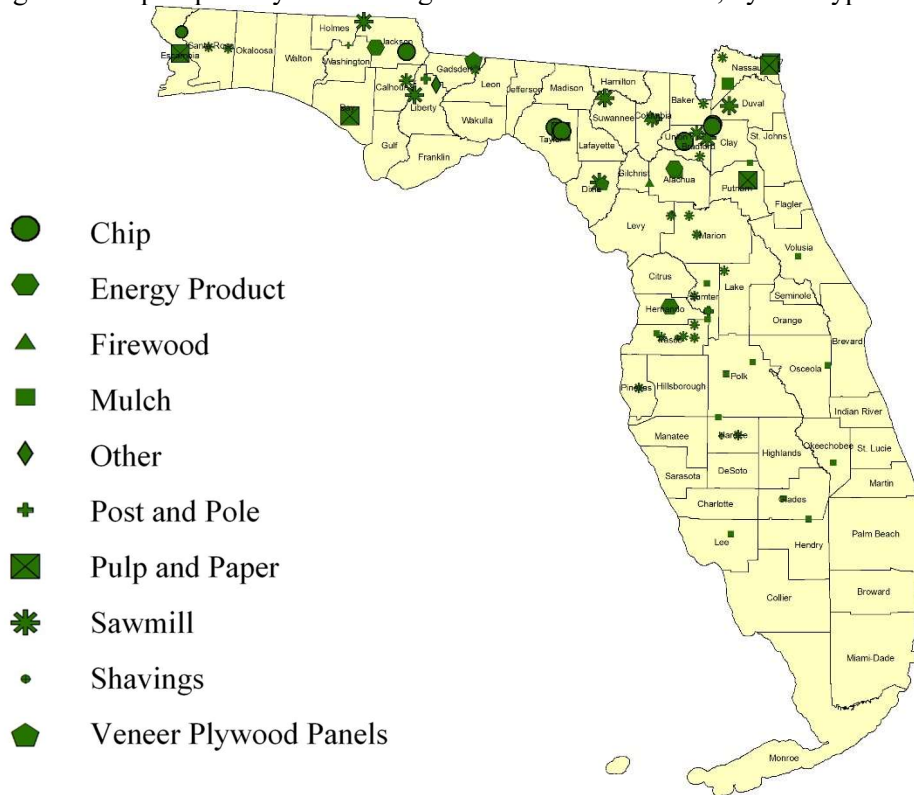
Trends in value of forest product exports from Florida ports by type of product and by world region are shown in Figure 12 and Figure 13. Over the period 2002-16, exports of all forest commodities increased by 2.2 fold in nominal dollar terms, or an average of 8.8 percent annually. Growth in exports was very strong for fuel wood and charcoal (60x), wood pulp (2.3x) and bulk paper/paperboard products (3.3x) (Figure 12). Exports during 2013-16 increased to Europe and Asia, but declined to South/Central America, and remained steady to North America, Africa and Australia/Oceania (Figure 13).

Table 9. Summary of wood-using mills in Florida, by size class, 2016

Mill Type	Large	Medium	Small	Total All Sizes
Chip	3			3
Chip/Sawmill	4	1		5
Energy Product	3			3
Firewood		1	1	2
Mulch		1	15	16
Mulch/Post Pole			1	1
Mulch/Sawmill		1		1
Post Pole		3	2	5
Pulp Paper	6			6
Sawmill	5	3	17	25
Sawmill/Mulch	1			1
Sawmill/Post Pole		1		1
Shavings			2	2
Veneer Plywood Panels	1	1		2
Other	1			1
<b>Total All Types</b>	<b><u>24</u></b>	<b><u>12</u></b>	<b><u>38</u></b>	<b><u>74</u></b>

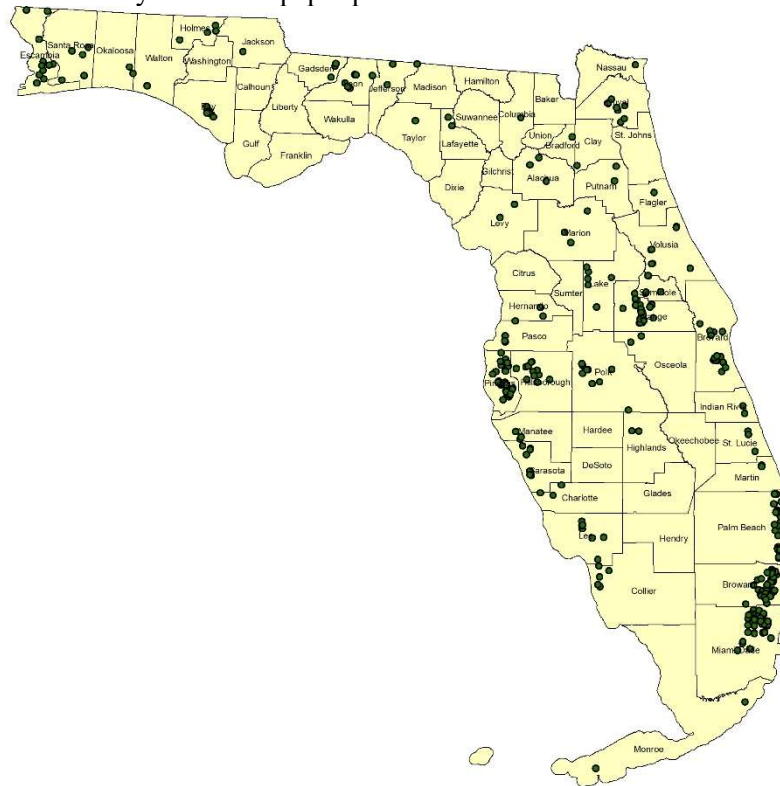
Source: Forest Products Network (2016)

Figure 8. Map of primary wood-using mills in Florida in 2016, by mill type and size



Note: Size of symbol indicates size of mill (large, medium, small). Source: Forest Products Network (2016)

Figure 9. Map of secondary wood and paper product manufacturers in Florida in 2014



Source: Forest Products Network (2016)

Table 10. North American Industry Classification System (NAICS) sectors evaluated for the Florida forest industry

---

113	Forestry and Logging
1131	Timber Tract Operations
1132	Forest Nurseries and Gathering of Forest Products
1133	Logging
1153	Support Activities for Forestry
321	Wood Product Manufacturing
3211	Sawmills and Wood Preservation
321113	Sawmills
321114	Wood Preservation
3212	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
322	Paper Manufacturing
3221	Pulp, Paper, and Paperboard Mills
32211	Pulp Mills
32212	Paper 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
322219	Other Paperboard Container Manufacturing
32222	Paper Bag and Coated and Treated Paper Manufacturing
32223	Stationery Product Manufacturing
32229	Other Converted Paper Product Manufacturing
322291	Sanitary Paper Product Manufacturing
322299	All Other Converted Paper Product Manufacturing
Other Sectors	
325194	Cyclic Crude, Intermediate, and Gum and Wood Chemical Manufacturing
333243	Sawmill, Woodworking, and Paper Machinery Manufacturing
423310	Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers
221117	Biomass Electric Power Generation

---

Source: U.S. Commerce Department, NAICS lookup tool.

Table 11. Number of establishments, average employment and total wages paid in Florida forest industry sectors, 2016

NAICS	Industry Title	Average Number Establishments	Average Employment (Jobs)	Total Wages Paid (M\$)
1131	Timber tract operations	51	307	25.8
1132	Forest nursery and gathering forest products	42	367	10.4
1133	Logging	205	1,688	73.1
1153	Support activities for forestry	163	1,837	65.8
321113	Sawmills	63	2,107	89.5
321114	Wood preservation	15	411	17.3
321211	Hardwood veneer and plywood manufacturing	14	23	1.2
321212	Softwood veneer and plywood manufacturing*	4	483	31.7
321213	Engineered wood member manufacturing	7	56	2.1
321214	Truss manufacturing	69	3,163	130.5
321219	Reconstituted wood product manufacturing	7	174	20.2
321911	Wood window and door manufacturing	77	1,144	47.2
321912	Cut stock, resawing lumber, and planing	14	115	3.7
321918	Other millwork, including flooring	126	1,565	66.5
32192	Wood container and pallet manufacturing	101	1,720	56.6
321999	All other miscellaneous wood product mfg.	121	760	32.8
32211	Pulp mills*	2	275	23.4
32212	Paper mills	17	1,122	82.3
32213	Paperboard mills*	9	1,239	105.2
32221	Paperboard container manufacturing	85	2,923	172.8
32222	Paper bag and coated and treated paper mfg.	43	803	42.9
32223	Stationery product manufacturing	22	402	26.0
322291	Sanitary paper product manufacturing	24	1,648	98.1
322299	All other converted paper product mfg.	31	305	13.6
325194	Cyclic crude, and gum and wood chemical mfg. (forest chemicals)*	9	699	
333243	Sawmill, woodworking, and paper machinery mfg.	13	95	5.0
423310	Lumber and wood merchant wholesalers	523	5,412	297.0
221117	Biomass Electric Power Generation*	3	114	
Total		<u>1,849</u>	<u>30,956</u>	<u>1,541</u>

Asterisks indicate sectors for which employment and wages were estimated from other sources for nondisclosed data. Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages.

Figure 10. Trend in forest industry employment, 2001-16

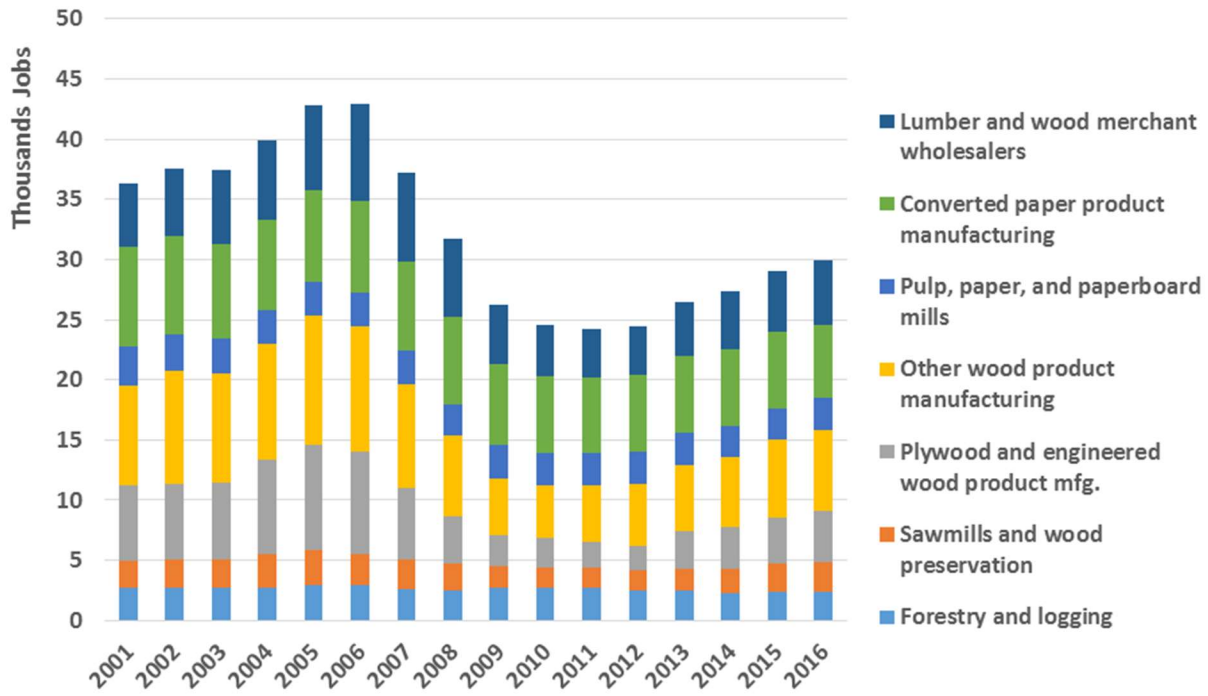
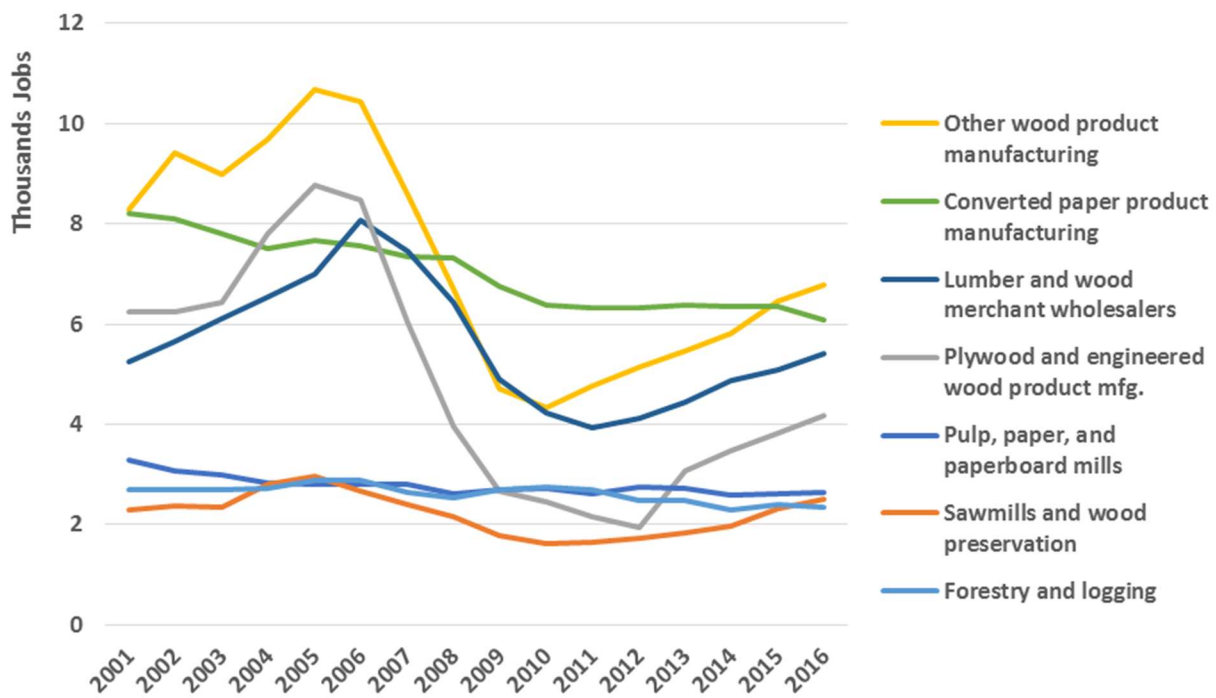


Figure 11. Trend in forest industry employment, by industry 2001-16



Source: Bureau of Labor Statistics

Table 12. Value and weight of forest product exports from Florida, 2016

Commodity Group / Commodity Code	Value (M\$)	Vessel Weight (1000 MT)	Vessel Value (M\$)
<b>Solid Wood Products</b>	<b>135.0</b>	<b>299</b>	<b>130.1</b>
4403 Wood in the rough, stripped or not of sapwood	17.7	105	17.4
4404 Hoopwood; split poles; pickets and stakes	0.4	0	0.3
4405 Wood wool (excelsior); wood flour	0.1	0	0.1
4406 Railway or tramway sleepers (cross-ties) of wood	0.0	0	0.0
4407 Wood sawn or chipped length, sliced	96.7	173	94.3
4408 Veneer sheets, not over 6 mm thick	3.2	3	2.7
4409 Wood, continuously shaped (tongued, grooved)	17.0	19	15.3
<b>Composite Wood Products</b>	<b>37.7</b>	<b>34</b>	<b>29.8</b>
4410 Particle board & similar board of wood	7.5	1	0.7
4411 Fiberboard of wood or other ligneous materials	1.1	1	0.8
4412 Plywood, veneered panels & similar laminated wood	26.4	30	26.2
4413 Densified wood blocks/plates/strips/profile shapes	0.5	0	0.4
4415 Packings, wood; pallets, collars of wood	2.2	3	1.7
<b>Fuel Wood And Charcoal</b>	<b>147.1</b>	<b>1,066</b>	<b>147.0</b>
4401 Fuel wood in logs, wood in chips	146.6	1,066	146.6
4402 Wood charcoal, whether or not agglomerated	0.5	1	0.4
<b>Wood Pulp</b>	<b>789.8</b>	<b>1,610</b>	<b>673.3</b>
4701 Mechanical wood pulp	0.0	0	0.0
4702 Chemical wood pulp, dissolving grades	231.3	180	219.3
4703 Chemical wood pulp, soda or sulfate, not dissolv. grades	409.2	437	311.4
4704 Chemical wood pulp, sulfite, not dissolving grades	0.2	0	0.2
4705 Wood pulp from mechanical/chemical pulp processes	0.0	0	0.0
4706 Pulps of fibers from recovered paper, other cell. mat'l	2.8	3	2.8
4707 Waste and scrap of paper or paperboard	146.3	989	139.7
<b>Bulk Paper/Paperboard Products</b>	<b>376.2</b>	<b>532</b>	<b>312.0</b>
4801 Newsprint, in rolls or sheets	4.2	2	0.8
4802 Paper, uncoated, for writing, rolls; handmade paper	121.5	101	97.0
4803 Toilet, household/sanitary stock paper roll or sheets	10.7	5	9.9
4804 Kraft paper & paperboard, uncoated nesoi, rolls	219.5	401	189.0
4805 Paper & paperboard, uncoated, nesoi, rolls or sheets	15.1	20	11.8
4806 Veg parchment, greaseproof papers, rolls	1.1	0	1.1
4807 Composite paper & paperboard, no surf. coat	2.0	0	0.2
4808 Paper and paperboard, corrugated, rolls	2.3	2	2.1
<b>Converted Paper Products</b>	<b>257.1</b>	<b>78</b>	<b>171.7</b>
4809 Paper, carbon, self-copy, rolls	8.3	4	7.9
4810 Paper & paperboard, coated with kaolin	48.1	16	15.0
4811 Paper, paperboard, wad, coated, nesoi	34.3	13	21.2
4812 Filter blocks, slabs and plates, of paper pulp	0.2	0	0.1
4813 Cigarette paper	2.2	1	2.2
4814 Wallpaper, window transparencies of paper	4.3	0	3.1
4815 Floor coverings, paper/paperboard base	0.0	0	0.0
4816 Paper, carbon, self-copy, boxed or not	7.4	2	6.5
4817 Envelopes, postcards & boxes of stationary	5.5	1	4.7
4818 Toilet paper, towels, household/hospital art. of paper	14.8	5	14.0



Commodity Group / Commodity Code	Value (M\$)	Vessel Weight (1000 MT)	Vessel Value (M\$)
4819 Cartons paper; office box files	72.7	24	53.4
4821 Labels of paper or paperboard, printed or not	18.9	1	10.8
4822 Bobbins, spools etc. of pap pulp, paper & paperboard	0.2	0	0.2
4823 Paper, paperboard, cellulosic wad to size & arts nesoi	40.3	11	32.7
<b>Forest Chemicals</b>	<b>57.6</b>	<b>30</b>	<b>46.2</b>
3803 Tall oil, whether or not refined	4.2	5	3.4
3804 Residual lyes from wood pulp mfr (except tall oil)	0.2	0	0.2
3805 Turpentine, crude dipentene, pine oil	35.0	22	34.8
3806 Rosin & resin acids, rosin spirit, run gum	18.2	4	7.9
3807 Wood tar, vegetable pitch & similar preps	0.0	0	0.0
<b>Total</b>	<b><u>1,800.6</u></b>	<b><u>3,649</u></b>	<b><u>1,510.1</u></b>

Nesoi = not elsewhere specified or indicated.

Source: USDOC-Census Bureau.

Table 13. Value of forest product exports from Florida to world regions by major commodity group, 2016

Commodity Group	Africa	Asia	Australia and Oceania	Europe	North America	South- Central America	Total All Regions
	----- Million Dollars -----						
Solid Wood Products	0.1	20.6	0.0	1.6	7.8	104.9	135.0
Composite Wood Products	0.0	1.3	0.0	2.0	9.1	25.4	37.7
Fuel Wood and Charcoal	0.0	0.3	0.0	146.0	0.1	0.7	147.1
Wood Pulp	24.1	394.1	0.4	215.0	131.5	24.6	789.8
Bulk Paper and Paperboard Products	6.1	28.3	0.2	84.7	63.9	193.0	376.2
Converted Paper Products	0.5	9.8	0.8	5.2	74.0	166.8	257.1
Forest Chemicals	3.7	11.8	0.1	25.6	11.4	5.0	57.6
Total All Commodities	<u>34.5</u>	<u>466.2</u>	<u>1.5</u>	<u>480.1</u>	<u>298.0</u>	<u>520.3</u>	<u>1,800.6</u>

Source: USDOC-Census Bureau

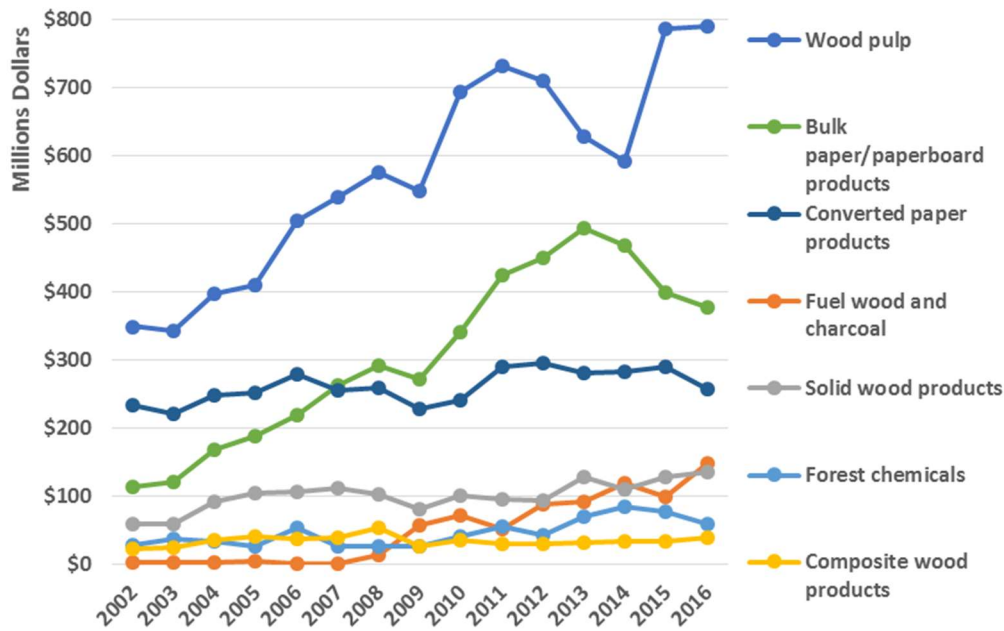
Table 14. Value and weight of forest product exports from specific Florida ports, 2016

Florida Port	Solid Wood Products	Composite Wood Products	Fuel Wood and Charcoal	Wood Pulp	Bulk Paper Products	Converted Paper Products	Forest Chemicals	Total	Weight (Tonnes)	Percent of Value All Commodities
----- Million dollars -----										
Jacksonville	35.09	5.55	16.82	219.37	22.78	29.61	7.60	336.81	872,979	5.6%
Panama City	3.24	3.80	118.83	76.65	79.56	6.10	0.23	288.41	959,981	58.0%
Miami	11.13	3.63	0.27	93.98	37.27	106.24	0.91	253.42	771,845	2.7%
Port Everglades	40.86	9.07	0.43	4.84	88.76	104.08	1.12	249.16	235,906	2.1%
Fernandina	12.66	1.33	0.00	0.00	47.51	8.18	0.00	69.67	122,839	47.3%
West Palm Beach	28.11	7.47	0.16	0.00	3.94	15.30	0.02	55.00	60,521	3.0%
Miami Airport	1.45	1.72	0.02	0.27	1.70	28.16	0.18	33.50	6,240	0.1%
Tampa	0.00	0.30	0.00	16.64	0.48	4.80	0.05	22.27	112,409	1.1%
Port Manatee	0.00	0.00	0.00	2.65	13.34	0.04	0.00	16.03	39,860	15.0%
Pensacola	5.75	0.03	0.00	0.00	8.13	0.00	0.00	13.91	28,468	36.2%
Orlando	0.67	0.00	0.00	0.00	0.00	0.24	0.00	0.91	144	0.0%
Ft. Lauderdale Airport	0.00	0.00	0.00	0.00	0.01	0.08	0.00	0.10	20	0.0%
Key West	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.07	21	0.2%
Fort Pierce	0.01	0.02	0.00	0.01	0.00	0.00	0.00	0.04	21	0.5%
Orlando Executive Airport	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.02	2	0.1%
Orlando-Sanford Airport	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	8	0.0%
St. Petersburg	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	12	1.8%
Port Canaveral	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0	0.0%
Total	<u>138.97</u>	<u>32.94</u>	<u>136.53</u>	<u>414.42</u>	<u>303.46</u>	<u>302.93</u>	<u>10.11</u>	<u>1,339.35</u>	<u>3,211,274</u>	

Source: USDOC-Census Bureau

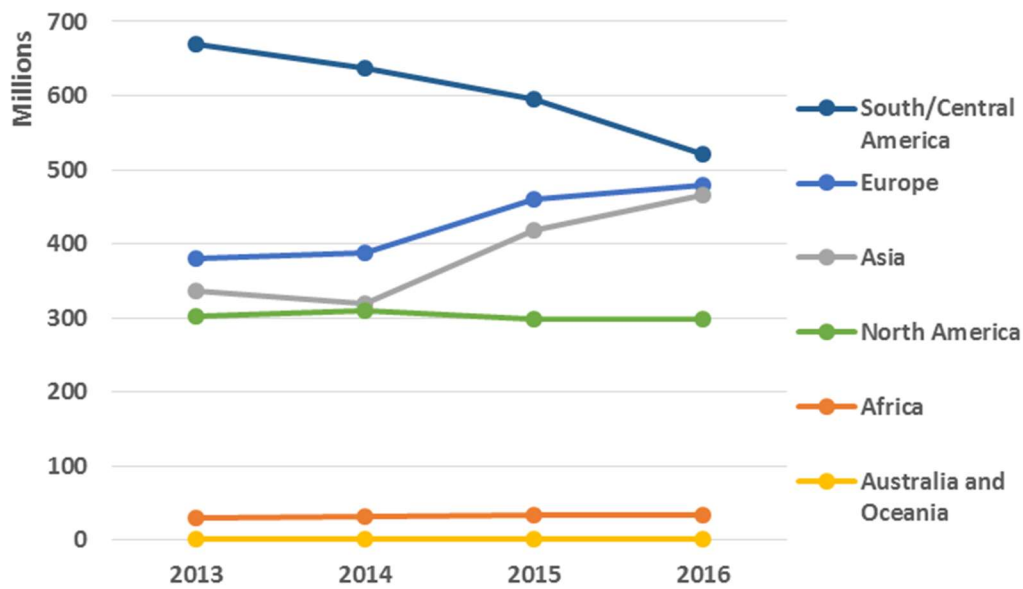
Note: Port-level exports are not tracked by state of origin. These values include international shipments that originated in another state but ultimately departed from a Florida port but do not include international shipments that originated in Florida but were ultimately shipped from a port outside of Florida, such as Savannah, GA, Brunswick, GA, or Mobile, AL. The total value of forest product exports departing from Florida ports, reported in Table 14, is less than the total value of forest product exports originating in Florida, reported in Tables 12 and 13, suggesting that the value of exports that originated in Florida and were ultimately shipped from a port outside of Florida outweigh the value of exports that originated in a state other than Florida and were shipped out of a Florida port.

Figure 12. Trend in value of Florida forest product exports by type of product, 2002-16



Source: USDOC-Census Bureau

Figure 13. Trend in value of Florida forest product exports by world region, 2013-16



Source: USDOC-Census Bureau

## Forest Recreation

Florida has 37 State Forests spanning 1.07 million acres, 54 Wildlife Management Areas comprised of 1.43 million acres, and three National Forests with 1.20 million acres (Table 25). The three National Forests in north and central Florida (Apalachicola, Osceola, Ocala) have 118 developed recreation sites, 1,434 miles of hiking trails, including 186 miles of the Florida National Scenic Trail (FNST), one of only 11 National Scenic Trails in the U.S. Since 2007, the FNST has received an average of 350,000 annual visitors (FNST Annual Assessment, 2015). Data on visitation to Florida's National Forests, State Forests, and Wildlife Management Areas were collected from the U.S. Department of Agriculture's Forest Service, the Florida Forest Service, and the Florida Fish and Wildlife Conservation Commission, respectively. In 2015, the State and National Forests and Wildlife Management Areas in Florida had a combined total of 6.93 million visitor-days (one visitor for one day) as shown in Table 15.

Table 15. Florida public forestland area and visitation in 2015

Public Forestland (Managing Agency)	Acres	Visitor-days
National Forests (USDA-Forest Service)	1,197,292	2,104,000
State Forests (Florida Forest Service)	1,069,041	2,083,753
Wildlife Management Areas (Florida Fish and Wildlife Conservation Commission)	1,432,604	2,741,533
Total	<u>3,698,937</u>	<u>6,929,286</u>

Sources: Florida Forest Service, Florida Fish and Wildlife Conservation Commission, USDA-Forest Service.

## Methodology for Regional Economic Contribution Analysis

This economic contribution analysis for the Florida forest industry was conducted using the IMPLAN<sup>®</sup> regional economic modeling system and associated databases (IMPLAN<sup>®</sup> Group, LLC). This system is used for Input-Output and Social Accounting Matrix analyses (Miller and Blair, 2007). Regional economic models enable the estimation of economic multipliers that measure the total changes in an economy resulting from a given change in direct output or employment. There are three components of multipliers: direct, indirect, and induced. Direct effects represent the initial change in the industry in question, indirect effects represent changes in inter-industry transactions as supplying industries respond to changes in demands from the directly affected industries, and induced effects reflect changes in local spending that result from income changes in employee and proprietor households and local, state and federal governments. The Social Accounting Matrix (SAM) multipliers estimated in IMPLAN<sup>®</sup> for this analysis account for capital investment, taxes, and transfer payments such as social security, welfare, retirement pensions, and savings by households.

Total economic contributions represent the sum of direct, indirect, and induced contributions and are measured by several metrics, including employment (fulltime and part-time jobs), labor income (wages, salaries, benefits, business owner income), value added, industry output (sales revenues) and taxes paid. Value added is equivalent to Gross State Product or Gross Domestic Product (GDP) at the national level and is generally considered a better measure of economic activity because it nets out the value of inter-industry purchases. A glossary of basic definitions of the technical terms used in this report are provided in Appendix A.

Regional economic models can be constructed with IMPLAN<sup>®</sup> for a single county, groups of contiguous counties, an entire state, or a multi-state region. In this case, the study region was defined as the state of Florida. Data from IMPLAN<sup>®</sup> representing the economic structure used to model contributions in this report represent the Florida economy in 2015. Information used in the model is specific to the state of Florida for industry output, employment, income, and trade, while regional and national averages are used to estimate transactions between industries. The model was constructed with social accounts for households, governments (state/local and federal), and capital investment internalized. This analysis used the tradeflows version of the IMPLAN<sup>®</sup> model that was customized to avoid double-counting of direct impacts by zeroing the Regional Purchase Coefficient for each industry's own sector, consistent with best practice for economic contribution analysis (Henderson et al., 2017; Joshi et al. 2017).

The forest industry sectors used in this analysis are described according to the North American Industry Classification System (NAICS) code corresponding to each IMPLAN<sup>®</sup> industry sector, as shown in Table 16. Inputs to the IMPLAN<sup>®</sup> model for sector-level analysis of the Florida forest industry are summarized in Table 17. For most industry sectors, the annual average of direct employment in 2016 from the Quarterly Census of Employment and Wages was entered into the model. Stumpage values were used for private, state, and federal forestry production sectors. For the pulp mill and logging sectors, employment information from the IMPLAN<sup>®</sup> database (2015) were used. The number of employees in wood and gum chemicals and biomass electricity

generation were taken from the Hoovers/Dunn and Bradstreet database. The IMPLAN<sup>®</sup> software automatically imputed industry sales for the employment numbers entered based on the industry average output per employee ratios. The software also applied industry-specific deflators to express output in model year (2015) values, then reinflated the resulting impact estimates to express in current year (2016) dollars. For the Wholesale Trade sector used to represent lumber and wood wholesalers, a trade margin of 17.7 percent was applied to the imputed industry sales. For recreational visitor retail purchases, trade margins were applied to purchases at gasoline stores and sporting goods stores. Only the export share of industry output was considered as new final demand for which we account for the indirect and induced contributions (right column of Table 17), in keeping with best practice for economic contribution analysis (Watson et al, 2007).

Impacts were calculated for each major industry group: forestry production (timber tracts, logging, support activities), primary wood products (sawmills, wood preservation, plywood/veneer, engineered wood, reconstituted wood), secondary wood products (cut stock, millwork, wood containers, windows/doors, pallets), primary paper products (pulp, paper, paperboard), converted paper products (paperboard containers, bags, stationary, sanitary), forest chemical products manufacturing, sawmill/woodworking/paper machinery manufacturing, wholesale trade in lumber and wood products, biomass electric power generation, and forest-based nonresident visitor spending. State-level results were allocated to individual counties in proportion to timber removals for forestry production and in proportion to direct employment in all other industry groups. Results for individual Florida counties were aggregated to analyze results for the nine functional economic regions in Florida, shown in Figure 14, as defined by the U.S. Department of Commerce's Bureau of Economic Analysis (Johnson and Kort, 2004). County level results were also aggregated to analyze results for categories along the Urban-Rural Continuum, shown in Figure 15, as defined by the U.S. Department of Agriculture's Economic Research Service.

Table 16. Description of forest industry and forest-based recreation sectors in NAICS and IMPLAN<sup>®</sup>

IMPLAN <sup>®</sup> Code	IMPLAN <sup>®</sup> Description	NAICS Code(s)	NAICS Industry Sector Description (2017)
15	Forestry, forest products, and timber tract production	1131-2	Establishments primarily engaged in the operation of timber tracts for the purposes of selling standing timber, growing trees for reforestation and/or gathering forest products, such as gums, barks, balsam needles, rhizomes, fibers, Spanish moss, ginseng, and truffles.
16	Commercial logging	1133	Establishments primarily engaged in cutting timber, cutting and transporting timber, and/or producing wood chips in the field.
19	Support activities for agriculture and forestry	11531	Establishments primarily engaged in performing particular support activities related to timber production, wood technology, forestry economics and marketing, and forest protection. These establishments may provide support activities for forestry, such as estimating timber, forest firefighting, forest pest control, treating burned forests from the air for reforestation or on an emergency basis, and consulting on wood attributes and reforestation.
47	Biomass electric power generation	221117	Establishments primarily engaged in operating biomass electric power generation facilities. These facilities use biomass (e.g., wood, waste, alcohol fuels) to produce electric energy. The electric energy produced in these establishments is provided to electric power transmission systems or to electric power distribution systems.
134	Sawmills	321113	Establishments primarily engaged in sawing dimension lumber, boards, beams, timbers, poles, ties, shingles, shakes, siding, and wood chips from logs or bolts. Sawmills may plane the rough lumber that they make with a planing machine to achieve smoothness and uniformity of size.
135	Wood preservation	321114	Establishments primarily engaged in treating wood sawed, planed, or shaped in other establishments with creosote or other preservatives, such as alkaline copper quat, copper azole, and sodium borates, to prevent decay and to protect against fire and insects and/or sawing round wood poles, pilings, and posts and treating them with preservatives.
136	Veneer and plywood manufacturing	321211-2	Establishments primarily engaged in manufacturing hardwood veneer and/or hardwood plywood and manufacturing softwood veneer and/or softwood plywood.
137	Engineered wood member and truss manufacturing	321213-4	Establishments primarily engaged in manufacturing fabricated or laminated wood arches and/or other fabricated or laminated wood structural members and manufacturing laminated or fabricated wood roof and floor trusses.
138	Reconstituted wood product manufacturing	321219	Establishments primarily engaged in manufacturing reconstituted wood sheets and boards.
139	Wood windows and door manufacturing	321911	Establishments primarily engaged in manufacturing window and door units, sash, window and door frames, and doors from wood or wood clad with metal or plastics.
140	Cut stock, resawing lumber, and planing	321912	Establishments primarily engaged in manufacturing dimension lumber from purchased lumber, manufacturing dimension stock (i.e., shapes) or cut stock, resawing the output of sawmills, and planing purchased lumber. These establishments generally use woodworking machinery, such as jointers, planers, lathes, and routers to shape wood.
141	Other millwork, including flooring	321918	Establishments primarily engaged in manufacturing millwork (except wood windows, wood doors, and cut stock). Examples of manufactured millwork produced by these establishments include: clear and finger joint wood moldings, decorative wood moldings, ornamental woodwork, stairwork, wood flooring, and wood shutters.

IMPLAN <sup>®</sup> Code	IMPLAN <sup>®</sup> Description	NAICS Code(s)	NAICS Industry Sector Description (2017)
142	Wood container and pallet manufacturing	321920	Establishments primarily engaged in manufacturing wood pallets, wood box shooks, wood boxes, other wood containers, and wood parts for pallets and containers.
145	All other miscellaneous wood product manufacturing	321999	Establishments primarily engaged in manufacturing wood products (except establishments operating sawmills and preservation facilities; establishments manufacturing veneer, engineered wood products, millwork, wood containers, pallets, and wood container parts; and establishments making manufactured homes (i.e., mobile homes) and prefabricated buildings and components).
146	Pulp mills	322110	Establishments primarily engaged in manufacturing pulp without manufacturing paper or paperboard. The pulp is made by separating the cellulose fibers from the other impurities in wood or other materials, such as used or recycled rags, linters, scrap paper, and straw.
147	Paper mills	322121-2	Establishments primarily engaged in manufacturing paper (including newsprint and uncoated groundwood paper) from pulp. These establishments may manufacture or purchase pulp. In addition, the establishments may also convert the paper they make.
148	Paperboard mills	322130	Establishments primarily engaged in manufacturing paperboard (e.g., can/drum stock, container board, corrugating medium, folding carton stock, linerboard, tube) from pulp. These establishments may manufacture or purchase pulp. In addition, the establishments may also convert the paperboard they make.
149	Paperboard container manufacturing	322211-2 and 322219	Establishments primarily engaged in laminating purchased paper or paperboard into corrugated or solid fiber boxes and related products, such as pads, partitions, pallets, and corrugated paper and converting paperboard (except corrugated) into folding paperboard boxes and containers, without manufacturing paper and paperboard.
150	Paper bag and coated and treated paper manufacturing	322220	Establishments primarily engaged in cutting and coating paper and paperboard; cutting and laminating paper, paperboard, and other flexible materials (except plastics film to plastics film); manufacturing bags, multiwall bags, sacks of paper, metal foil, coated paper, laminates, or coated combinations of paper and foil with plastics film; manufacturing laminated aluminum and other converted metal foils from purchased foils; and surface coating paper or paperboard.
151	Stationery product manufacturing	322230	Establishments primarily engaged in converting paper or paperboard into products used for writing, filing, art work, and similar applications.
152	Sanitary paper product manufacturing	322291	Establishments primarily engaged in converting purchased sanitary paper stock or wadding into sanitary paper products, such as facial tissues, handkerchiefs, table napkins, toilet paper, towels, disposable diapers, sanitary napkins, and tampons.
153	All other converted paper product manufacturing	322299	Establishments primarily engaged in converting paper or paperboard into products (except containers, bags, coated and treated paper, stationery products, and sanitary paper products) or converting pulp into pulp products, such as egg cartons, food trays, and other food containers from molded pulp.
165	Other basic organic chemical manufacturing (forest chemicals)	325193-4 and 325199	Establishments primarily engaged in manufacturing nonpotable ethyl alcohol, distilling wood or gum into products, such as tall oil and wood distillates, distilling coal tars, manufacturing wood or gum chemicals, such as naval stores, natural tanning materials, charcoal briquettes, and charcoal (except activated), manufacturing cyclic crudes or cyclic intermediates (i.e., hydrocarbons, except aromatic petrochemicals) from refined petroleum or natural gas, and manufacturing other basic organic chemical products (except aromatic petrochemicals, industrial gases, synthetic organic dyes and pigments, gum and wood chemicals, cyclic crudes and intermediates, and ethyl alcohol).



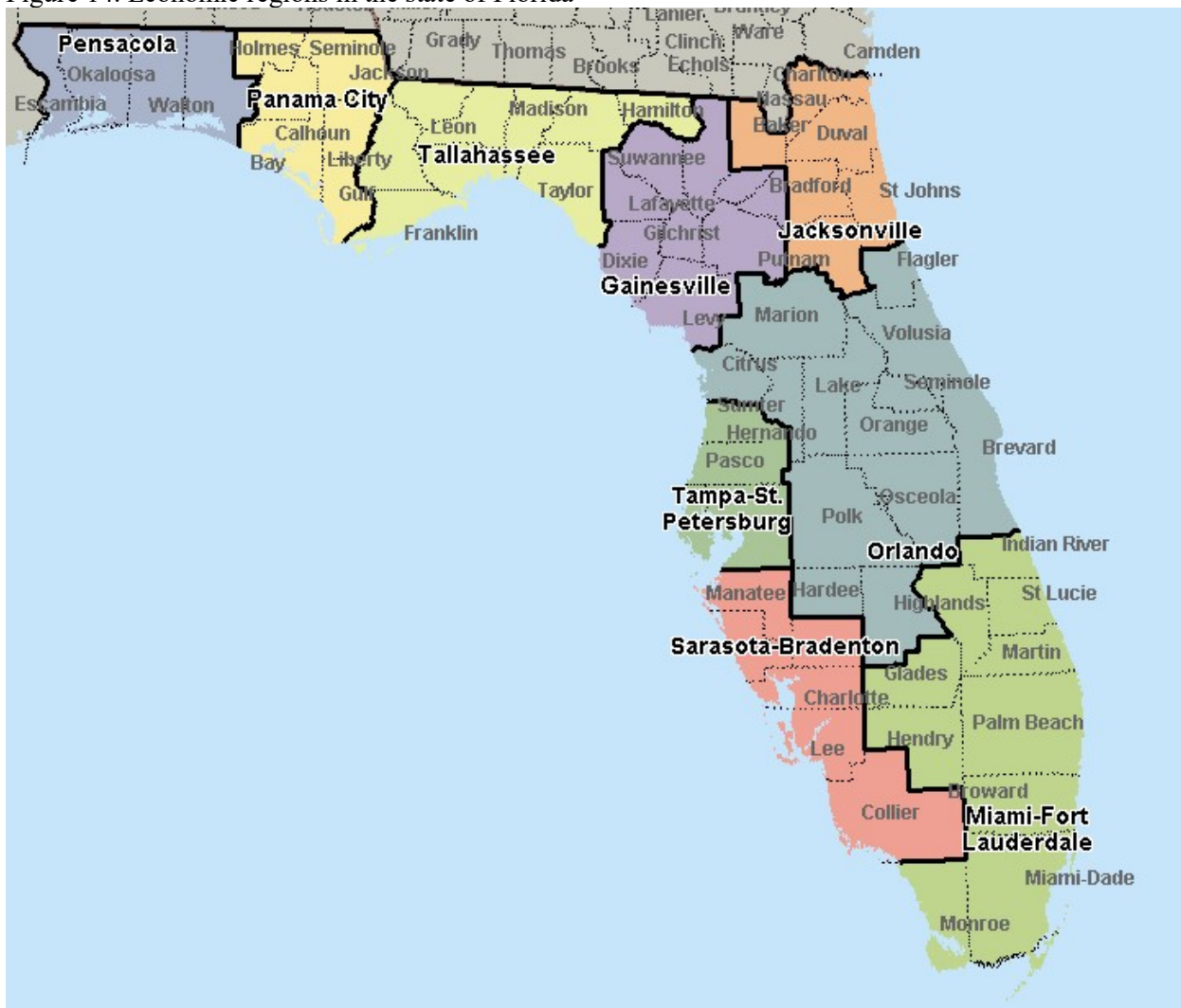
IMPLAN <sup>®</sup> Code	IMPLAN <sup>®</sup> Description	NAICS Code(s)	NAICS Industry Sector Description (2017)
269	Sawmill, woodworking, and paper machinery	333243	Establishments primarily engaged in manufacturing sawmill and woodworking machinery (except handheld), such as circular and band sawing equipment, planing machinery, and sanding machinery, and/or manufacturing paper industry machinery for making paper and paper products, such as pulp making machinery, paper and paperboard making machinery, and paper and paperboard converting machinery.
395	Wholesale trade	42331	Establishments primarily engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. The merchandise described in this sector includes lumber; plywood; reconstituted wood fiber products; wood fencing; doors and windows and their frames (all materials); wood roofing and siding; and/or other wood or metal millwork.
402	Retail – Gasoline stores	447	Establishments primarily engaged in retailing automotive fuels (e.g., gasoline, diesel fuel, gasohol, alternative fuels) and automotive oils or retailing these products in combination with convenience store items. These establishments have specialized equipment for the storage and dispensing of automotive fuels.
404	Retail – Sporting goods, hobby, musical instrument and book stores	451	Establishments primarily engaged in retailing and providing expertise on the use of sporting equipment or other specific leisure activities, such as needlework and musical instruments. Book stores are also included in this subsector.
496	Other amusement and recreation industries	71391-3, 71399	Establishments primarily engaged in operating golf courses (except miniature); operating golf courses, along with dining facilities and other recreational facilities that are known as country clubs; operating docking and/or storage facilities for pleasure craft owners, with or without one or more related activities, such as retailing fuel and marine supplies; and repairing, maintaining, or renting pleasure boats; and providing recreational and amusement services.
499	Hotels and motels, including casino hotels	72111-2	Establishments primarily engaged in providing short-term lodging in facilities known as hotels, motor hotels, resort hotels, motels, and casino hotels. The establishments in this industry may offer food and beverage services, recreational services, conference rooms and convention services, laundry services, parking, table wagering games, and other gambling activities, such as slot machines and sports betting, and other services.
501	Full-service restaurants	722511	Establishments primarily engaged in providing food services to patrons who order and are served while seated (i.e., waiter/waitress service) and pay after eating. These establishments may provide this type of food service to patrons in combination with selling alcoholic beverages, providing carryout services, or presenting live nontheatrical entertainment.
520	Other federal government enterprises	N/A	N/A
523	Other state government enterprises	N/A	N/A

Table 17. Inputs to the *IMPLAN*® model for economic contribution analysis of the forest industry and forest-based recreation in Florida

Industry Group	Activity	IMPLAN® Industry Sector	Industry Sales	Employment (direct jobs)	Event Year	Output Deflator	Export Percentage
Forestry Production	Private landowner timber sales	15 Forestry, forest products, and timber tract production	\$285,284,000	2,890	2014	0.996	89.0%
	Logging	16 Commercial logging	\$268,900,000	3,492	2016	1.003	21.6%
	Support activities for forestry (private and public)	19 Support activities for agriculture and forestry	\$130,234,328	1,837	2016	1.008	56.1%
	State-local government forest timber sales	520 Other federal government enterprises	\$10,189,000	50	2014	0.988	6.0%
	Federal government forestry timber sales	523 Other state government enterprises	\$20,997,000	92	2014	0.992	20.7%
Primary Wood Product Manufacturing	Sawmills	134 Sawmills	\$588,356,352	2,107	2016	1.004	33.7%
	Wood preservation	135 Wood preservation	\$209,765,712	411	2016	1.004	22.2%
	Veneer and plywood manufacturing	136 Veneer and plywood manufacturing	\$144,458,032	506	2016	1.007	32.5%
	Engineered wood member and truss manufacturing	137 Engineered wood member and truss manufacturing	\$762,579,968	3,568	2016	1.007	60.2%
	Reconstituted wood product manufacturing	138 Reconstituted wood product manufacturing	\$80,782,256	174	2016	1.007	33.1%
Secondary Wood Product Manufacturing	Wood windows and door manufacturing	139 Wood windows and door manufacturing	\$243,779,936	1,144	2016	1.007	1.7%
	Cut stock, resawing lumber, and planing	140 Cut stock, resawing lumber, and planing	\$28,464,030	115	2016	1.007	1.7%
	Other millwork, including flooring	141 Other millwork, including flooring	\$334,252,288	1,565	2016	1.007	11.8%
	Wood container and pallet manufacturing	142 Wood container and pallet manufacturing	\$240,831,840	1,720	2016	1.007	16.8%
	All other miscellaneous wood product manufacturing	145 All other miscellaneous wood product manufacturing	\$137,275,888	760	2016	1.007	28.6%
Primary Paper Product Manufacturing	Pulp mills	146 Pulp mills	\$675,545,152	861	2016	1.008	96.5%
	Paper mills	147 Paper mills	\$955,850,752	1,122	2016	1.008	100.0%
	Paperboard mills	148 Paperboard mills	\$1,130,173,824	1,239	2016	1.008	91.5%
Converted Paper Product Manufacturing	Paperboard container manufacturing	149 Paperboard container manufacturing	\$1,383,071,744	2,923	2016	1.008	25.1%
	Paper bag and coated and treated paper manufacturing	150 Paper bag and coated and treated paper manufacturing	\$394,669,120	803	2016	1.008	68.2%
	Stationery product manufacturing	151 Stationery product manufacturing	\$171,259,136	402	2016	1.008	48.7%
	Sanitary paper product manufacturing	152 Sanitary paper product manufacturing	\$1,399,252,736	1,648	2016	1.008	47.9%
	All other converted paper product manufacturing	153 All other converted paper product manufacturing	\$104,904,488	305	2016	1.008	75.7%
Forest chemicals production		165 Other basic organic chemical manufacturing	\$1,325,495,296	699	2016	1.015	97.0%
Sawmill, Woodworking and Paper Machinery Manufacturing (allied)		269 Sawmill, woodworking, and paper machinery	\$23,261,300	95	2016	0.999	93.3%
Wholesale Trade Lumber and Wood	Lumber and wood merchant wholesalers	395 Wholesale trade	\$1,362,294,656	5,412	2016	1.004	33.4%
Biomass Electric Power Generation		47 Electric power generation – Biomass	\$138,884,704	114	2016	1.0060	0.0%

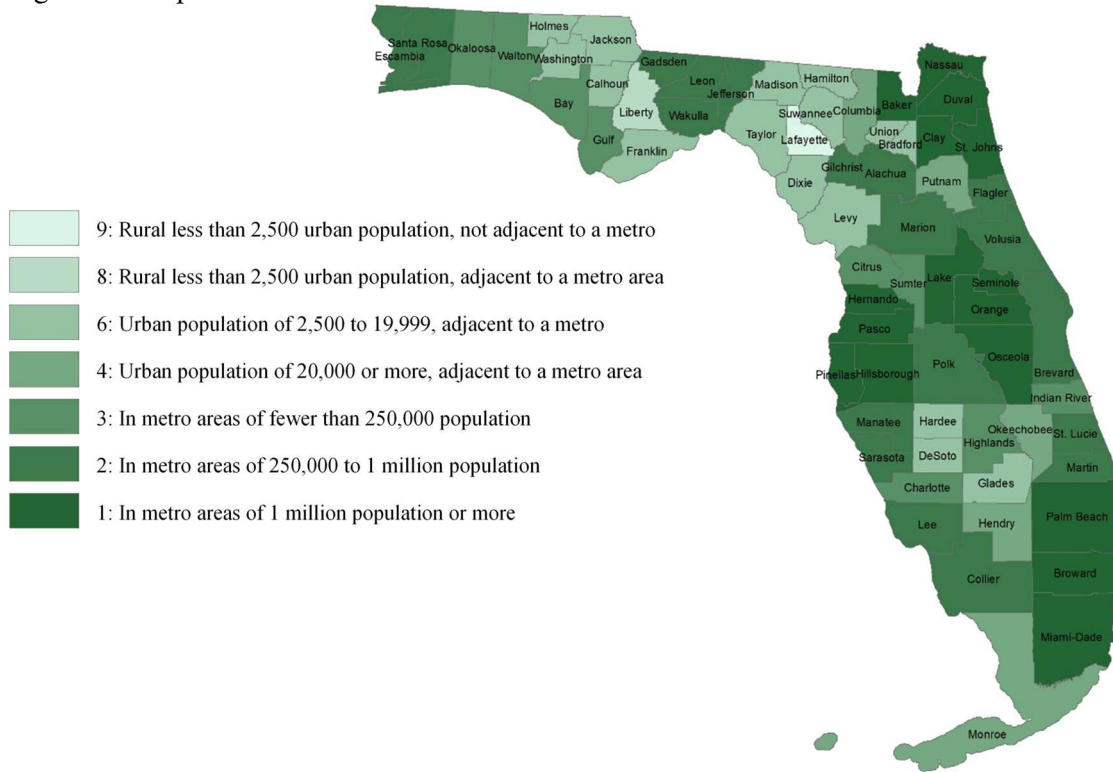
Industry Group	Activity	IMPLAN <sup>©</sup> Industry Sector	Industry Sales	Employment (direct jobs)	Event Year	Output Deflator	Export Percentage
Nonresident Public Forestland Recreation Expenditures	Lodging	499 Hotels and motels, including casino hotels	\$79,458,000	693	2015	1.0000	100.0%
	Food and beverage	501 Full-service restaurants	\$58,660,000	1,168	2015	1.0000	100.0%
	Transportation	402 Retail - Gasoline stores	\$32,174,000	64	2015	1.0000	100.0%
	Entertainment and recreation	496 Other amusement and recreation industries	\$33,063,000	483	2015	1.0000	100.0%
	Shopping, Other expenses	404 Retail - Sporting goods, hobby, musical instrument and book stores	\$37,329,000	279	2015	1.0000	100.0%

Figure 14. Economic regions in the state of Florida



Adapted from U.S. Commerce Department, Bureau of Economic Analysis (Johnson and Kort, 2004).

Figure 15. Map of urban-rural continuum codes for Florida counties



Adapted from U.S. Department of Agriculture’s Economic Research Service (<https://www.ers.usda.gov/data-products/rural-urban-continuum-codes/>).

# Economic Contribution Results for Industrial Forest Activity

## State-Level Economic Contributions

State-level economic contributions of the Florida forest industry (excluding public forest-based recreational spending) in 2016 are summarized in Table 18, Figure 16, and Figure 17. For all industry groups, the estimated total economic contributions were 124,104 fulltime and part-time jobs, \$6.58 billion (B) in labor income, \$10.96 B in value added, \$25.05 B in industry output or revenues, \$880 million (M) in state and local government taxes, and \$1.72 B in federal government taxes. As a share of total economic contributions, direct contributions represented 29.1 percent of employment and 34.9 percent of value added, while indirect contributions (supply chain activity) represented 15.8 percent and 15.5 percent, respectively, and induced contributions (household and government responding) represented 55.1 percent and 49.6 percent.

The largest forest industry groups in terms of employment contributions were primary paper product manufacturing, with 37,355 jobs, representing 30.1 percent of the total, followed by converted paper product manufacturing (20,615 jobs, 16.6%), primary wood product manufacturing (18,549 jobs, 14.9%), forestry production (16,594 jobs, 13.4%), wholesale trade in lumber and wood (14,255 jobs, 11.5%), secondary wood product manufacturing (7,101 jobs, 5.7%), forest chemicals manufacturing (9,178 jobs, 7.4%), sawmill, woodworking and paper machinery manufacturing (343 jobs, 0.3%), and biomass electric power generation (114 jobs, 0.1%) (Figure 16). In terms of value added contributions, the largest industry groups were again primary paper products (\$3.48 B, 31.7%) converted paper products (\$2.13 B, 19.4%), wholesale trade (\$1.57 B, 14.3%), primary wood products (\$1.36 B, 12.4%), forestry production (\$1.07 B, 9.8%), forest chemicals (\$807 M, 7.4%), and secondary wood products (\$468 M, 4.3%) (Figure 17). Primary and converted paper product manufacturing together represented 46.7 percent of total employment and 51.2 percent of value added contributions, while primary and secondary wood product manufacturing represented 20.7 percent and 16.6 percent, respectively.

Economic contributions of the forest industry are summarized by major sector of the Florida economy at the two-digit NAICS level in Table 19. Naturally, the largest economic contributions occurred in the Manufacturing industry group, which includes the wood and paper product and allied forest manufacturing sectors, with total contributions of 24,090 jobs, \$1.52 B labor income, \$2.69 B value added, and \$11.08 B industry output. Large impacts also occurred in the Agriculture, Forestry, Fishing and Hunting industry group, including forest production sectors for timber tracts, logging and forestry support services, with total employment of 12,024 jobs, \$508 M labor income, \$616 M value added and \$975 M industry output.

Contributions of the Florida forest industry to state-local and federal government tax revenues in 2016 by type of tax are summarized in Table 20. Total state and local taxes generated by the industry were \$880 M, including sales tax on production and imports (\$423 M) and property tax on production and imports (\$275 M). Taxes generated for the federal government totaled \$1.72 B, including personal income tax (\$619 M), Social Insurance Tax (Social Security)-employee contributions (\$396 M) and -employer contributions (\$359 M), and corporate

profits tax (\$246 M). Of the total tax contributions of \$2.60 B, federal taxes represented 66.0 percent and state/local taxes 34.0 percent.

Table 18. Summary of economic contributions of the forest industry in the state of Florida in 2016

Industry Group	Impact Type	Employment	Labor Income	Value Added	Industry Output	State & Local Taxes	Federal Taxes
		Fulltime, Part-time Jobs	Million Dollars				
Forestry Production	Direct Effect	8,362	389	447	719	14.8	80.2
	Indirect Effect	1,564	54	98	146	4.2	14.2
	Induced Effect	6,669	316	530	904	41.5	82.0
	Total Effect	<u>16,594</u>	<u>758</u>	<u>1,074</u>	<u>1,769</u>	<u>60.6</u>	<u>176.5</u>
Primary Wood Product Manufacturing	Direct Effect	6,766	325	414	1,786	21.6	75.8
	Indirect Effect	3,239	175	263	505	23.8	42.9
	Induced Effect	8,544	406	679	1,155	52.6	105.4
	Total Effect	<u>18,549</u>	<u>907</u>	<u>1,355</u>	<u>3,445</u>	<u>98.0</u>	<u>224.0</u>
Secondary Wood Product Manufacturing	Direct Effect	5,304	236	323	985	7.7	55.4
	Indirect Effect	392	22	33	64	2.8	5.3
	Induced Effect	1,406	67	112	191	8.7	17.3
	Total Effect	<u>7,101</u>	<u>324</u>	<u>468</u>	<u>1,239</u>	<u>19.2</u>	<u>78.0</u>
Primary Paper Product Manufacturing	Direct Effect	3,222	338	689	2,762	27.2	97.7
	Indirect Effect	8,001	444	710	1,392	71.9	112.7
	Induced Effect	26,132	1,249	2,078	3,531	158.9	323.2
	Total Effect	<u>37,355</u>	<u>2,031</u>	<u>3,477</u>	<u>7,685</u>	<u>258.1</u>	<u>533.6</u>
Converted Paper Product Manufacturing	Direct Effect	6,081	444	924	3,453	35.2	128.7
	Indirect Effect	2,713	161	265	526	24.7	41.6
	Induced Effect	11,822	564	941	1,603	72.3	146.1
	Total Effect	<u>20,615</u>	<u>1,169</u>	<u>2,129</u>	<u>5,582</u>	<u>132.3</u>	<u>316.4</u>
Forest Chemical Manufacturing	Direct Effect	699	55	106	1,325	20.9	34.6
	Indirect Effect	2,361	130	214	421	20.2	33.6
	Induced Effect	6,118	294	486	823	36.8	75.8
	Total Effect	<u>9,178</u>	<u>479</u>	<u>807</u>	<u>2,570</u>	<u>78.0</u>	<u>144.1</u>
Sawmill, Woodworking and Paper Machinery Manufacturing	Direct Effect	95	7	8	23	0.3	1.4
	Indirect Effect	41	2	4	7	0.3	0.6
	Induced Effect	207	10	16	28	1.3	2.5
	Total Effect	<u>343</u>	<u>19</u>	<u>28</u>	<u>58</u>	<u>1.9</u>	<u>4.5</u>
Wholesale Trade Lumber and Wood	Direct Effect	5,412	446	866	1,362	162.9	129.3
	Indirect Effect	1,348	67	108	190	6.8	16.9
	Induced Effect	7,494	360	596	1,005	44.8	93.0

Industry Group	Impact Type	Employment	Labor Income	Value Added	Industry Output	State & Local Taxes	Federal Taxes
		Fulltime, Part-time Jobs	Million Dollars				
	Total Effect	<u>14,255</u>	<u>874</u>	<u>1,569</u>	<u>2,558</u>	<u>214.6</u>	<u>239.2</u>
Biomass Electric Power Generation	Direct Effect	114	16	50	139	17.9	5.7
	Indirect Effect	0	0	0	0	0.0	0.0
	Induced Effect	0	0	0	0	0.0	0.0
	Total Effect	<u>114</u>	<u>16</u>	<u>50</u>	<u>139</u>	<u>17.9</u>	<u>5.7</u>
Total Industrial Activity ( <u>not</u> including recreation)	Direct Effect	36,055	2,256	3,826	12,554	308.6	608.9
	Indirect Effect	19,659	1,055	1,694	3,251	154.8	267.7
	Induced Effect	68,391	3,265	5,438	9,240	417.1	845.4
	Total Effect	<u>124,104</u>	<u>6,576</u>	<u>10,957</u>	<u>25,045</u>	<u>880.4</u>	<u>1,722.1</u>

Values in millions 2016 dollars.

Source: *IMPLAN* model for the State of Florida (2015) customized for forest industry sectors.

Figure 16. Summary of employment contributions of forest industry groups in the state of Florida in 2016

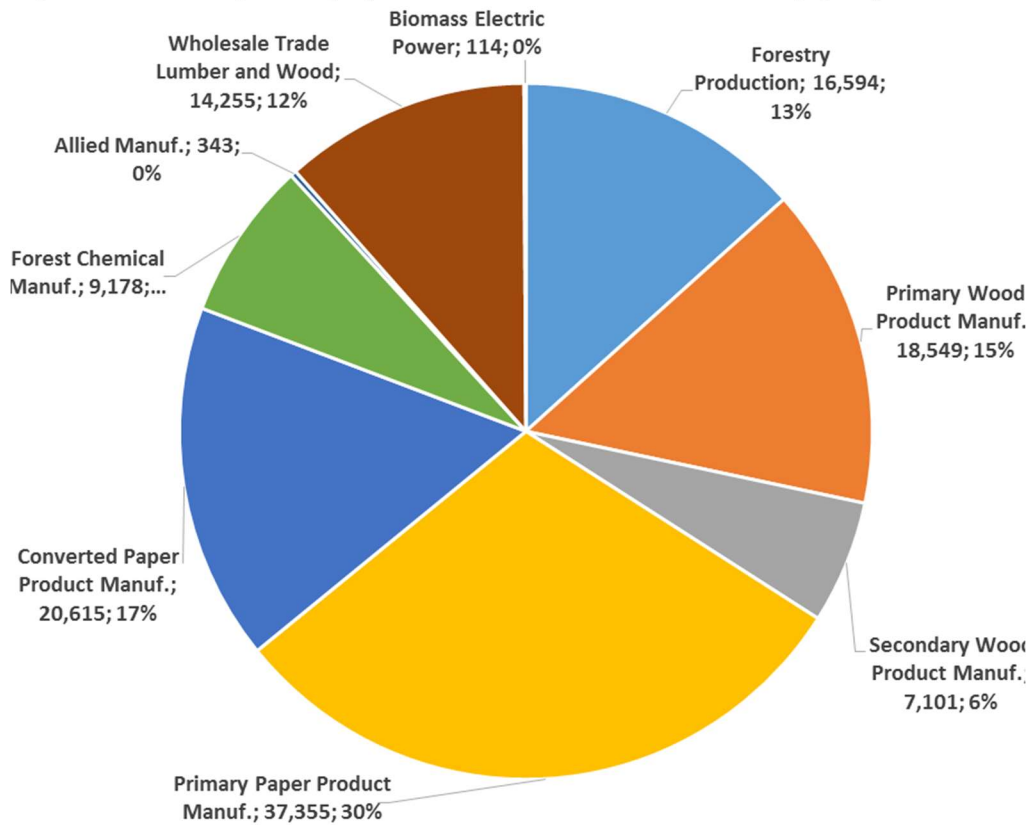


Figure 17. Summary of value added (GSP) contributions of forest industry groups in the state of Florida in 2016

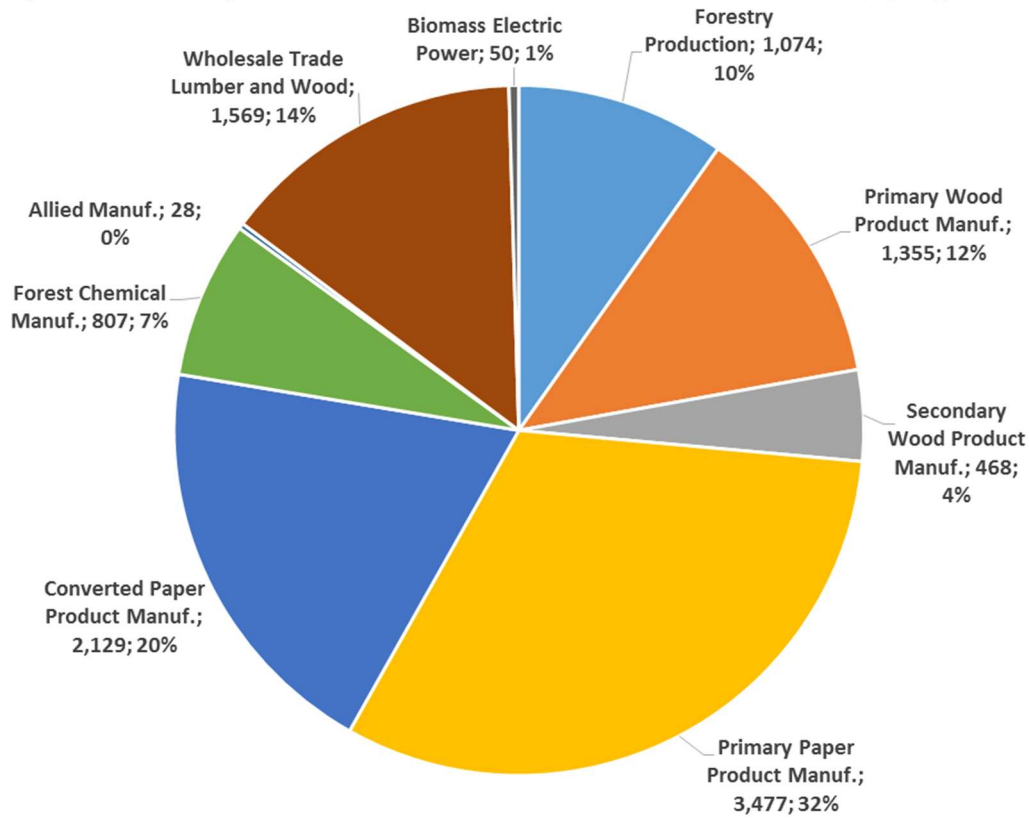




Table 19. Economic contributions of the forest industry in Florida by NAICS industry group in 2016

NAICS Industry Group	Employment	Labor Income	Value Added	Industry Output
	Fulltime, Part-time Jobs	Million Dollars		
11 Agriculture, Forestry, Fishing and Hunting	12,024	508	616	975
21 Mining	358	8	6	43
22 Utilities	446	56	231	555
23 Construction	4,647	198	325	742
31-33 Manufacturing	24,090	1,521	2,668	11,084
42 Wholesale Trade	9,164	755	1,466	2,307
44-45 Retail Trade	8,638	283	457	693
48-49 Transportation and Warehousing	3,544	179	246	574
51 Information	1,422	127	283	628
52 Finance and Insurance	4,968	300	442	1,016
53 Real Estate and Rental	5,179	105	1,040	1,567
54 Professional, Scientific and Technical Services	6,841	456	555	937
55 Management of Companies	1,537	154	198	337
56 Administrative and Waste Services	7,296	241	298	469
61 Educational Services	1,450	55	59	94
62 Health and Social Services	9,242	519	581	942
71 Arts, Entertainment and Recreation	1,860	58	92	157
72 Accommodation and Food Services	6,347	156	246	413
81 Other Services	6,008	226	269	514
92 Government and Non-NAICS	9,043	672	878	997
<b>Total</b>	<b>124,104</b>	<b>6,576</b>	<b>10,957</b>	<b>25,045</b>

Values in millions 2016 dollars. Estimates include all applicable multiplier effects. Does not include forest recreation. Source: IMPLAN<sup>®</sup> model for the state of Florida (2015) customized for forest industry sectors.

**Table 20. Detailed state-local and federal tax contributions of the forest industry in Florida in 2016**

Tax Item	Amount (Million Dollars)
<u>State and Local Taxes</u>	
Dividends	3.1
Social Ins Tax- Employee Contribution	2.5
Social Ins Tax- Employer Contribution	5.0
Tax on Production and Imports: Sales Tax	422.7
Tax on Production and Imports: Property Tax	274.6
Tax on Production and Imports: Motor Vehicle Licenses	6.5
Tax on Production and Imports: Severance Tax	0.5
Tax on Production and Imports: Other Taxes	61.7
Tax on Production and Imports: S/L Non-Taxes	26.5
Corporate Profits Tax	26.4
Personal Tax: Income Tax	0.0
Personal Tax: Non-Taxes (Fines- Fees)	41.9
Personal Tax: Motor Vehicle License	6.2
Personal Tax: Property Taxes	2.6
Personal Tax: Other Tax (Fishing/Hunting)	0.5
Total State and Local Taxes	<u>880.4</u>
<u>Federal Taxes</u>	
Social Ins Tax- Employee Contribution	396.3
Social Ins Tax- Employer Contribution	359.2
Tax on Production and Imports: Excise Taxes	70.5
Tax on Production and Imports: Custom Duty	26.5
Tax on Production and Imports: Fed Non-Taxes	4.3
Corporate Profits Tax	245.8
Personal Tax: Income Tax	619.4
Total Federal Taxes	<u>1,722.1</u>
Total State/Local and Federal Taxes	<u>2,602.5</u>

Values in 2016 dollars. Estimates include all applicable multiplier effects.  
Does not include forest recreation.

Source: IMPLAN<sup>®</sup> model for the state of Florida (2015) customized for forest industry sectors.

## **Economic Contributions in Florida Regions and Counties**

A summary of the economic contributions for all forest-related industrial activities for each economic region and county is provided in Table 21. Employment contributions by forest industry group for each economic region and county are provided in Table 22.

The top ten counties in terms of direct output (revenues) for all forest industry sectors were Duval (\$1.37 B), Miami-Dade (\$1.18 B), Taylor (\$877 M), Polk (\$811 M), Nassau (\$773 M), Bay (\$723 M), Hillsborough (\$707 M), Putnam (\$604 M), Broward (\$502 M) and Escambia (\$437 M). The top ten counties for direct output (sales revenues) in forestry production, primary wood and paper manufacturing were Taylor (\$760 M), Nassau (\$671 M), Bay (\$492 M), Duval (\$440 M), Escambia (\$356 M), Polk (\$260 M), Orange (\$144 M), Miami-Dade (\$109 M) and Liberty (\$109 M).

The top ten counties for total employment contributions were Duval (11,885 jobs), Taylor (11,456), Nassau (9,847), Miami-Dade (9,010), Bay (8,461), Polk (6,399), Escambia (5,653), Hillsborough (5,370), Seminole (4,943), and Broward (4,334), as shown in Figure 18. The top 10 counties for total value added contributions were Duval (\$1.11 B), Taylor (\$1.02 B), Nassau (\$892 M), Miami-Dade (\$890 M), Bay (\$766 M), Polk (\$546 M), Hillsborough (\$513 M), Escambia (\$508 M), Seminole (\$457 M), and Broward (\$415 M) (Figure 19).

These same 10 counties had the highest total output contributions, although in a slightly different order: Duval (\$2.66 B), Taylor (\$2.25 B), Miami-Dade (\$2.03 B), Nassau (\$1.98 B), Bay (\$1.80 B), Polk (\$1.37 B), Hillsborough (\$1.22 B), Escambia (\$1.11 B), Seminole (\$1.01 B) and Broward (\$897 M) (Figure 20).

The mix of forest industry sectors is quite different across Florida counties: Taylor, Nassau, Bay, and Escambia Counties are dominated by primary paper products manufacturing due to the presence of pulp and paper mills, while Miami-Dade, Polk, Hillsborough, and Putnam Counties have the most activity in converted paper products manufacturing. Polk, Duval, Hillsborough, Taylor, and Miami-Dade Counties have significant activity in wood products manufacturing. Duval, and Bay Counties have a presence in forest chemical (allied) manufacturing and the urbanized Counties of Miami-Dade, Hillsborough, Duval, Polk and Seminole have significant activity in wholesale trade.

The largest five counties for employment contributions in forestry production sectors were Taylor (1,478 jobs), Jefferson (928), Escambia (688), Nassau (592), and Lake (563). The largest five counties for employment contributions in primary wood product manufacturing were Polk (2,658), Duval (1,495), Dixie (1,055), Liberty (970), and St. Lucie (938). The largest five counties for employment contributions in secondary wood product manufacturing were Polk (826 jobs), Palm Beach (639), Miami-Dade (626), Broward (478), and Duval (377). The largest five counties for employment contributions in primary paper product manufacturing were Taylor (8,627), Nassau (8,203), Bay (6,390), Escambia (4,287) and Seminole (3,827). The largest five counties for employment contributions in converted paper product manufacturing were Duval (3,869 jobs), Miami-Dade (3,869), Putnam (3,056), Polk (2,173), and Hillsborough (2,133). The largest five counties for employment contributions in forest chemicals manufacturing were Alachua (1,742 jobs), Bay (1,432), Duval (956), Broward

(862), and Santa Rosa (667). The largest five counties for employment contributions in allied manufacturing sectors were Duval (70), Pinellas (41), Okaloosa (32), Sarasota (31), and Taylor (30). The largest five counties for employment contributions in wholesale trade in lumber and wood were Miami-Dade (2,811), Broward (2,147), Hillsborough (1,368), Orange (1,298), and Duval (950). The three counties with employment contributions in biomass electric power generations were Hernando (47), Alachua (45), and Liberty (22). Maps depicting the direct and total employment contributions and well as the total value added contributions of the forest industry in Florida counties are presented in Figure 24, Figure 25, and Figure 26. Economic contributions for all counties are profiled by industry groups in Appendix C.

In terms of broad economic regions of the state that are anchored by major metropolitan areas, the largest employment and value added contributions were in the Jacksonville area (27,788 jobs, \$2,54 B), Orlando (22,383 jobs, \$1.95 B), Miami-Ft. Lauderdale (17,751 jobs, \$1.67 B), Tallahassee (17,029 jobs, \$1.42 B), Panama City (10,257 jobs, \$889 M), Pensacola (8,515 jobs, \$726 M), Tampa-St. Petersburg (8,047 jobs, \$783 M), Gainesville (8,0257 jobs, \$614 M), and Sarasota-Bradenton (4,307 jobs, \$369 M), as shown in Figure 21 and Figure 22. Industry output contributions in Florida regions are illustrated in Figure 23.

Table 21. Summary of economic contributions of the forest industry in Florida regions and counties in 2016

Region / County	Direct Employment	Total Employment	Direct Output	Total Output	Labor Income	Value Added	State and Local Taxes	Federal Taxes
	Fulltime and Part-time Jobs		Million Dollars					
<b>Gainesville</b>	<b>2,786</b>	<b>8,027</b>	<b>781</b>	<b>1,474</b>	<b>395</b>	<b>614</b>	<b>51</b>	<b>102</b>
Alachua	918	3,155	433	769	165	277	29	46
Bradford	130	445	31	62	21	31	2	5
Columbia	278	727	48	101	35	51	3	8
Dixie	579	1,188	117	217	58	86	6	14
Gilchrist	86	487	24	55	22	32	2	5
Lafayette	71	309	17	38	14	21	1	3
Levy	184	350	21	44	16	24	1	4
Suwannee	231	598	28	66	28	40	2	6
Union	308	768	62	122	37	54	4	9
<b>Jacksonville</b>	<b>6,139</b>	<b>27,788</b>	<b>2,905</b>	<b>5,951</b>	<b>1,493</b>	<b>2,540</b>	<b>185</b>	<b>393</b>
Baker	10	444	23	52	21	30	2	5
Clay	373	625	38	82	31	48	4	8
Duval	2,990	11,885	1,374	2,661	645	1,105	84	172
Nassau	1,295	9,847	773	1,983	528	892	65	138
Putnam	1,143	4,072	604	1,016	223	392	26	60
St Johns	328	914	93	157	46	73	5	11
<b>Miami-Fort Lauderdale</b>	<b>7,810</b>	<b>17,751</b>	<b>2,104</b>	<b>3,692</b>	<b>976</b>	<b>1,666</b>	<b>158</b>	<b>261</b>
Broward	1,740	4,334	502	897	242	416	46	66
Glades	57	218	10	24	10	14	1	2
Hendry	197	101	11	22	5	8	1	1
Indian River	159	527	30	65	25	37	3	6
Martin	326	688	57	104	33	50	4	8
Miami-Dade	3,567	9,010	1,180	2,029	507	890	80	137
Monroe	140	35	4	6	2	3	0	1
Okeechobee	34	29	3	5	1	2	0	0
Palm Beach	1,590	2,809	309	541	149	244	24	39
<b>Orlando</b>	<b>8,206</b>	<b>22,383</b>	<b>2,351</b>	<b>4,495</b>	<b>1,180</b>	<b>1,948</b>	<b>156</b>	<b>307</b>
Brevard	301	708	83	148	39	65	6	10
Citrus	111	273	24	48	14	21	2	3
Flagler	110	520	45	90	25	38	3	6
Hardee	196	379	23	46	17	25	1	4
Highlands	167	69	6	10	3	5	0	1
Lake	244	1,208	104	211	59	92	7	15
Marion	672	1,100	141	235	58	97	7	15
Orange	1,339	4,166	436	858	232	399	37	62
Osceola	228	346	41	61	17	27	2	4
Polk	2,948	6,399	811	1,374	333	546	39	86
Seminole	849	4,943	418	1,008	268	457	36	70
St Lucie	622	1,206	122	221	60	92	7	15

Region / County	Direct Employment	Total Employment	Direct Output	Total Output	Labor Income	Value Added	State and Local Taxes	Federal Taxes
	Fulltime and Part-time Jobs		Million Dollars					
Sumter	186	517	47	92	25	38	3	6
Volusia	234	549	51	93	29	46	4	7
<b>Panama City</b>	<b>1,781</b>	<b>10,257</b>	<b>859</b>	<b>2,055</b>	<b>537</b>	<b>889</b>	<b>67</b>	<b>141</b>
Bay	891	8,461	723	1,799	453	766	60	121
Calhoun	167	506	25	56	23	33	2	5
Gulf	88	83	6	13	4	6	0	1
Holmes	50	84	6	12	4	6	0	1
Jackson	421	738	82	134	35	53	3	9
Washington	163	384	17	42	18	25	1	4
<b>Pensacola</b>	<b>1,053</b>	<b>8,515</b>	<b>672</b>	<b>1,609</b>	<b>443</b>	<b>726</b>	<b>55</b>	<b>115</b>
Escambia	595	5,653	437	1,113	302	508	38	79
Okalosa	99	417	23	52	20	30	2	5
Santa Rosa	239	1,713	166	346	86	138	11	23
Walton	121	732	46	97	34	50	3	8
<b>Sarasota-Bradenton</b>	<b>2,392</b>	<b>4,307</b>	<b>492</b>	<b>848</b>	<b>226</b>	<b>369</b>	<b>31</b>	<b>59</b>
Charlotte	170	298	31	55	15	24	2	4
Collier	385	424	50	82	23	39	4	6
DeSoto	81	11	1	2	1	1	0	0
Lee	812	1,569	174	316	81	130	12	21
Manatee	598	1,233	132	221	63	100	7	16
Sarasota	346	773	104	173	43	76	6	12
<b>Tallahassee</b>	<b>3,102</b>	<b>17,029</b>	<b>1,304</b>	<b>3,092</b>	<b>877</b>	<b>1,422</b>	<b>103</b>	<b>223</b>
Franklin	22	389	17	42	18	25	1	4
Gadsden	374	1,088	96	189	53	79	6	13
Hamilton	36	350	15	38	16	23	1	4
Jefferson	51	941	41	101	43	61	3	10
Leon	288	185	17	31	10	17	2	3
Liberty	573	1,635	183	322	83	133	12	21
Madison	295	742	44	96	35	50	3	8
Taylor	1,432	11,456	877	2,245	607	1,016	73	158
Wakulla	31	244	13	28	11	16	1	3
<b>Tampa-St. Petersburg</b>	<b>3,284</b>	<b>8,047</b>	<b>1,086</b>	<b>1,829</b>	<b>449</b>	<b>783</b>	<b>74</b>	<b>121</b>
Hernando	115	180	71	81	14	32	8	4
Hillsborough	2,038	5,370	707	1,217	297	513	45	80
Pasco	203	406	49	86	22	38	3	6
Pinellas	928	2,091	260	445	116	199	18	31
<b>Grand Total</b>	<b>36,553</b>	<b>124,104</b>	<b>12,554</b>	<b>25,045</b>	<b>6,576</b>	<b>10,957</b>	<b>880</b>	<b>1,722</b>

Contribution estimates include all applicable multiplier effects. Values may not sum due to rounding.

Table 22. Employment contributions of forest industry groups in Florida regions and counties in 2016

Region / County	Forestry Production	Primary Wood Products Manuf.	Secondary Wood Products Manuf.	Primary Paper Products Manuf.	Converted Paper Products Manuf.	Forest Chemical Manuf.	Allied Manuf.	Wholesale Trade Lumber and Wood	Biomass Electric power Gene.	Total All Groups
----- Fulltime and Part-time Jobs -----										
<b>Gainesville</b>	<b>2,969</b>	<b>2,420</b>	<b>454</b>	<b>0</b>	<b>171</b>	<b>1,742</b>	<b>23</b>	<b>203</b>	<b>45</b>	<b>8,027</b>
Alachua	486	362	214	0	171	1,742	23	113	45	3,155
Bradford	251	145	35	0	0	0	0	15	0	445
Columbia	430	234	30	0	0	0	0	34	0	727
Dixie	26	1,055	102	0	0	0	0	6	0	1,188
Gilchrist	450	20	13	0	0	0	0	4	0	487
Lafayette	245	60	0	0	0	0	0	4	0	309
Levy	262	62	18	0	0	0	0	9	0	350
Suwannee	561	21	0	0	0	0	0	15	0	598
Union	260	463	42	0	0	0	0	3	0	768
<b>Jacksonville</b>	<b>2,651</b>	<b>2,048</b>	<b>756</b>	<b>11,989</b>	<b>7,650</b>	<b>1,352</b>	<b>118</b>	<b>1,224</b>	<b>0</b>	<b>27,788</b>
Baker	414	0	0	0	30	0	0	0	0	444
Clay	423	0	19	0	6	0	26	151	0	625
Duval	382	1,495	377	3,786	3,869	956	70	950	0	11,885
Nassau	592	408	153	8,203	461	0	7	24	0	9,847
Putnam	473	110	11	0	3,056	396	16	10	0	4,072
St Johns	367	34	196	0	227	0	0	89	0	914
<b>Miami-Fort Lauderdale</b>	<b>1,072</b>	<b>2,053</b>	<b>1,921</b>	<b>588</b>	<b>4,276</b>	<b>1,744</b>	<b>13</b>	<b>6,084</b>	<b>0</b>	<b>17,751</b>
Broward	1	502	478	0	344	862	0	2,147	0	4,334
Glades	214	0	0	0	0	0	0	4	0	218
Hendry	25	10	0	0	0	55	0	11	0	101
Indian River	440	4	9	0	29	0	0	44	0	527
Martin	370	7	149	0	4	76	0	81	0	688
Miami-Dade	4	802	626	429	3,869	460	10	2,811	0	9,010
Monroe	0	0	8	0	0	0	0	27	0	35
Okeechobee	5	0	12	0	0	0	0	12	0	29
Palm Beach	12	729	639	158	30	290	2	948	0	2,809
<b>Orlando</b>	<b>1,539</b>	<b>5,954</b>	<b>2,088</b>	<b>5,102</b>	<b>3,665</b>	<b>942</b>	<b>27</b>	<b>3,066</b>	<b>0</b>	<b>22,383</b>
Brevard	4	198	34	0	151	70	27	223	0	708
Citrus	37	211	0	0	0	0	0	25	0	273
Flagler	248	100	20	0	0	141	0	11	0	520
Hardee	301	9	62	0	0	0	0	8	0	379
Highlands	30	0	16	0	1	0	0	22	0	69
Lake	563	195	24	0	2	341	0	83	0	1,208
Marion	21	361	164	0	409	0	0	143	0	1,100
Orange	28	500	239	1,274	689	137	0	1,298	0	4,166
Osceola	19	40	194	0	6	0	0	86	0	346
Polk	86	2,658	826	0	2,173	207	0	448	0	6,399
Seminole	9	225	275	3,827	232	0	0	376	0	4,943
St Lucie	2	938	139	0	0	0	0	128	0	1,206
Sumter	53	429	9	0	0	0	0	26	0	517
Volusia	138	91	87	0	0	45	0	189	0	549

Region / County	Forestry Production	Primary Wood Products Manuf.	Secondary Wood Products Manuf.	Primary Paper Products Manuf.	Converted Paper Products Manuf.	Forest Chemical Manuf.	Allied Manuf.	Wholesale Trade Lumber and Wood	Biomass Electric power Gene.	Total All Groups
----- Fulltime and Part-time Jobs -----										
<b>Panama City</b>	<b>1,355</b>	<b>552</b>	<b>396</b>	<b>6,390</b>	<b>4</b>	<b>1,432</b>	<b>0</b>	<b>127</b>	<b>0</b>	<b>10,257</b>
Bay	424	14	111	6,390	0	1,432	0	90	0	8,461
Calhoun	470	0	27	0	0	0	0	8	0	506
Gulf	32	48	0	0	0	0	0	3	0	83
Holmes	54	18	0	0	4	0	0	7	0	84
Jackson	1	469	257	0	0	0	0	11	0	738
Washington	374	3	0	0	0	0	0	8	0	384
<b>Pensacola</b>	<b>1,985</b>	<b>479</b>	<b>112</b>	<b>4,572</b>	<b>229</b>	<b>816</b>	<b>32</b>	<b>288</b>	<b>0</b>	<b>8,515</b>
Escambia	688	100	28	4,287	229	149	0	173	0	5,653
Okaloosa	311	0	17	0	0	0	32	57	0	417
Santa Rosa	501	181	38	285	0	667	0	40	0	1,713
Walton	485	198	29	0	0	0	0	19	0	732
<b>Sarasota- Bradenton</b>	<b>486</b>	<b>975</b>	<b>735</b>	<b>0</b>	<b>782</b>	<b>363</b>	<b>31</b>	<b>935</b>	<b>0</b>	<b>4,307</b>
Charlotte	27	152	48	0	27	0	0	44	0	298
Collier	30	28	107	0	71	19	0	170	0	424
DeSoto	0	0	0	0	0	0	0	11	0	11
Lee	55	630	213	0	6	344	0	321	0	1,569
Manatee	362	127	279	0	291	0	0	175	0	1,233
Sarasota	12	39	88	0	387	0	31	215	0	773
<b>Tallahassee</b>	<b>4,421</b>	<b>2,710</b>	<b>48</b>	<b>8,627</b>	<b>791</b>	<b>198</b>	<b>30</b>	<b>182</b>	<b>22</b>	<b>17,029</b>
Franklin	380	4	0	0	0	0	0	5	0	389
Gadsden	157	902	0	0	0	0	0	30	0	1,088
Hamilton	344	3	0	0	0	0	0	3	0	350
Jefferson	928	9	0	0	0	0	0	4	0	941
Leon	29	9	29	0	0	0	0	117	0	185
Liberty	357	970	0	0	284	0	0	3	22	1,635
Madison	527	205	0	0	0	0	0	10	0	742
Taylor	1,478	608	0	8,627	508	198	30	7	0	11,456
Wakulla	221	0	19	0	0	0	0	4	0	244
<b>Tampa-St. Petersburg</b>	<b>116</b>	<b>1,358</b>	<b>591</b>	<b>88</b>	<b>3,046</b>	<b>589</b>	<b>68</b>	<b>2,145</b>	<b>47</b>	<b>8,047</b>
Hernando	32	27	16	0	22	0	0	36	47	180
Hillsborough	33	909	333	0	2,133	566	27	1,368	0	5,370
Pasco	41	84	6	0	152	22	0	101	0	406
Pinellas	9	338	236	88	739	0	41	641	0	2,091
<b>Total All Areas</b>	<b>16,594</b>	<b>18,549</b>	<b>7,101</b>	<b>37,355</b>	<b>20,615</b>	<b>9,178</b>	<b>343</b>	<b>14,255</b>	<b>114</b>	<b>124,104</b>

Contribution estimates include all applicable multiplier effects. Values may not sum due to rounding.



Figure 18. Employment contributions of the forest industry in the top ten Florida counties in 2016

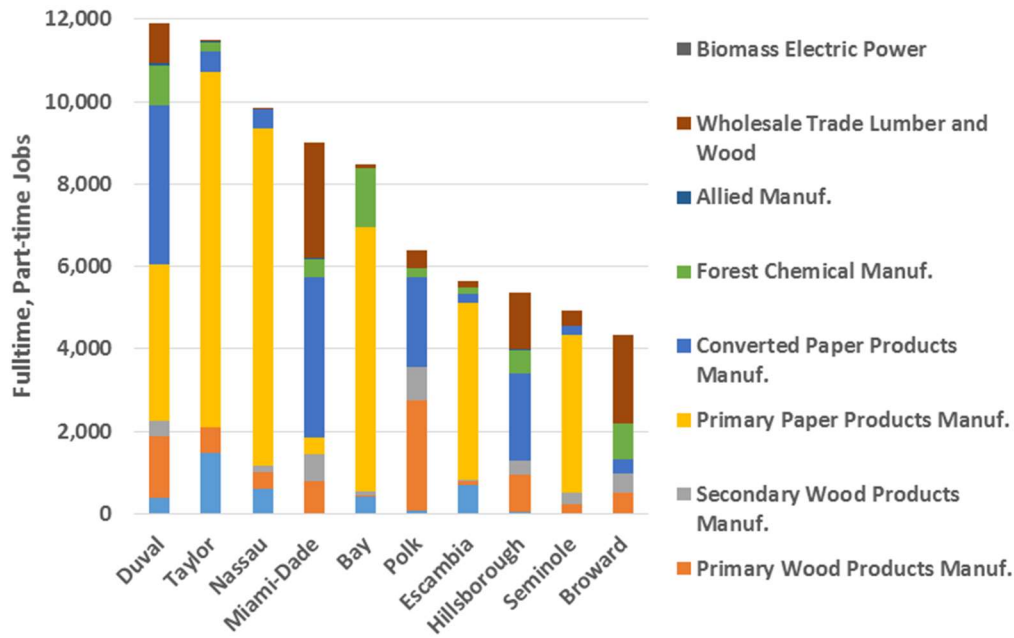


Figure 19. Value added (GSP) contributions of the forest industry in the top ten Florida counties in 2016

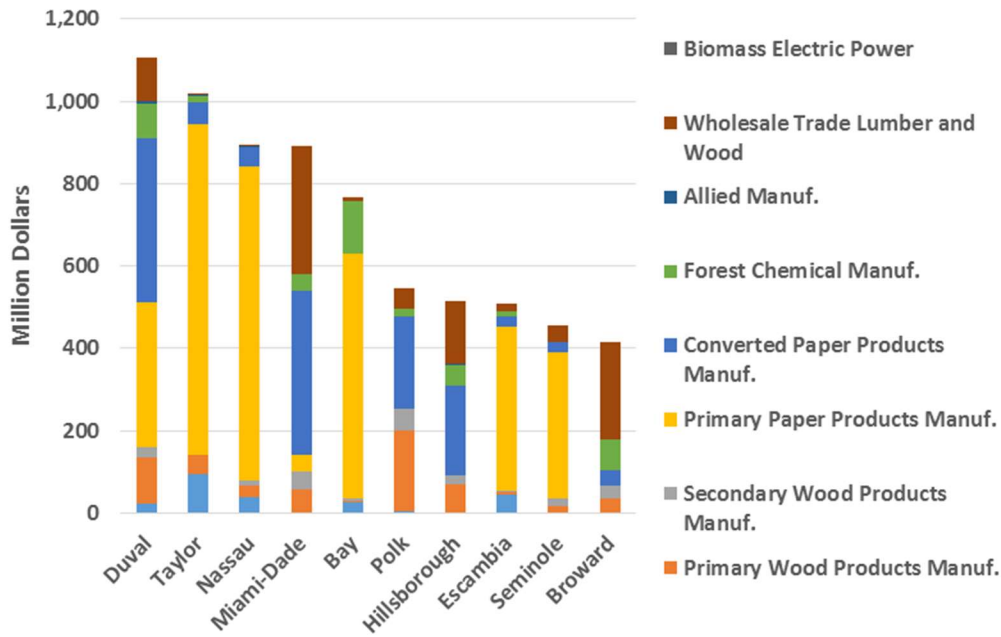


Figure 20. Output contributions of the forest industry in the top ten Florida counties in 2016

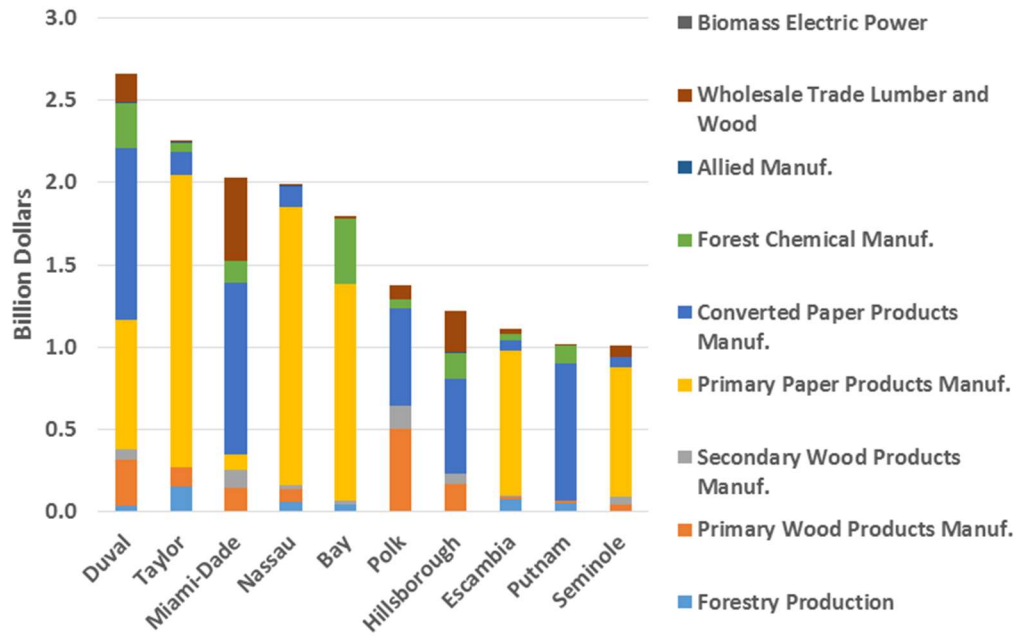


Figure 21. Employment contributions of the forest industry in Florida economic regions in 2016

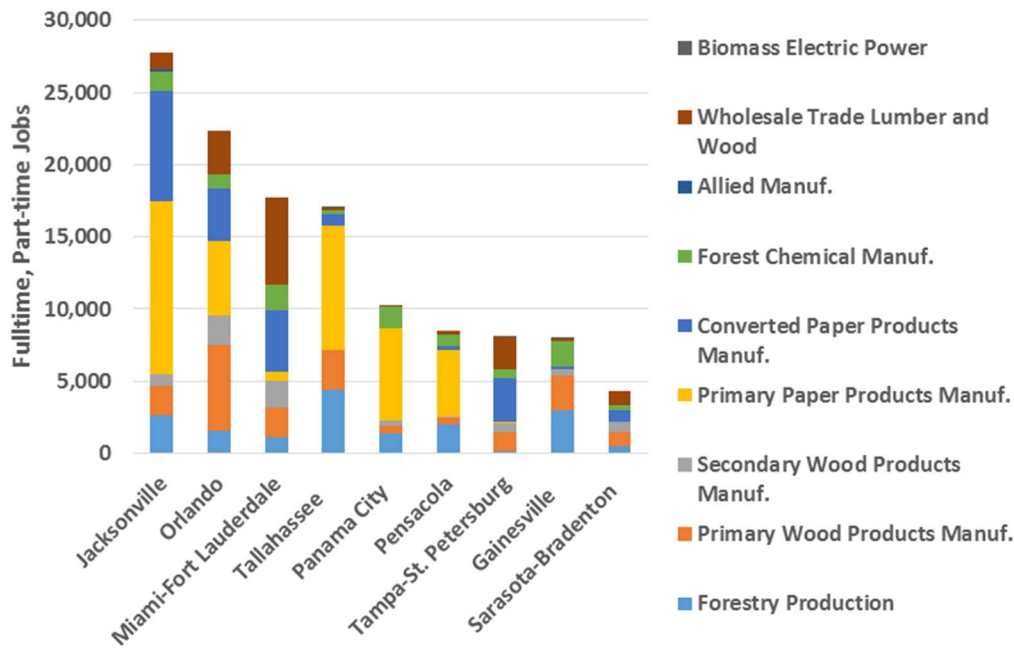


Figure 22. Value added (GSP) contributions of the forest industry in Florida economic regions in 2016

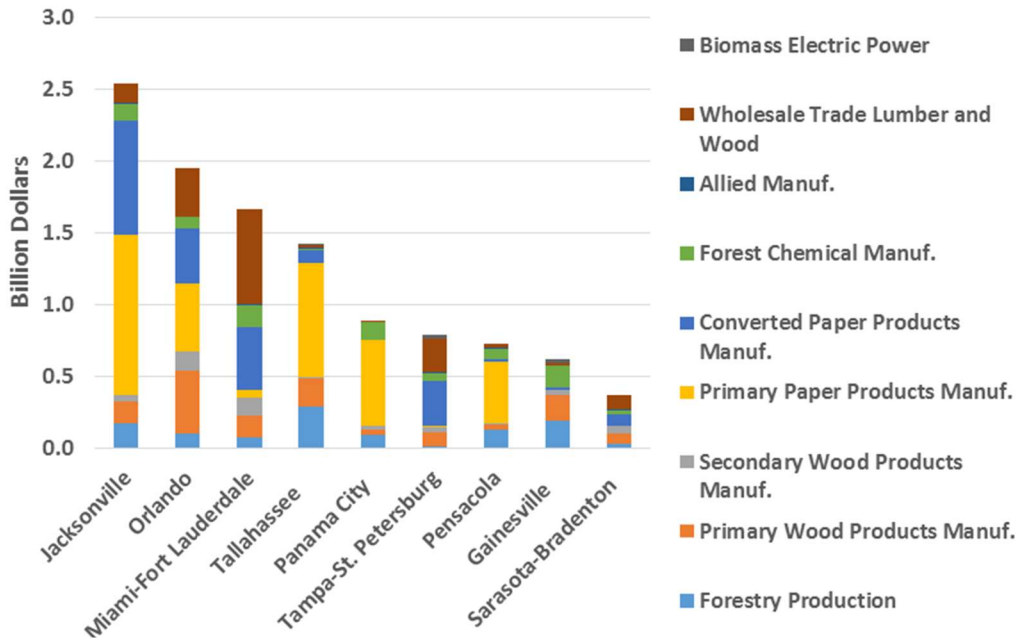


Figure 23. Output contributions of the forest industry in Florida economic regions in 2016

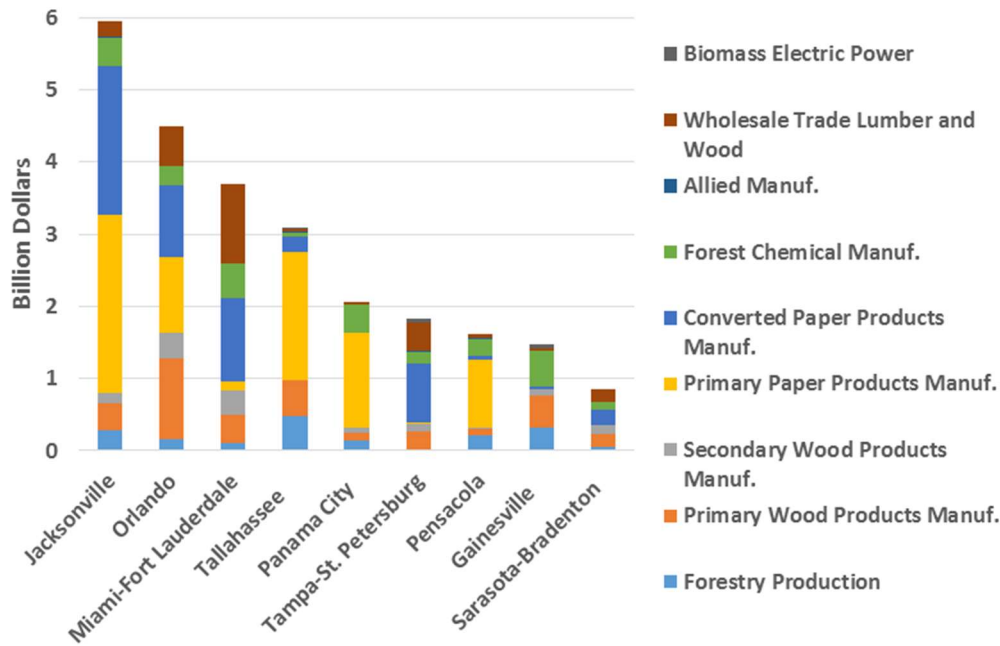


Figure 24. Map of direct employment (jobs) in the forest industry in Florida counties in 2016

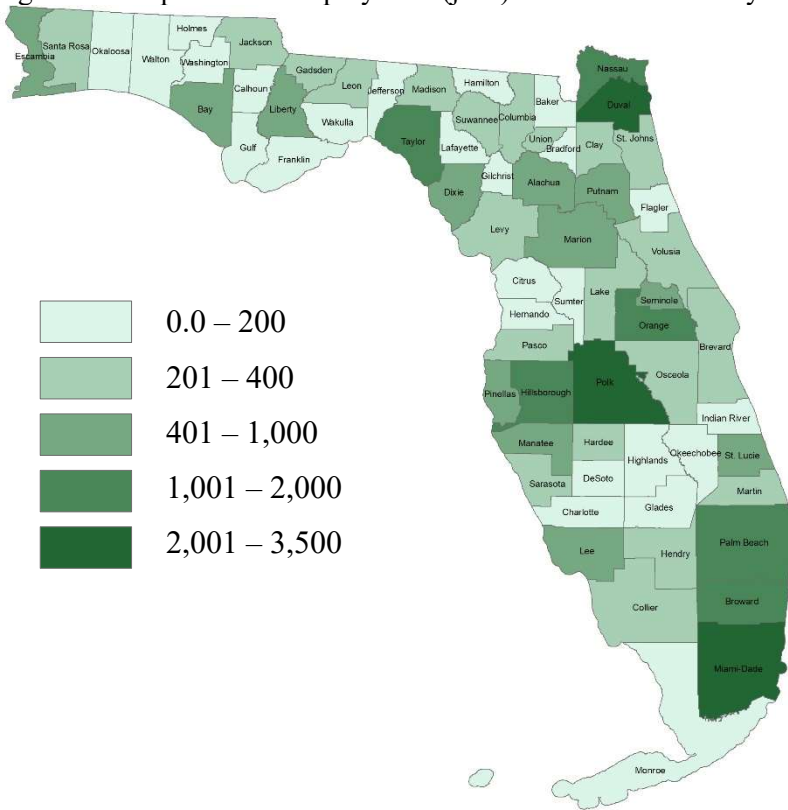


Figure 25. Map of employment contributions (jobs) of the forest industry in Florida counties in 2016

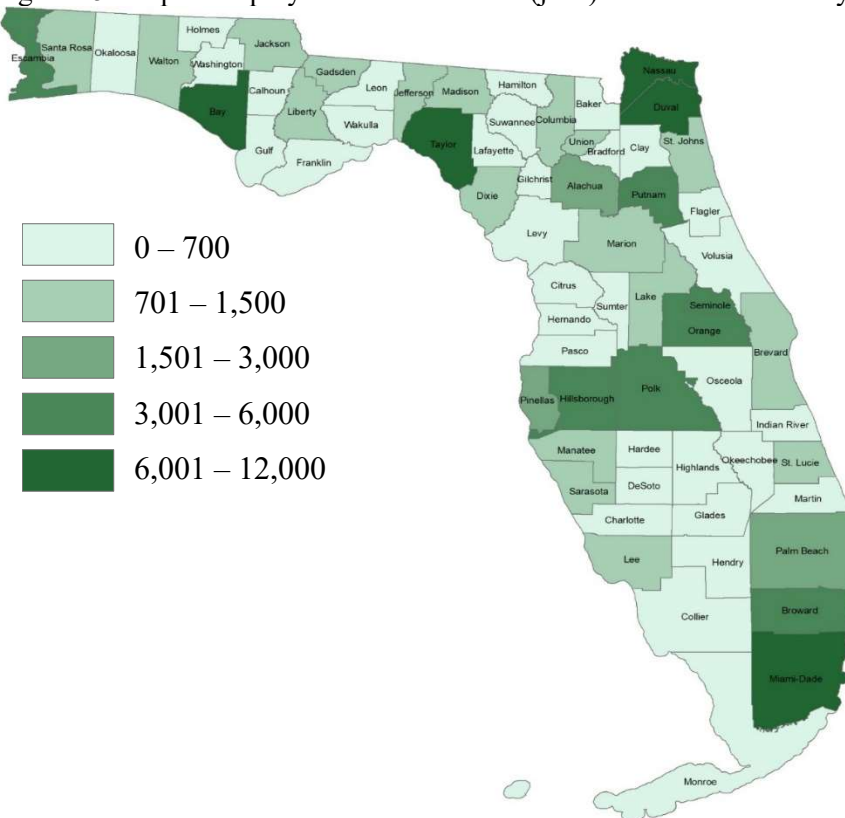
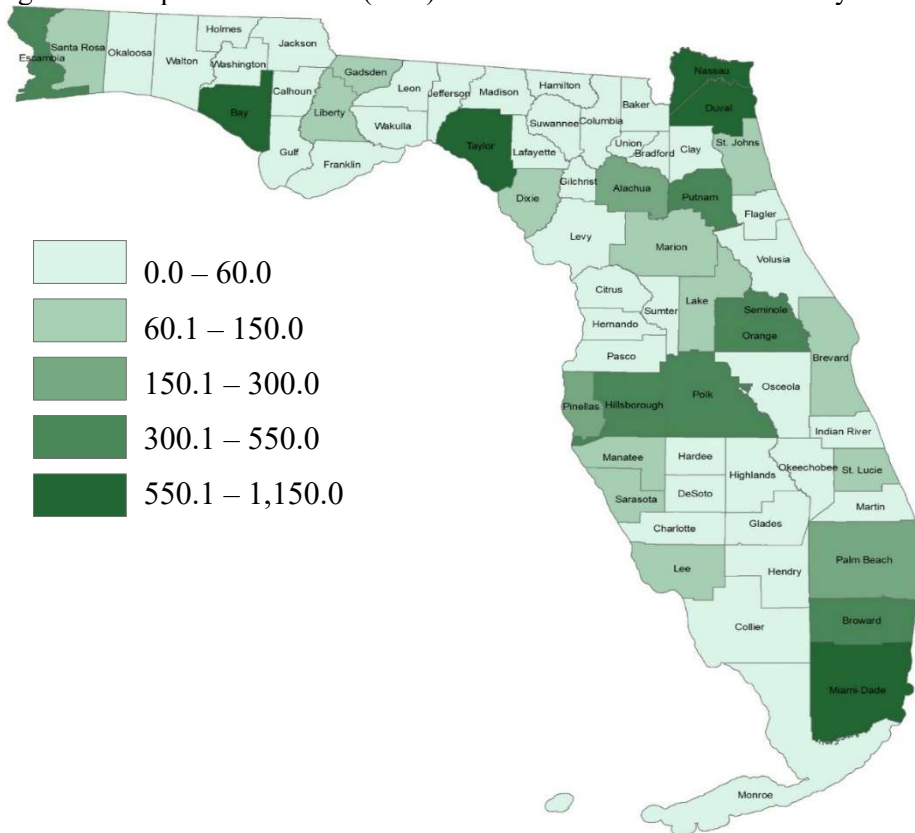


Figure 26. Map of value added (GSP) contributions of the forest industry in Florida counties in 2016



### Community Dependence on the Forest Industry

In addition to the absolute magnitude of economic contributions, it is important to understand the relative contribution of the forest industry, or community dependence on the industry, in terms of the share of total state or county economic activity, as summarized in Table 23. At the state level, forest industry employment contributions represented 1.10 percent of the 2015 Florida workforce (11.25 million jobs), and value added contributions represented 1.23 percent of total value added or Gross State Product (\$890.77 B).

The dependence of Florida counties on the forest industry in terms of employment and value added (GSP) contributions are summarized in Table 24, and mapped in Figure 27 and Figure 28. Four counties were categorized as “critically dependent” on the forest industry, representing over 20 percent of total county employment and over 30 percent of county GSP: Taylor (100%, 100%), Liberty (56.8%, 77.7%), Nassau (32.9%, 44.5%), Dixie (26.9%, 36.9%). Six counties were considered to be “very dependent” on the forest industry, with employment contributions representing 10 to 20 percent of total county employment or value added contributions of 15 to 30 percent of county GSP: Putnam (18.8%, 22.9%), Jefferson (16.6%, 23.6%), Union (14.5%, 17.7%), Lafayette (12.6%, 14.0%), Madison (11.2%, 13.5%), and Calhoun (11.2%, 15.1%). In addition, five counties were considered “moderately dependent”, with forest industry employment contributions representing at least five percent of county totals: Gilchrist, Hamilton, Bay, Franklin, and Gadsden.

The economic contributions of the forest industry in relation to the level of urbanization in Florida counties was evaluated using the urban-rural continuum typology developed by the USDA-Economic Research Service that classifies counties based on metropolitan area status (metro, non-metro), population, and whether non-metro counties are adjacent to a metro county. Florida has 44 metro counties, of which 16 had a population of 1 million or greater, 19 had population of 250,000 to 1 million, and 9 had population of less than 250,000. There are 23 non-metro counties (Figure 15). As shown in Table 25, the employment and value added contributions were higher in metro area counties (98,589 jobs, \$8.84 B) than in non-metro counties (25,515 jobs, \$2.12 B). In addition, employment and value added contributions were highest in counties with 1 million or more population (58,580 jobs, \$5.46 B), counties in metro areas with population of 250,000 to 1 million (28,633 jobs, \$2.41 B), and non-metro counties with urban population of 2,500 to 19,999 that are adjacent to a metro area (18,608 jobs, \$1.51 B). Thus, the forest industry has important economic contributions throughout the state of Florida in both highly urbanized and rural areas.

Table 23. Economic contributions by the forest industry as a share of total employment and value added in Florida counties in 2016

County	Forest industry contributions		County totals		Share of County Totals	
	Employment (Jobs)	Value Added (M\$)	Employment (Jobs)	Value Added (M\$)	Employment	Value Added
Alachua	3,155	277	165,844	11,930.6	1.90%	2.32%
Baker	444	30	9,856	521.6	4.51%	5.73%
Bay	8,461	766	103,927	7,871.8	8.14%	9.74%
Bradford	445	31	10,041	635.8	4.44%	4.84%
Brevard	708	65	281,610	22,122.0	0.25%	0.30%
Broward	4,334	416	1,142,728	92,349.0	0.38%	0.45%
Calhoun	506	33	4,532	220.0	11.17%	15.08%
Charlotte	298	24	69,821	4,010.0	0.43%	0.59%
Citrus	273	21	49,505	4,034.6	0.55%	0.51%
Clay	625	48	71,025	4,419.6	0.88%	1.09%
Collier	424	39	207,907	15,549.3	0.20%	0.25%
Columbia	727	51	29,491	1,950.2	2.47%	2.60%
De Soto	11	1	11,595	748.2	0.09%	0.16%
Dixie	1,188	86	4,422	233.5	26.87%	36.86%
Duval	11,885	1,105	677,591	58,719.3	1.75%	1.88%
Escambia	5,653	508	178,890	14,411.2	3.16%	3.53%
Flagler	520	38	26,853	1,799.3	1.94%	2.13%
Franklin	389	25	5,991	297.1	6.49%	8.55%
Gadsden	1,088	79	18,622	1,022.5	5.84%	7.75%
Gilchrist	487	32	5,864	324.2	8.31%	9.84%
Glades	218	14	4,389	214.9	4.98%	6.66%
Gulf	83	6	5,980	356.6	1.38%	1.65%
Hamilton	350	23	4,260	409.7	8.22%	5.57%
Hardee	379	25	10,901	797.6	3.48%	3.14%
Hendry	101	8	17,359	1,013.7	0.58%	0.83%
Hernando	180	32	59,433	3,372.4	0.30%	0.95%

County	Forest industry contributions		County totals		Share of County Totals	
	Employment (Jobs)	Value Added (M\$)	Employment (Jobs)	Value Added (M\$)	Employment	Value Added
Highlands	69	5	36,381	2,108.6	0.19%	0.26%
Hillsborough	5,370	513	860,187	83,021.6	0.62%	0.62%
Holmes	84	6	7,459	308.9	1.13%	1.97%
Indian River	527	37	69,794	4,923.2	0.75%	0.76%
Jackson	738	53	19,090	1,161.9	3.87%	4.52%
Jefferson	941	61	5,667	259.2	16.61%	23.59%
Lafayette	309	21	2,446	147.6	12.62%	13.98%
Lake	1,208	92	131,774	7,730.4	0.92%	1.19%
Lee	1,569	130	342,716	24,522.9	0.46%	0.53%
Leon	185	17	189,837	13,680.6	0.10%	0.13%
Levy	350	24	13,657	693.5	2.56%	3.40%
Liberty	1,635	133	2,880	171.5	56.76%	77.72%
Madison	742	50	6,647	373.4	11.17%	13.45%
Manatee	1,233	100	178,595	11,984.1	0.69%	0.84%
Marion	1,100	97	138,552	8,354.5	0.79%	1.16%
Martin	688	50	98,148	6,223.1	0.70%	0.81%
Miami-Dade	9,010	890	1,669,475	139,238.6	0.54%	0.64%
Monroe	35	3	63,269	4,242.2	0.05%	0.08%
Nassau	9,847	892	29,933	2,003.8	32.90%	44.54%
Okaloosa	417	30	128,998	11,493.0	0.32%	0.26%
Okeechobee	29	2	15,665	1,022.1	0.18%	0.24%
Orange	4,166	399	987,287	84,505.7	0.42%	0.47%
Osceola	346	27	109,458	7,839.8	0.32%	0.35%
Palm Beach	2,809	244	876,668	73,446.8	0.32%	0.33%
Pasco	406	38	140,376	9,653.5	0.29%	0.39%
Pinellas	2,091	199	570,035	45,014.7	0.37%	0.44%
Polk	6,399	546	272,877	20,329.5	2.34%	2.69%
Putnam	4,072	392	21,697	1,710.1	18.77%	22.94%
Santa Rosa	1,713	138	52,802	3,570.4	3.24%	3.86%
Sarasota	773	76	254,153	17,011.6	0.30%	0.44%
Seminole	4,943	457	245,053	19,296.2	2.02%	2.37%
St Johns	914	73	89,799	6,554.9	1.02%	1.11%
St Lucie	1,206	92	110,594	6,965.3	1.09%	1.32%
Sumter	517	38	33,325	2,534.3	1.55%	1.51%
Suwannee	598	40	16,610	1,015.3	3.60%	3.89%
Taylor*	11,456	1,016	8,689	653.4	100%	100%
Union	768	54	5,286	304.4	14.54%	17.67%
Volusia	549	46	210,549	14,196.3	0.26%	0.32%
Wakulla	244	16	9,606	510.5	2.54%	3.13%
Walton	732	50	33,156	2,209.9	2.21%	2.26%
Washington	384	25	8,409	452.8	4.57%	5.57%
Total	<u>124,104</u>	<u>10,957</u>	<u>11,246,035</u>	<u>890,774.9</u>	<u>1.10%</u>	<u>1.23%</u>

\*Share for Taylor county truncated at 100%.

Source for state employment and value added: IMPLAN<sup>®</sup> data for 2015.

Table 24. Distribution of Florida counties by level of dependence on the forest industry

Forest Industry Dependence Category	Employment Contributions as a Share of Total County Employment	Number of Counties	Value Added Contributions as a Share of Total County Value Added	Number of Counties
Critically Dependent	≥ 20.1%	4	≥ 30.1%	4
Very Dependent	10.1% – 20.0%	6	15.1% – 30.0%	4
Moderately Dependent	5.1% – 10.0%	5	10.1% – 15.0%	2
Somewhat Dependent	2.1% – 5.0%	15	5.1% – 10.0%	8
Not Dependent	≤ 2.0%	37	≤ 5.0%	49
Total		<u>67</u>		<u>67</u>

Source for economic contributions: IMPLAN<sup>©</sup> model for the State of Florida (2015) customized for forest industry sectors.  
 Source for county employment and value added: IMPLAN<sup>©</sup> data for 2015.

Figure 27. Map of Florida county dependence on the forest industry in terms of employment contributions

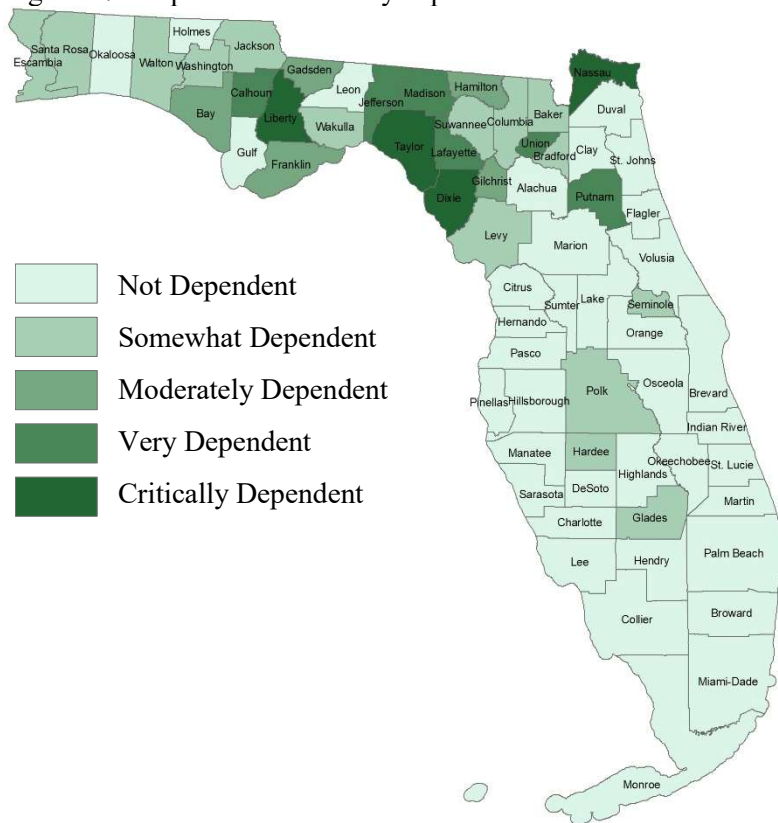




Figure 28. Map of Florida county dependence on the forest industry in terms of value added (GSP) contributions

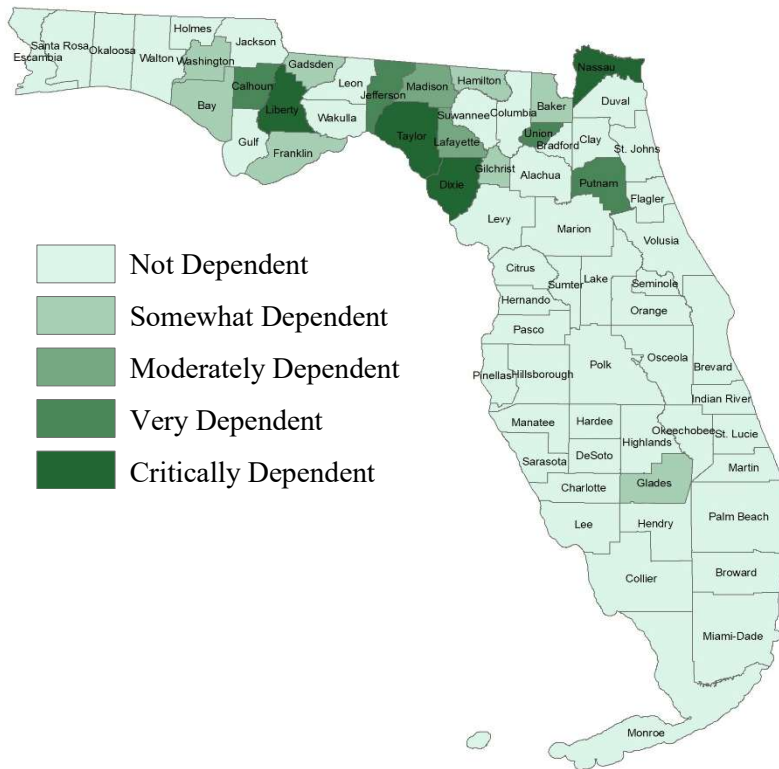


Table 25. Economic contributions of the forest industry in Florida in 2016 by urban-rural continuum classification

Urban-Rural Continuum Classification	Number Counties	Employment (Fulltime, Part-time Jobs)	Industry Output (M\$)	Value Added (M\$)	Labor Income (M\$)
Counties in metro areas of 1 million population or more	16	58,580	12,369	5,455	3,194
Counties in metro areas of 250,000 to 1 million population	19	28,633	5,689	2,408	1,480
Counties in metro areas of fewer than 250,000 population	9	11,376	2,230	977	594
<b>Total Metro areas</b>	<b>44</b>	<b>98,589</b>	<b>20,288</b>	<b>8,840</b>	<b>5,268</b>
Urban population of 20,000 or more, adjacent to a metro area	5	4,964	1,149	457	266
Urban population of 2,500 to 19,999, adjacent to a metro area	16	18,608	3,248	1,506	944
Completely rural or less than 2,500 urban population, adjacent to a metro area	1	1,635	322	133	83
Completely rural or less than 2,500 urban population, not adjacent to a metro area	1	309	38	21	14
<b>Total Non-Metro areas</b>	<b>23</b>	<b>25,515</b>	<b>4,757</b>	<b>2,117</b>	<b>1,307</b>
<b>Total All Areas</b>	<b>67</b>	<b>124,104</b>	<b>25,045</b>	<b>10,957</b>	<b>6,576</b>

Note: Florida does not have counties with: a) urban population of 20,000 or more, not adjacent to a metro area, or b) urban population of 2,500 to 19,999, not adjacent to a metro area.

Source of urban-rural continuum classification: USDA-Economic Research Service.

## **Forestry Contribution Analyses in Other States**

To put these economic contribution results in context, this section summarizes studies of the forest industry in other states. Over the past few decades, a variety of studies on the economic contributions of forestry-related products, activities or industries have been released that analyze the forest economy for many geographic regions in the U.S. These studies exist for nearly all U.S. states, some with regional or county-level breakdowns of results. There are also two studies that have been completed for heavily forested U.S. regions including the South and Northeast and two studies completed for the entire U.S. In addition, reports have been published by other nations and international organizations including Canada, Scotland, the United Kingdom, and the United Nations (Natural Resources Canada, 2016; CJC Consulting, 2015; Cogentsi and Public and Corporate Economic Consultants, 2004; Agrawal et al., 2013). The plethora of studies signifies the high level of interest in estimating the economic contributions of forestry and forestry related products. Such studies are valuable to state forestry agencies, university forestry programs, and forestry advocacy groups.

Table 26 summarizes the most recent forest industry economic contributions studies undertaken for each state or region available within the U.S., including the data year, report title, author affiliation, methodology used, and brief overview of the main results. These analyses have been completed using a wide range of definitions of economic impact or economic contribution as well as a variety of data sources, methods, and economic sectors included within the “forest economy”. Therefore, it is not possible to directly compare results across studies, and even some reports from the same institution cannot be compared across time or geographies. Some analyses report only the direct contributions of forestry-related sectors, whereas most report the total contributions including multiplier effects, however, many studies that report total contributions used different modeling methodologies to estimate the multipliers.

Recently, within academia, there has been a growing effort to communicate across institutions about the variety of methods being used to estimate the economic contributions of forestry and to harmonize the methodology and the reporting of results so that they are comparable (Henderson et al., 2017; Joshi et al. 2017). The goal of this effort is to create an agreed upon technique for consistently calculating the economic contributions of forestry and effectively communicating the results to state agencies, policymakers, and the general public.

Table 26. Summary of recent reports on economic contributions of the forest industry in other U.S. states and regions

Region of Analysis	Data Year	Title	Author Affiliation	Methodology	Results Summary
Alabama (state, counties, congressional districts)	2016	Economic Contributions of Alabama Agriculture and Forestry	Decision Innovation Solutions	IMPLAN <sup>©</sup>	Total economic contributions of forest products: <ul style="list-style-type: none"> <li>• \$17.0 billion in industry output</li> <li>• 54,543 jobs</li> <li>• \$5.7 billion in total value added</li> </ul>
Arkansas (state)	2012	Economic Contribution of the Agricultural Sector to the Arkansas Economy in 2012	Arkansas Agricultural Experiment Station University of Arkansas System Division of Agriculture	IMPLAN <sup>©</sup>	Total economic contribution of forestry: <ul style="list-style-type: none"> <li>• 24,736 jobs</li> <li>• \$3.243 billion in total value added</li> <li>• \$1.411 billion in total wages</li> </ul>
Georgia (state and regional commissions)	2015	2015 Economic Benefits of the Forestry Industry in Georgia	Georgia Forestry Commission and Enterprise Innovation Institute at Georgia Tech University	IMPLAN <sup>©</sup>	Total economic benefits of forestry: <ul style="list-style-type: none"> <li>• \$32.154 billion in industry output</li> <li>• 133,256 jobs</li> <li>• \$7.860 billion in wages and salaries</li> </ul>
Kentucky (state)	2016	Kentucky Forestry Economic Contribution Report 2016	University of Kentucky, Forestry Extension	IMPLAN <sup>©</sup>	Total economic contribution of forestry: <ul style="list-style-type: none"> <li>• \$14.400 billion in total industry output</li> <li>• 60,225 jobs</li> <li>• \$1.47 billion in earned income</li> </ul>
Louisiana (congressional districts)	2012	The Economic Contribution of Forestry and the Forest Products Industry on Louisiana's Congressional Districts	Louisiana State University Agricultural Center	IMPLAN <sup>©</sup>	Total economic contributions of forestry and forest products for all congressional districts: <ul style="list-style-type: none"> <li>• \$10.916 billion in industry output</li> <li>• 45,661 jobs</li> <li>• \$4.216 billion in total value added</li> </ul>
Mississippi (congressional districts)	2011	Forestry in Mississippi: The Economic Impact of the Forestry and the Forest Products Industry on Mississippi's Congressional Districts	Forest and Wildlife Research Center, Mississippi State University	IMPLAN <sup>©</sup>	Total economic impacts of forestry and forest products for all congressional districts: <ul style="list-style-type: none"> <li>• \$10.805 billion in industry output</li> <li>• 55,093 jobs</li> <li>• \$4.027 billion in total value added</li> </ul>
North Carolina (state and counties)	2013	North Carolina's Forests and Forest Products Industry by the Numbers, 2013	North Carolina State University	IMPLAN <sup>©</sup>	Total economic contribution of forestry and forest products: <ul style="list-style-type: none"> <li>• \$29.370 billion in total industry output</li> <li>• 144,815 jobs</li> <li>• \$10.930 billion in total value added</li> </ul>
Oklahoma (state)	2012	Economic Importance of Forestry in Oklahoma in 2012 – Factsheet	Oklahoma State University	IMPLAN <sup>©</sup>	Total economic contribution of forestry: <ul style="list-style-type: none"> <li>• \$4.500 billion in total industry output</li> <li>• 18,000 jobs</li> <li>• \$739 million in total wages</li> </ul>
South Carolina (state)	2015	Economic Contribution Analysis of South Carolina's Forestry Sector, 2017	Clemson University	IMPLAN <sup>©</sup>	Total contribution values for all forest products: <ul style="list-style-type: none"> <li>• \$21.045 billion in total industry output</li> <li>• 84,424 jobs</li> <li>• \$8.774 billion in total value added</li> </ul>
Tennessee (state and multi-county regions)	2013	Economic Contributions of Agriculture and Forestry in Tennessee, 2013	Agri-Industry Modeling & Analysis Group, University of Tennessee	Tennessee Agri-Industry Model (TNAIM) and IMPLAN <sup>©</sup>	Total economic impact of primary and secondary forestry: <ul style="list-style-type: none"> <li>• \$22.202 billion in total industry output</li> <li>• 95,514 jobs</li> <li>• \$8.601 billion in total value added</li> </ul>
Texas (state)	2015	Economic Impacts of the Forest Sector in Texas 2015 - Factsheet	Texas A&M Forest Service	IMPLAN <sup>©</sup>	Total economic impact of the forest sector: <ul style="list-style-type: none"> <li>• \$32.544 billion in industry output</li> <li>• 144,500 jobs</li> <li>• \$12.752 billion in total value added</li> </ul>
Virginia (state and counties/cities)	2011	The Economic Impacts of Agriculture and Forest Industries in Virginia	Weldon Cooper Center for Public Service, University of Virginia	IMPLAN <sup>©</sup>	Total economic impact of forestry: <ul style="list-style-type: none"> <li>• \$17 billion in total industry output</li> <li>• 103,800 jobs</li> <li>• \$8.8 billion in total value-added</li> </ul>
Southern Region	2011	The economic importance of forestry in the south - 2014	Mississippi State University Extension Service and Southern Regional Extension Forestry	IMPLAN <sup>©</sup>	Total economic importance of forestry: <ul style="list-style-type: none"> <li>• \$251.100 billion in total industry output</li> <li>• 1,117,230 jobs</li> <li>• \$53.864 billion in employee compensation</li> </ul>

Region of Analysis	Data Year	Title	Author Affiliation	Methodology	Results Summary
Connecticut (state)	2013	The Economic Importance of Connecticut's Forest-Based Economy 2015	North East State Foresters Association	Secondary data sources	Direct economic impact of forest-based industries: <ul style="list-style-type: none"> <li>• 2.181 billion in industry output</li> <li>• 8,200 jobs</li> </ul>
Delaware	2008	The Impact of Agriculture on Delaware's Economy	Department of Food and Resource Economics, University of Delaware	IMPLAN <sup>©</sup>	Total economic impact of forest products industry: <ul style="list-style-type: none"> <li>• \$1.161 billion in industry output</li> <li>• 4,065 fulltime equivalent jobs</li> <li>• \$427 million in total value added</li> </ul>
Illinois	2010	The Impact of the Forest Products Industry on the Illinois Economy: An Input-Output Analysis	Department of Forestry, Mississippi State University	IMPLAN <sup>©</sup>	Total economic impact of forest products industry: <ul style="list-style-type: none"> <li>• \$23.087 billion in industry output</li> <li>• 131,549 jobs</li> <li>• \$11.484 billion in total value added</li> </ul>
Indiana (state)	2012	Indiana's Hardwood Industry: Its Economic Impact – 2016 update	Division of Forestry, Indiana Department of Natural Resources and Indiana Department of Agriculture	RIMS II Multipliers	Total economic impact of forest and hardwood industry: <ul style="list-style-type: none"> <li>• \$13.514 billion in industry output</li> <li>• 95,753 jobs</li> </ul>
Maine (state)	2016	Economic Contribution of Maine's Forest Products Industry, 2014 and 2016 (estimated)	School of Forest Resources, University of Maine	IMPLAN <sup>©</sup>	Total economic contribution of forest products industry: <ul style="list-style-type: none"> <li>• \$8.5 billion in industry output</li> <li>• 33,538 jobs</li> <li>• \$2.7 billion in total value added</li> </ul>
Maryland (state, regions, and counties)	2005	The Impact of Resource Based Industries on the Maryland Economy	Business, Economic, and Community Outreach Network, Salisbury University	IMPLAN <sup>©</sup>	Total economic impact of forest and wood derivatives: <ul style="list-style-type: none"> <li>• \$4.682 billion in industry output</li> <li>• 29,309 jobs</li> </ul>
Michigan (state)	2013	Forest Products Industries' Economic Contributions to Michigan's Economy in 2013	Department of Forestry, Michigan State University	IMPLAN <sup>©</sup>	Total economic contribution of forest products industry: <ul style="list-style-type: none"> <li>• \$17.790 billion in industry output</li> <li>• 87,381 jobs</li> <li>• \$4.535 billion in labor income</li> </ul>
Minnesota (state)	2011	Economic Contribution of Minnesota's Forest Products Industry – 2011 edition	Division of Forestry, Minnesota Department of Natural Resources and Bureau of Business and Economic Research, University of Minnesota Duluth	IMPLAN <sup>©</sup>	Total economic contribution of forest products industry: <ul style="list-style-type: none"> <li>• \$17.100 billion in industry output</li> <li>• 86,775 jobs</li> <li>• \$6.900 billion in total value added</li> </ul>
Missouri (state and counties)	2016	Economic Contributions of Missouri Agriculture and Forestry	Decision Innovation Solutions	IMPLAN <sup>©</sup>	Total economic contribution of forest products industry: <ul style="list-style-type: none"> <li>• \$8.340 billion in industry output</li> <li>• 34,788 jobs</li> <li>• \$3.150 billion in total value added</li> </ul>
New Hampshire	2011	The Economic Importance of New Hampshire's Forest-Based Economy 2013	North East State Foresters Association	IMPLAN <sup>©</sup>	Total economic impact of forest and wood derivatives: <ul style="list-style-type: none"> <li>• \$2.404 billion in industry output</li> <li>• 12,818 jobs</li> </ul>
New York (state)	2011	The Economic Importance of New York's Forest-Based Economy 2013	North East State Foresters Association	IMPLAN <sup>©</sup>	Total economic impact of forestry and forest products: <ul style="list-style-type: none"> <li>• \$12.362 billion in industry output</li> <li>• 61,171 fulltime equivalent jobs</li> </ul>
Ohio (state and regions)	2010	Ohio's Forest Economy	Ohio State University Extension	IMPLAN <sup>©</sup>	Total economic impacts of forest products industry: <ul style="list-style-type: none"> <li>• \$22.050 billion in industry output</li> <li>• 118,031 jobs</li> <li>• \$9.017 billion in total value added</li> </ul>
Rhode Island (state)	2013	The Economic Importance of Rhode Island's Forest-Based Economy 2015	North East State Foresters Association	Secondary data sources	Direct economic impact of forest-based industries: <ul style="list-style-type: none"> <li>• \$710 million in industry output</li> <li>• 3,325 jobs</li> </ul>
Vermont (state)	2011	The Economic Importance of Vermont's Forest-Based Economy	North East State Foresters Association	IMPLAN <sup>©</sup>	Total economic impact of forestry and forest products: <ul style="list-style-type: none"> <li>• \$1.484 billion in industry output</li> <li>• 10,555 fulltime equivalent jobs</li> </ul>
West Virginia (state)	2004	West Virginia's Forests: Growing West Virginia's Future	Bureau of Business and Economic Research, West Virginia University	IMPLAN <sup>©</sup>	Total economic impact of wood products: <ul style="list-style-type: none"> <li>• \$4.015 billion in industry output</li> <li>• 29,800 jobs</li> <li>• \$703 million in employee compensation</li> </ul>

Region of Analysis	Data Year	Title	Author Affiliation	Methodology	Results Summary
Wisconsin (state)	2012	Wisconsin Forestry Facts: Economic Impact	Wisconsin Department of Natural Resources	IMPLAN <sup>©</sup>	Direct economic effects of forestry: <ul style="list-style-type: none"> <li>• 22.900 billion in industry output</li> <li>• 59,597 jobs</li> <li>• \$6.400 billion in total value added</li> </ul>
Northeast States (state)	2012	Northeast Economic Engine: Agriculture, Forest Products and Commercial Fishing	Department of Agricultural and Resource Economics at University of Connecticut and Farm Credit East	IMPLAN <sup>©</sup>	Total economic impact of forestry in the Northeast: <ul style="list-style-type: none"> <li>• \$25.456 billion in industry output</li> <li>• 112,936 fulltime equivalent jobs</li> </ul>
Kansas (state)	2014	Economic impact analysis of the Kansas forest and wood industry	Missouri Department of Conservation	IMPLAN <sup>©</sup>	Total economic contribution of forest products: <ul style="list-style-type: none"> <li>• \$2.100 billion in industry output</li> <li>• 9,000 jobs</li> <li>• \$490 million in payroll</li> </ul>
Wyoming	2014	The Contribution of the Forest Products Industry in Wyoming	Bureau of Business and Economic Research, University of Montana	RIMS II Multipliers	Total economic impact of forestry and forest products: <ul style="list-style-type: none"> <li>• 1,600 jobs</li> <li>• \$64 million in labor income</li> </ul>
Montana (state)	2013	2015 Timber Industry in Focus: Educational information regarding forestry and the forest products industry in Montana	Montana Wood Products Association	IMPLAN <sup>©</sup>	Direct economic impact of the forest industry: <ul style="list-style-type: none"> <li>• 7,000 jobs</li> <li>• \$296 million in labor income</li> </ul>
Idaho (state and counties)	2015	Economic Contributions of Idaho's Forest Products Industry 2015	Policy Analysis Group, University of Idaho	Unclear	Total economic impact of forest products industry: <ul style="list-style-type: none"> <li>• \$1.161 billion in industry output</li> <li>• 17,000 jobs</li> <li>• \$1.300 billion in total value added</li> </ul>
California (state)	1999	Forestry, Forest Industry, and Forest Products Consumption in California	Division of Agriculture and Natural Resources, University of California	IMPLAN <sup>©</sup>	Total economic impact of forest products industry: <ul style="list-style-type: none"> <li>• \$15.205 billion in industry output</li> <li>• 227,042 fulltime equivalent jobs</li> <li>• \$13.346 billion in total value added</li> </ul>
Oregon (state)	2012	2012 Forest Report: An economic snapshot of Oregon's forest sector	Mason, Bruce & Girard, Inc., Forest Econ, Inc., Oregon State University, Portland State University, and The Beck Group	Unclear	Direct economic impact of the forest sector: <ul style="list-style-type: none"> <li>• \$12.700 billion in industry output</li> <li>• 76,000 jobs</li> <li>• \$5.200 billion in wage and benefit income</li> </ul>
Washington	2005	Washington's Forests, Timber Supply, and Forest-Related Industries	Washington State Department of Natural Resources	Secondary data sources	Direct economic impact of forest-based industries: <ul style="list-style-type: none"> <li>• 16.000 billion in industry output</li> <li>• 45,000 jobs</li> <li>• \$2.000 billion in wages</li> </ul>
United States (nation, multi-state regions, and states)	2013	The Economic Impact of Privately-Owned Forests in the United States	Forest2Market, Inc.	RIMS II Multipliers	Total economic impact of forestry-related businesses: <ul style="list-style-type: none"> <li>• \$112.650 billion in payroll</li> <li>• 2,728,784 jobs</li> <li>• \$320.522 billion in shipments</li> </ul>
United States (nation and states)	unclear	Industry Economic Impact	American Forest & Paper Association	unclear	Total economic impact of forest and paper products: <ul style="list-style-type: none"> <li>• \$54.294 billion in payroll income</li> <li>• 937,500 jobs</li> <li>• \$282.011 billion in shipments</li> </ul>

## **Comparisons to Other Agriculture Industries in Florida**

As further context for these results for the forest industry in Florida, we provide comparisons to other recent studies on agriculture related industries in Florida. The economic contributions of all agricultural, natural resource and food industries in Florida were recently evaluated for 2015 (Hodges et al., 2017). The environmental horticulture industry, including greenhouse and nursery production, landscape services and retail lawn and garden centers had combined output contributions of \$14.60 billion, value added of \$8.661 billion and employment 182,546 jobs; fruit and vegetable farming and processing/manufacturing had output, value added and employment contributions of \$12.12 billion, \$6.03 billion and 90,050 jobs, respectively; livestock farming and animal products manufacturing had contributions of \$7.16 billion, \$1.92 billion and 34,442 jobs; sugarcane farming and refined sugar manufacturing had contributions \$3.98 billion, \$1.64 billion and 18,765 jobs; fishing and seafood products manufacturing had contributions of \$1.56 billion, \$730 million and 13,745 jobs; grain and oilseed farming and processing had contributions of \$1.09 billion, \$332 million and 3,702 jobs. In addition, a special study prepared on the environmental horticulture industry in 2015 for the Florida Nursery Growers and Landscape Association that included some additional economic sectors for allied industries estimated somewhat higher total economic contributions at \$21.08 billion in industry output, \$13.17 billion in value added and 232,648 jobs, (Hodges et al, 2016). Finally, a recent study on the iconic Florida citrus industry in the 2015-16 marketing year, prepared for the Florida Department of Citrus, estimated its economic contributions at \$8.63 billion in output, \$4.23 billion in value added, and 45,422 jobs (Court et al., 2017). Thus, the output contributions of the Florida forest industry estimated in this study are similar to the estimates for the environmental horticulture industry and are larger than Florida's iconic citrus industry.

## Economic Contributions of Forest-Based Recreation in Florida

Data on visitation to public forestlands in Florida were compiled to estimate economic contributions of forest-based recreational spending. The spending by visitors to public lands in 2015 was estimated at \$617 M, including \$241 M for nonresident visitors and \$376 M for Florida residents (Table 27). These estimates were based on the average spending per visitor-day reported for domestic visitors traveling by automobile (VISIT FLORIDA®, 2016). Expenditures for various categories (lodging, food and beverage, transportation, entertainment, shopping, and other) were assigned to appropriate IMPLAN® industry sectors for economic contribution analysis. It was assumed that 30 percent of visitors to public recreation areas were nonresidents from outside the state, based on information from the Florida Forest Service for campground reservations (Lorna Radcliff, personal communication). Only recreational spending by nonresident visitors was considered in this analysis as new final demand to the state, while spending by Florida residents was assumed to be a transfer of discretionary spending. Total economic contributions of nonresident visitor spending at public forest-based recreation areas in Florida in 2015 were estimated at 6,261 jobs, \$682 M in industry output (revenues), \$405 M in value added (GSP), \$249 M in labor income, \$38 M in state and local taxes, and \$64 M in federal taxes (Table 28).

Table 27. Public forestland visitor expenditures in Florida residents and nonresidents, 2015

Expense Category	IMPLAN® Industry Sector	Amount per person- day	Expanded Amount (Million \$)		
			Florida Residents	Non- residents	Total All Visitors
Lodging	499 Hotels and motels, including casino hotels	\$44.70		\$99.22	\$99.22
Food & Beverage	501 Full-service restaurants	\$33.00	\$155.415	\$73.25	\$228.67
Transportation	402 Retail - Gasoline stores	\$18.10	\$85.243	\$40.18	\$125.42
Entertainment & Recreation	496 Other amusement and recreation industries	\$18.60	\$87.597	\$41.29	\$128.89
Shopping	404 Retail sporting goods, hobby, musical instrument and book stores	\$17.30	\$81.475	\$38.40	\$119.88
Other Expenses		\$3.70	\$17.425	\$8.21	\$25.64
<b>Total</b>		<b>\$135.40</b>	<b>\$427.155</b>	<b>\$300.56</b>	<b>\$727.71</b>

Source for visitors spending per person-day: VISIT FLORIDA® (2016). Lodging expenditures not counted for Florida residents.

Table 28. Economic contributions of recreational expenditures by nonresident visitors to public forestlands in Florida, 2015

Impact Type	Employment (Fulltime, Part-time Jobs)	Labor Income	Value Added	Industry Output	State-Local Taxes	Federal Taxes
Direct Effect	3,355	97	148	240	20.4	24.9
Indirect Effect	630	30	53	96	4.2	7.9
Induced Effect	3,833	183	305	516	23.2	47.4
<b>Total Effect</b>	<b>7,818</b>	<b>311</b>	<b>505</b>	<b>851</b>	<b>47.8</b>	<b>80.3</b>

Values in millions 2016 dollars. Includes visitors to State Forests, National Forests, and Wildlife Management Areas.

Source: IMPLAN® model for the State of Florida (2015) customized for forest industry sectors.

## Ecosystem Service Values of Florida Forests

In addition to commercial commodities and services and recreational amenities, there are many other functions and services provided by forests in Florida, collectively known as ecosystem services, that represent the process and condition through which the forest supports and satisfies human life (Daily, 1997). Forest ecosystem services include, but are not limited to:

- **Provisioning services:** the provision of food, water, raw materials, fuel, and genetic, medicinal and ornamental resources
- **Regulating services:** climate regulation, regulation of water flows and quality, regulation of gases, carbon sequestration, waste treatment, and erosion control
- **Cultural services:** such as recreation, aesthetics, education, inspiration, spiritual experience, sense of place, and cognitive development
- **Supporting services:** Refugia, biological control, nursery services, soil formation, nutrition cycling, and pollination

(United Nations, 2014; deGroot et al., 2012)

Although these forest ecosystem services are important and many of them are well-recognized, they are often provided as public or quasi-public goods and their values are not readily quantifiable since they are not reflected by market prices. However, as with the study of other non-market goods and services, economists and natural resource scientists have used revealed preference and stated preference methods, such as contingent valuation methods, hedonic pricing methods, travel cost methods, and unit day cost methods, to value the provision of ecosystem services. When time or budget constraints preclude the collection of original data specific to a particular study area of ecosystem service, it is a common and acceptable practice for researchers to use value transfer methods, whereby they use values for ecosystem services estimated for one location to estimate the value of similar services in another location. The validity of this approach depends on the quality of the original valuation study as well as the degree of similarity between the relevant locations and ecosystem services.

Researchers have analyzed the value of ecosystem goods and services specific to forestlands for many years and there now exist review studies and meta-analyses that aggregate and analyze the results from a large number of individual analyses in an effort to harmonize the unit values across studies for comparisons, to provide a range or average of values for a particular ecosystem, and to statistically analyze the results of past valuation studies to aid in value transfer exercises (Ninan and Inoue, 2013; de Groot et al., 2012; Barrio and Loureiro, 2010; Zandersen and Tol, 2009; and Pearce, 2001). Wang and Fu (2013) also provide an overview of some of the tradeoffs that exist between different ecosystem services provided by forests as well as considerations for sustainable management of forest ecosystem services.

One of the most comprehensive reviews of ecosystem services to date screened 1,350 values from a large global database of ecosystem service values generated by a global initiative focused on “making nature’s values visible”, The Economics of Ecosystems and Biodiversity (TEEB, 2010; deGroot et al., 2012). The final



analysis included 175 value estimates for goods or services provided by forest or woodland ecosystems. The average values per acre per year for a variety of ecosystem services in temperate forests, woodlands, and tropical forests are presented in Table 29. The total annual value of ecosystem services provided by Florida forestlands (in right column) were estimated using the global average per acre values for forest-based ecosystem services for tropical and temperate forests together with 2015 acreage estimates for tropical hardwood forestlands (698,663 acres) and other forestlands (16,457,733 acres) in Florida. Using this method, Florida forests are estimated to provide ecosystem services valued at \$1,438 per acre per year, or over \$24 B in aggregate, in 2016 dollars.

Although de Groot et al. (2012) provided a comprehensive review of global forest ecosystem service values, none of the forest or woodland sites originally analyzed were in Florida and very few of them were in the U.S. An analysis of the non-timber ecosystem services provided by private forests in Georgia gives an average per-acre value for ecosystem services including gas and climate regulation, water regulation and supply, pollination, habitat/refugia, and aesthetic and non-use (Moore et al., 2011) and provides values that are more regionally representative. Using these data, Florida forests are estimated to provide over \$32 B in non-timber ecosystem services, in 2016 dollars, as shown in Table 30.

There have been very few site-specific valuation studies done regarding the ecosystem services provided by Florida's forests. However, a few analyses of certain ecosystem services and forest-related policy programs have been undertaken and others can be qualitatively assessed using secondary data for ecosystem services that are particularly relevant to Florida, including environmental services and recreation and tourism services. Although the values from these studies are not appropriate for value transfer methods and have not been applied across all forestlands in Florida as part of this analysis, they still show the importance and the relative value of some forest ecosystem services for certain forestland types in Florida.

One study summarized the net present value of water conservation, carbon storage, and wildlife conservation on Florida Stewardship Program (FSP) lands. Survey results indicate a cumulative willingness to pay by Florida residents of between \$17 and \$335 million to protect water quality and noted that the willingness to pay values are higher for voluntary programs, like FSP, that do not require the public acquisition of property. They also found an average total value of carbon stored on FSP lands that ranged from \$300,000 to \$578,000 in average sized parcels (237-395 acres) and a wildlife conservation value of \$54 million on FSP lands, which is the value that is expected to be saved by not converting wildlife habitat to another use that could be allocated for activities like wildlife-associated recreation (Godfrey et al., 2013). Another study investigated the potential for policy processes as influential drivers of willingness to pay values for ecosystem services by analyzing forest-water resource protection in Florida. Researchers found that forest-water protection programs provide an annual average of \$154 to \$230 million in clean water benefits, a significant portion of which was associated with the policy process used for implementation (Kreye et al., 2016).

Table 29. Global average forest ecosystem service values and estimated value of Florida forests

Ecosystem Service Category	Temperate Forests	Woodlands	Tropical Forests	Weighted Average for Florida	Aggregate Value of Florida Forests (\$M)
	----- 2016 Dollars Per Acre Per Year -----				
<b>Provisioning</b>	<b>311</b>	<b>117</b>	<b>846</b>	<b>332</b>	<b>5,704</b>
Food	138	24	93	137	2,343
Water	88	-	13	85	1,464
Raw Materials	84	79	39	82	1,406
Genetic Resources	-	-	6	0.2	4
Medicinal Resources	-	-	696	28	487
Ornamental Resources	-	15	-	-	-
<b>Regulating</b>	<b>227</b>	<b>24</b>	<b>1,171</b>	<b>266</b>	<b>4,559</b>
Air Quality Regulation	-	-	6	0.2	4
Climate Regulation	70	3	946	106	1,819
Disturbance Moderation	-	-	31	1	21
Regulation of Water Flows	-	-	158	6	111
Waste Treatment	3	-	3	3	55
Erosion Prevention	2	6	7	3	43
Nutrient Cycling	43	-	1	41	710
Pollination	-	14	14	1	10
Biological Control	109	-	5	105	1,794
<b>Habitat</b>	<b>399</b>	<b>591</b>	<b>18</b>	<b>384</b>	<b>6,581</b>
Nursery	-	589	7	0.3	5
Genetic Diversity	399	1	11	383	6,576
<b>Cultural</b>	<b>458</b>	<b>3</b>	<b>401</b>	<b>456</b>	<b>7,824</b>
Recreation	458	3	401	456	7,817
Cognitive Development	0.5	-	-	0.4	8
<b>Total All Services</b>	<b><u>1,395</u></b>	<b><u>735</u></b>	<b><u>2,437</u></b>	<b><u>1,438</u></b>	<b><u>24,669</u></b>

Values are expressed in 2016 dollars.

Source: adapted from de Groot et al. (2012).

Table 30. Average forest ecosystem service values per acre-year for Georgia and estimated value of Florida forests

Ecosystem Service Category	Average Value (\$/acre/year)	Aggregate Value of Florida Forests (\$M per year)
Gas and Climate Regulation	37	639
Water Regulation and Supply	1015	17,418
Pollination	170	2,922
Habitat/Refugia	102	1,752
Aesthetic and Non-use	559	9,593
<b>Total</b>	<b><u>1884</u></b>	<b><u>32,323</u></b>

Values are expressed in 2016 dollars. Source: adapted from Moore et al (2011).

## Literature and Information Sources Cited

- Agrawal, A., B. Cashore, R. Hardin, G. Shepherd, C. Benson, and D. Miller. Economic Contributions of Forests. Background Paper 1 prepared for the United Nations Forum of Forests. United Nations, 2013, available at: [http://www.un.org/esa/forests/pdf/session\\_documents/unff10/EcoContrForests.pdf](http://www.un.org/esa/forests/pdf/session_documents/unff10/EcoContrForests.pdf)
- American Forest and Paper Association. Economic Impact. Interactive Web Resource, American Forest and Paper Association, 2015, available at: <http://www.afandpa.org/our-industry/economic-impact>
- Anderson, J.L, and M.S. Crandall. Economic Contribution of Maine's Forest Products Industry, 2014 and 2016 (estimated), Maine Forest Products Council, <http://maineforest.org/wp-content/uploads/2016/08/Economic-Impact-report-1.pdf>
- Atchison, B. Forest Industry Adds \$2.1 Billion to Kansas, Kansas Forests Service, Kansas State University, Kansas Canopy Issue #59, page 6, 2016, available at: [https://www.kansasforests.org/events/news\\_docs/canopy/2016/2016%20Summer%20KS%20Canopy\\_Final.pdf](https://www.kansasforests.org/events/news_docs/canopy/2016/2016%20Summer%20KS%20Canopy_Final.pdf)
- Awokuse, T.O., T.W. Ilvento, and Z. Johnston. The Impact of Agriculture on Delaware's Economy, College of Agriculture and Natural Resources, University of Delaware, 2010, available at: <http://ag.udel.edu/deagimpact/AgInDeEconB.pdf>
- Ballweg, J. Wisconsin Forestry Facts: Economic Impact, Wisconsin Department of Natural Resources, 2014, available at: <http://dnr.wi.gov/about/documents/FactSheets/FactSheetForestryEconomy.pdf>
- Barrio, M. and M.L. Loureiro. A Meta-Analysis of Contingent Valuation Forest Studies, *Ecological Economics* 69: 1023-1030, 2010, available at: <http://www.sciencedirect.com/science/article/pii/S0921800909004650>
- Brenner, A., C. Lopez, M. Yoders, J. Cothrun, M. Milligan, and B. Condon. Comprehensive Statewide Forest Inventory Analysis and Study (CSFIAS) Updated 2015: Executive Report, Florida Forestry Service, Florida Department of Agriculture and Consumer Services, 2016, available at: <http://www.freshfromflorida.com/Divisions-Offices/Florida-Forest-Service/Our-Forests/Working-Forest/Comprehensive-Statewide-Forest-Inventory-Analysis-and-Study-CSFIAS-2015>.
- Business, Economic, and Community Outreach Network. The Impact of Resource Based Industries on the Maryland Economy. Salisbury University, 2006, available at: <http://www.marbidco.org/Beacon%20Study.pdf>
- Childs, R.A. West Virginia's Forests: Growing West Virginia's Future, Bureau of Business and Economic Research, West Virginia University, 2005, available at: <http://www.wvforestry.com/Economic%20Impact%20Study.pdf>
- CJC Consulting. The economic contribution of the forestry sector in Scotland, Forestry Commission Scotland, 2015, available at: <http://scotland.forestry.gov.uk/images/corporate/pdf/economic-contribution-forestry-2015.pdf>
- Cogentsi and Public and Corporate Economic Consultants, The Economic Impact of British Forestry. Ref: P:\1998\810\06fc\REP\2004\Forestry.doc, Forestry Commission, 2004, available at [http://www.forestry.gov.uk/pdf/GBforestrymultiplierreport.pdf/\\$FILE/GBforestrymultiplierreport.pdf](http://www.forestry.gov.uk/pdf/GBforestrymultiplierreport.pdf/$FILE/GBforestrymultiplierreport.pdf)
- Cook, P.S., R. Pokharel, G. Alward, D.R. Becker, and G. Latta. Economic Contributions of Idaho's Forest Products Industry 2015, Station Bulletin 104, No. 1090, Idaho Forest, Wildlife and Range Experiment Station, University of Idaho, 2017, available at: <https://www.uidaho.edu/~media/UIIdaho-Responsive/Files/cnr/PAG/fpi-reports/Forest-Products-Industry-report-2016-Jan-2017.ashx>
- Court, C.D., A.W. Hodges, M. Rahmani and T. H. Spreen. Economic Contributions of the Florida Citrus Industry in 2015-16. Sponsored project report to the Florida Department of Citrus, University of Florida, Food and Resource Economics Department, Gainesville, 35 pages, May 9, 2017, available at [http://fred.ifas.ufl.edu/pdf/economic-impact-analysis/Economic\\_Impacts\\_of\\_the\\_Florida\\_Citrus\\_Industry\\_2015\\_16.pdf](http://fred.ifas.ufl.edu/pdf/economic-impact-analysis/Economic_Impacts_of_the_Florida_Citrus_Industry_2015_16.pdf)

Daily, G. *Nature's Services: Societal Dependence on Natural Ecosystems*. Island Press, Washington (DC), 1997.

Decision Innovation Solutions. Economic Contributions of Alabama Agriculture and Forestry, Decision Innovation Solutions, 2016, available at:

<http://forestryimpacts.net/reports/alabama/FINAL%20Alabama%20Ag%20-%20Forestry%20Economic%20Contribution%20Study-1.pdf>

Decision Innovation Solutions. Economic Contributions of Missouri Agriculture and Forestry, Missouri Department of Agriculture, 2016, available at: <http://agriculture.mo.gov/economicimpact/county-pdf/MissouriAgForestryEconomicContributionStudy.pdf>

Deckard, D.L. and J.A. Skurla. Economic Contribution of Minnesota's Forest Products Industry – 2011 Edition, Minnesota Department of Natural Resources, 2011, available at:

<http://files.dnr.state.mn.us/forestry/um/economiccontributionMNforestproductsindustry2011.pdf>

deGroot, R., L. Brander, S. van der Ploeg, R. Costanza, F. Bernard, L. Braat, M. Christie, N. Crossman, A. Ghermandi, L. Hein, S. Hussain, P. Kumar, A. McVittie, R. Portela, L.C. Rodriguez, P. ten Brink, P. van Beukering. Global Estimates of the Value of Ecosystems and their Services in Monetary Units, *Ecosystem Services* 1: 50-61, 2012, available at: <http://www.sciencedirect.com/science/article/pii/S2212041612000101>

Dineen, C. Florida welcomed nearly 113 million tourists in 2016, Orlando Sentinel, February 16, 2017, available at: <http://www.orlandosentinel.com/travel/os-bz-visit-florida-tourism-2016-story.html>

Economic Benefits of the Forestry Industry in Georgia, 2015. Enterprise Innovation Institute. Georgia Institute of Technology, 2015, available at:

<http://forestryimpacts.net/reports/georgia/2015%20Economic%20Benefits%20Report%20FINAL.pdf>

Economic Contribution of the Agricultural Sector to the Arkansas Economy in 2012, Arkansas Agricultural Experiment Station, University of Arkansas System, Division of Agriculture, 2014, available at:

[https://division.uaex.edu/Economic\\_Contribution\\_2014.pdf](https://division.uaex.edu/Economic_Contribution_2014.pdf)

Economic Impacts of the Forest Sector in Texas, Texas A&M Forest Service, 2017, available at:

<http://forestryimpacts.net/reports/texas/Texas2015.pdf>

Economic Importance of Forestry in Oklahoma in 2012 – Factsheet. Oklahoma State University, 2014, available at: <http://forestryimpacts.net/reports/oklahoma/Forestry%20L-462.pdf>

Forest2Market, Inc.. Florida timber prices, 2014, available at <http://forest2market.com/>.

Forest Products Network. Listing of wood-using mills (2016) and secondary forest product manufacturers (2014), by state, available at <http://www.forestproductslocator.org/welcome>.

Godfrey, R., C. Demers, F. Escobedo, D. Adams, and M. Andreu. *The Green Value of Your Woods: A Summary of Ecosystem Services Provided by Stewardship Lands in Florida*, University of Florida, Institute for Food and Agricultural Sciences, EDIS FOR313, available at: <https://edis.ifas.ufl.edu/pdf/FR/FR38100.pdf>

Henderson, J., O. Joshi; S. Tanger, L. Boby, W. Hubbard, M. Pelkki, D. Hughes, T. McConnell, W. Miller, J. Nowak, C. Becker, T. Adams, C. Altizer, R. Cantrell, J. Daystar, B. Jackson, J. Jeuck, S. Mehmood, and P. Tappe. Standard Procedures and Methods for Economic Impact and Contribution Analysis in the Forest Products Sector, *Journal of Forestry* 115 (2): 112-116, 2017, available at: <http://www.ingentaconnect.com/contentone/saf/jof/2017/00000115/00000002/art00006>

Henderson, J., L. Boby, and B. Hubbard. The Economic Importance of Forestry in the South – 2014, Southern Regional Extension Forestry, SREF-FE-002, 2014, available at: <http://www.sref.info/resources/publications/the-economic-importance-of-forestry-in-the-south-2014>

- Henderson, J.E. and I.A. Munn. The Economic Impact of Forestry and the Forest Products Industry on Mississippi's Congressional Districts, Forest and Wildlife Research Center, Research Bulletin FO 449, Mississippi State University, 2013, available at: [http://www.fwrc.msstate.edu/pubs/congressional\\_district.pdf](http://www.fwrc.msstate.edu/pubs/congressional_district.pdf)
- Henderson, J.E. and I.A. Munn. Forestry in Illinois – The Impact of the Forest Products Industry on the Illinois Economy: An Input-Output Analysis, Illinois Forestry Development Council, 2012, available at: [http://ifdc.nres.illinois.edu/wp-content/uploads/2013/10/illinois-forest-products-impact\\_2012.pdf](http://ifdc.nres.illinois.edu/wp-content/uploads/2013/10/illinois-forest-products-impact_2012.pdf)
- Hodges, A.W., H. Khachatryan, M. Rahmani and C.D. Court. Economic Contributions of the Environmental Horticulture Industry in Florida in 2015. Sponsored project report to Florida Nursery Growers and Landscape Association. University of Florida, Food and Resource Economics Department, Gainesville, 57 pages, Nov. 22, 2016, available at <http://fred.ifas.ufl.edu/pdf/EconContEnvirHortIndFL2015-11-15-16.pdf>
- Hodges, A.W., M. Rahmani and C.D. Court. Economic Contributions of Agriculture, Natural Resources and Food Industries in Florida in 2015. In-press, University of Florida-IFAS, 2017.
- Hodges, A.W. and M. Rahmani. Economic Contributions of Agriculture, Natural Resources and Food Industries in Florida in 2014. EDIS Document FE993, University of Florida-IFAS, 2016, available at: <http://fred.ifas.ufl.edu/pdf/Extension/FE993FullReport.pdf>
- Hodges, A.W., M. Rahmani, and T.J. Stevens, Economic Contributions of Agriculture, Natural Resources, and Food Industries in Florida in 2013. EDIS Document FE954, University of Florida-IFAS, 2015, available at: <http://edis.ifas.ufl.edu/FE969>
- Hodges, A.W., W.D. Mulkey, J.R. Alavalapati, D.R. Carter and C.F. Kiker. Economic Impacts of the Forest Industry in Florida, 2003. Sponsored project report to the Florida Forestry Association. University of Florida, Food and Resource Economics Department, 2005, 47 pages, available at: <http://fred.ifas.ufl.edu/pdf/economic-impact-analysis/FE53800.pdf>
- Godfrey, R. C. Demers, F. Escobedo, D. Adams, and M. Andreu. The Green Value of Your Woods: A Summary of Ecosystem Services Provided by Florida Stewardship Program Lands in Florida, EDIS Document FOR313, University of Florida-IFAS, 2013, available at: <http://edis.ifas.ufl.edu/fr381>
- IMPLAN Group, LLC. *IMPLAN*® economic impact analysis and social accounting software, and 2015 regional economic data for the State of Florida. Huntersville, NC, 2014, <http://www.implan.com/>
- Jefferies, H.M. The Economic Impact of Privately-Owned Forests in the United States, Forest2Market, Inc., 2016, available at: [http://forestryimpacts.net/reports/southern-region/Forest2Market\\_Economic\\_Impact\\_of\\_Privately-Owned\\_Forests\\_April\\_2016.pdf](http://forestryimpacts.net/reports/southern-region/Forest2Market_Economic_Impact_of_Privately-Owned_Forests_April_2016.pdf)
- Johnson, K. and J. Kort. 2004. Redefinition of the BEA Economic Areas. *Survey of Current Business*, Nov. 2004. United States Department of Commerce, Bureau of Economic Analysis, Washington, D.C. <http://www.bea.gov/scb/pdf/2004/11November/1104Econ-Areas.pdf>
- Joshi, O., J. Henderson, S. Tanger, L. Boby, M. Pelkki, and E. Taylor. A Synopsis of Methodological Variations in Economic Contribution Analyses for Forestry and Forest-Related Industries in the US South, *Journal of Forestry* 115 (2): 112-116, 2017, available at: <http://www.ingentaconnect.com/contentone/saf/jof/2017/00000115/00000002/art00002>
- Khanal, P.N., T.J. Straka, and D.B. Willis. Economic Contribution Analysis of South Carolina's Forestry Sector, 2017, South Carolina Forestry Commission, 2017, available at: <http://forestryimpacts.net/reports/south-carolina/SCForestryEconomicImpactStudy2017.pdf>
- Kreye, M.M., D.C. Adams, F.J. Escobedo, and J.R. Soto. Does Policy Process Influence Public Values for Forest-Water Resource Protection in Florida?, *Ecological Economics* 129: 122-131, 2016, available at: <http://www.sciencedirect.com/science/article/pii/S0921800915302135>
- Laaksonen-Craig, S., G.E. Goldman, and W. McKillop. Forestry, Forest Industry, and Forest Products Consumption in California, Publication 8070, Division of Agriculture and Natural Resources, University of California, 2003, available at: <http://anrcatalog.ucanr.edu/pdf/8070.pdf>

- Leefers, L.A. Forest Products Industries Economic Contributions to Michigan's Economy in 2013, Michigan Department of Natural Resources, Forestry Resources Division, IC4006-1, 2016, available at: [https://www.michigan.gov/documents/dnr/FPIECME2013-Leefers\\_513869\\_7.pdf](https://www.michigan.gov/documents/dnr/FPIECME2013-Leefers_513869_7.pdf)
- Lopez, R., N. Plesha, and B. Campbell. Northeast Economic Engine: Agriculture, Forest Products and Commercial Fishing, Farm Credit East, 2015, available at: [http://www.are.uconn.edu/index\\_42\\_1981703122.pdf](http://www.are.uconn.edu/index_42_1981703122.pdf)
- McConnell, E. Ohio's Forest Economy, OhioOnline Agriculture and Natural Resources, Ohio State University Extension, Factsheet F-80, 2012, available at: <http://ohioline.osu.edu/factsheet/F-80>
- McConnell, T.E., J. Jeuck, R. Bardon, and D. Hazel. North Carolina's Forests and Forest Products Industry by the Numbers, 2013, North Carolina Cooperative Extension Service, 2016, available at: <http://forestryimpacts.net/reports/north-carolina/north-carolinas-forest-and-forest-products-industry-by-the-numbers-handout.pdf>
- McIver, Chelsea P., K.C. Marcille, T.A. Morgan. The Contribution of the Forest Products Industry in Wyoming, Part 3: Sales, Employment and Multiplier Effect, Forest Industry Brief No. 5, Missoula, MT: University of Montana, Bureau of Business and Economic Research, 2017, available at: <http://www.bber.umt.edu/pubs/forest/fidacs/WY2014.3%20Industry.pdf>
- Menard, J., B. English, and K. Jensen. Economic Contributions of Agriculture and Forestry in Tennessee, 2013, Institute of Agriculture, University of Tennessee, RS# 16-002, 2016, available at: [http://aimag.ag.utk.edu/pubs/Bi\\_Annual\\_2013.pdf](http://aimag.ag.utk.edu/pubs/Bi_Annual_2013.pdf)
- Miller, R. E. and P.D. Blair. *Input-Output Analysis: Foundations and Extensions*, Second Edition. Cambridge University Press, Cambridge, UK, 2009.
- Montana Wood Products Association, 2015. 2015 Timber Industry in Focus: Educational Information Regarding Forestry and the Forest Products Industry in Montana, available at: <http://www.montanaforests.com/catalogs/catalog142/section361/file2601.pdf>
- Moore, R., T. Williams, E. Rodriguez, and J. Hepinstall- Cymmerman. Quantifying the value of non-timber ecosystem services from Georgia's private forests. Athens, GA: University of Georgia, 2011.
- Natural Resources Canada. How Does the Forest Industry Contribute to the Economy? Web Resource, Natural Resources Canada, 2016, available at <http://www.nrcan.gc.ca/forests/report/economy/16517>
- Ninan, K.N. and M. Inoue. Valuing Forest Ecosystem Services: What We Know and What We Don't, *Ecological Economics* 93: 137-149, 2013, available at: <http://www.sciencedirect.com/science/article/pii/S0921800913001638>
- North East State Foresters Association. The Economic Importance of Connecticut's Forest-Based Economy 2015, North East State Foresters Association, 2015, available at: [http://www.nefainfo.org/uploads/2/7/4/5/27453461/connecticuts\\_forest\\_based\\_economy\\_4.2.15.pdf](http://www.nefainfo.org/uploads/2/7/4/5/27453461/connecticuts_forest_based_economy_4.2.15.pdf)
- North East State Foresters Association, 2015. The Economic Importance of Rhode Island's Forest-Based Economy 2015, available at [http://www.nefainfo.org/uploads/2/7/4/5/27453461/rhode\\_island\\_forest\\_based\\_economy\\_4.20.15\\_final\\_.pdf](http://www.nefainfo.org/uploads/2/7/4/5/27453461/rhode_island_forest_based_economy_4.20.15_final_.pdf)
- North East State Foresters Association. The Economic Importance of New Hampshire's Forest-Based Economy 2013, available at [http://www.nefainfo.org/uploads/2/7/4/5/27453461/nefa13\\_econ\\_importance\\_nh\\_final\\_web.pdf](http://www.nefainfo.org/uploads/2/7/4/5/27453461/nefa13_econ_importance_nh_final_web.pdf)
- North East State Foresters Association. The Economic Importance of New York's Forest-Based Economy 2013, available at [http://www.nefainfo.org/uploads/2/7/4/5/27453461/nefa13\\_econ\\_importance\\_newyork\\_final\\_web.pdf](http://www.nefainfo.org/uploads/2/7/4/5/27453461/nefa13_econ_importance_newyork_final_web.pdf)

North East State Foresters Association. The Economic Importance of Vermont's Forest-Based Economy 2013, available at [http://www.nefainfo.org/uploads/2/7/4/5/27453461/nefa13\\_econ\\_importance\\_vt\\_final\\_web\\_jan29.pdf](http://www.nefainfo.org/uploads/2/7/4/5/27453461/nefa13_econ_importance_vt_final_web_jan29.pdf)

Pearce, D.W. The Economic Value of Forest Ecosystems, *Ecosystem Health* 7(4): 284-296, 2001, available at: <https://www.cbd.int/doc/external/academic/forest-es-2003-en.pdf>

Rasmussen, M., R. Lord, B. Vickery, C. McKetta, D. Green, M. Green, T. Potiowsky, D. Adams, G. Latta, R. Andersen, B. Mitchell, and D. Mak. 2012 Forest Report: An Economic Snapshot of Oregon's Forest Sector, Oregon Forest Resources Institute, 2014, <http://library.state.or.us/repository/2013/201301171606454/index.pdf>

Rephann, T. The Economic Impacts of Agriculture and Forest Industries in Virginia, Weldon Cooper Center for Public Service, University of Virginia, 2013, available at: [http://www.dof.virginia.gov/infopubs/\\_outside-pubs/The-Economic-Impact-Of-Agriculture-And-Forestry\\_2013\\_outpub.pdf](http://www.dof.virginia.gov/infopubs/_outside-pubs/The-Economic-Impact-Of-Agriculture-And-Forestry_2013_outpub.pdf)

Sardana, K., J.C. Bergstrom, and J.M. Bowker. Valuing Setting-based Recreation for Selected Visitors to National Forests in the Southern United States, *Journal of Environmental Management* 183: 972-979, 2016, available at: <http://www.sciencedirect.com/science/article/pii/S0301479716307137>

Settle, J., C. Gonso, and M. Seidl. Indiana's Hardwood Industry: Its Economic Impact – 2016 Update, Indiana Department of Agriculture, 2016, available at: [https://www.in.gov/isda/files/Indiana\\_Hardwoods\\_and\\_Their\\_Economic\\_Impact.pdf](https://www.in.gov/isda/files/Indiana_Hardwoods_and_Their_Economic_Impact.pdf)

Shrestha, R.K., T.V. Stein, and J. Clark. Valuing nature-based recreation in public natural areas of the Apalachicola River region, Florida, *Journal of Environmental Management* 85: 977-985, 2007, available at: <http://www.sciencedirect.com/science/article/pii/S0301479706003689>

Stein, T., N. Kil, A. Frank, A.E. Adams, D.C. Adams, and F.J. Escobedo. Public Land Management Agencies and Nonindustrial Private Forest Landowners' Perceptions towards Ecosystem Services, University of Florida, Institute for Food and Agricultural Sciences, EDIS FOR312, available at: <http://edis.ifas.ufl.edu/fr380>

Stringer, J. B. Thomas, B. Ammerman, T. Ochuodho, and A. Davis. Kentucky Forestry Economic Contribution Report 2016, University of Kentucky, Forestry Extension, 2016, available at: [http://forestryimpacts.net/reports/kentucky/ky\\_forestry\\_economic\\_contribution\\_report\\_2016\\_web\\_smaller.pdf](http://forestryimpacts.net/reports/kentucky/ky_forestry_economic_contribution_report_2016_web_smaller.pdf)

Tanger, S.M. The Economic Contribution of Forestry and the Forest Products Industry on Louisiana's Congressional Districts, Louisiana State University Agricultural Center, LSU AgCenter Research Information Sheet #112, 2014, available at: [http://forestryimpacts.net/reports/louisiana/LA\\_EconContrib\\_2012.pdf](http://forestryimpacts.net/reports/louisiana/LA_EconContrib_2012.pdf)

TEEB. Mainstreaming the Economics of Nature: A Synthesis of the Approach Conclusions and Recommendations of TEEB. Earthscan, London, Washington, 2010.

United Nations. The Value of Forests: Payments for Ecosystem Services in a Green Economy, United Nations Geneva Timber and Forest Study Paper 34, 2014, available at: <https://www.unece.org/fileadmin/DAM/timber/publications/SP-34Xsmall.pdf>

U.S. Department of Agriculture, Forest Service. Forest Inventory and Analysis Program. Data for Florida, 2015, available at <https://www.fia.fs.fed.us/tools-data/>.

U.S. Department of Commerce, Bureau of Economic Analysis (USDOC/BEA). *Gross Domestic Product Implicit Price Deflator*, 1970-2013, quarterly, Washington, D.C. <http://research.stlouisfed.org/fred/data/gdp/gdpdef>.

U.S. Department of Commerce, Bureau of Labor Statistics (BLS). Quarterly Census of Employment and Wages, data for 2001-16, annual, available at <https://www.bls.gov/data/#employment>.

U.S. Department of Commerce, U.S. Census Bureau. USA Trade Online, data on forest product exports, available at: <https://usatrade.census.gov/>.

U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, Census Bureau. 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, 2013, available at: <https://www.census.gov/prod/2013pubs/fhw11-fl.pdf>

VISIT FLORIDA® (2016) 2015 Florida Visitor Study. Tallahassee, FL *VISIT FLORIDA*®.

Wang, S. and B. Fu. Trade-offs between forest ecosystem services, *Forest Policy and Economics* 26: 145-146, 2013, available at: <http://www.sciencedirect.com/science/article/pii/S1389934112002304>

Washington's Forests, Timber Supply, and Forest-Related Industries. Washington State Department of Natural Resources, 2006, available at: [http://file.dnr.wa.gov/publications/em\\_fwfeconomiclow1.pdf](http://file.dnr.wa.gov/publications/em_fwfeconomiclow1.pdf)

Watson, P., J. Wilson, D. Thilmany, and S. Winter. Determining economic contributions and impacts: what is the difference and why do we care? *Journal of Regional Analysis and Policy* 37 (2): 140-146, 2007, available at <http://www.jrap-journal.org/pastvolumes/2000/v37/F37-2-6.pdf>

Zandersen, M. and R.S.J. Tol. A Meta-Analysis of Forest Recreation Values in Europe, *Journal of Forest Economics* 15: 109-130, 2009, available at: <http://www.sciencedirect.com/science/article/pii/S1104689908000202>



## Appendix A: Glossary of Economic Terms

**Contribution** (economic) represents the gross change in economic activity associated with an industry, event, or policy in an existing regional economy.

**Employee compensation** is comprised of wages, salaries, commissions, and benefits such as health and life insurance, retirement and other forms of cash or non-cash compensation.

**Employment** is a measure of the number of jobs involved, including fulltime, part-time and seasonal positions. It is not a measure of fulltime equivalents (FTEs).

**Exports** are sales of goods to customers outside the region in which they are produced, which represents a net inflow of money to the region. This also applies to sales of services to customers visiting from other regions.

**Final Demand** represents sales to final consumers, including households, governments, and exports from the region.

**Gross Regional Product (GRP)** is a measure of total economic activity in a region, or total income generated by all goods and services. It represents the sum of total value added by all industries in that region, and is equivalent to Gross Domestic Product (GDP) for the nation.

**IMPLAN**<sup>®</sup> is a computer-based input-output modeling system that enables users to create regional economic models and multipliers for any region consisting of one or more counties or states in the United States. The current version of the IMPLAN<sup>®</sup> software, version 3, accounts for commodity production and consumption for 536 industry sectors, 10 household income levels, taxes to local/state and federal governments, capital investment, imports and exports, transfer payments, and business inventories. Regional datasets for individual counties or states are purchased separately.

**Impact** or **total impact** is the change in total regional economic activity (e.g. output or employment) resulting from a change in final demand, direct industry output, or direct employment, estimated based on regional economic multipliers.

**Imports** are purchases of goods and services originating outside of the region of analysis.

**Income** is the money earned within the region from production and sales. Total income includes labor income such as wages, salaries, employee benefits and business proprietor income, plus other property income.

**Tax on Production and Imports** are taxes paid to governments by individuals or businesses for property, excise and sales taxes, but do not include income taxes.

**Input-Output (I-O) model** and **Social Accounting Matrix (SAM)** is a representation of the transactions between industry sectors within a regional economy that captures what each sector purchases from every other sector to produce its output of goods or services. Using such a model, flows of economic activity associated with any change in spending may be traced backwards through the supply chain.

**Local** refers to goods and services that are sourced from within the region, which may be defined as a county, multi-county cluster, or state. Non-local refers to economic activity originating outside the region.

**Margins** represent the portion of the purchaser price accruing to the retailer, wholesaler, and producer/manufacturer, in the supply chain. Typically, only the retail margins of many goods purchased by consumers accrue to the local region, as the wholesaler, shipper, and manufacturer often lie outside the local area.

**Multipliers** capture the total effects, both direct and secondary, in a given region, generally as a ratio of the total change in economic activity in the region relative to the direct change. Multipliers are derived from an input-output model of the regional economy. Multipliers may be expressed as ratios of sales, income, or employment, or as ratios of total income or employment changes relative to direct sales. Multipliers express the degree of interdependency between sectors in a region's economy and therefore vary considerably across regions and sectors. A **sector-specific multiplier** gives the total changes to the economy associated with a unit change in output or employment in a given sector (i.e. the **direct economic effect**) being evaluated. **Indirect effects multipliers** represent the changes in sales, income, or employment within the region in backward-linked industries supplying goods and services to businesses (e.g., increased sales in input supply firms resulting from

more industry sales). **Induced effects multipliers** represent the increased sales within the region from household spending of the income earned in the direct and supporting industries for housing, utilities, food, etc. An **imputed multiplier** is calculated as the ratio of the total impact divided by direct effect for any given measure (e.g. output, employment).

**Other property income** represents income received from investments, such as corporate dividends, royalties, property rentals, or interest on loans.

**Output** is the dollar value of a good or service produced or sold, and is equivalent to sales revenues plus changes in business inventories. **Direct output** is the value of sales revenues within the sector(s) evaluated.

**Producer prices** are the prices paid for goods at the factory or point of production. For manufactured goods the purchaser price equals the producer price plus a retail margin, a wholesale margin, and a transportation margin. For services, the producer and purchaser prices are equivalent.

**Proprietor income** is income received by non-incorporated private business owners or self-employed individuals.

**Purchaser prices** are the prices paid by the final consumer of a good or service.

**Region** or **Regional Economy** is the geographic area and the economic activity it contains for which impacts are estimated. It may consist of an individual county, an aggregation of several counties, a state, or an aggregation of states. These aggregations are sometimes defined on the basis of worker commuting patterns.

**Sector** is an individual industry or group of industries that produce similar products or services, or have similar production processes. Sectors are classified according to the North American Industrial Classification System (NAICS).

**Value Added** is a broad measure of income, representing the sum of employee compensation, proprietor income, other property income, indirect business taxes and capital consumption (depreciation), that is comparable to Gross Domestic Product. Value added is a commonly used measure of the contribution an industry makes to a regional economy because it avoids double counting of intermediate sales.

## Appendix B: Listing of Wood-Using Mills and Secondary Forest Product Manufacturers in Florida

Table B1. Wood-using mills in Florida

Mill Name	City	County	Type	Size
WestRock - Maxville	Jacksonville	Clay	Chip	Large
Coast Chips, Inc.	Fernandina Beach	Nassau	Chip	
Georgia Pacific Corporation	Perry	Taylor	Chip	Large
Gilman Building Products - Maxville	Jacksonville	Clay	Chip/Sawmill	
West Fraser - McDavid	McDavid	Escambia	Chip/Sawmill	Medium
Spanish Trail Lumber	Marianna	Jackson	Chip/Sawmill	Large
Gilman Building Products - Perry	Perry	Taylor	Chip/Sawmill	
Gilman Building Products - Lake Butler	Lake Butler	Union	Chip/Sawmill	
Gainesville Renewable Energy Center	Gainesville	Alachua	Energy Product	Large
Florida Power Development, LLC	Brooksville	Hernando	Energy Product	Large
Enviva Pellets Cottondale	Cottondale	Jackson	Energy Product	Large
Southern Fuelwood, Inc.	Newberry	Alachua	Firewood	Small
Nature's Source Products, Inc.	Lake City	Columbia	Firewood	Medium
Old Castle Lawn and Garden - Cross City	Cross City	Dixie	Mulch	Small
Old Castle Lawn and Garden - Moore Haven	Moore Haven	Glades	Mulch	Small
The Scotts Corp.	Palmdale	Glades	Mulch	Small
Old Castle Lawn and Garden - Ft. Green	Bowling Green	Hardee	Mulch	Small
Forestry Resources, Inc. - Ft. Myers	Fort Myers	Lee	Mulch	Small
Mulch Manufacturing, Inc.	Callahan	Nassau	Mulch	Medium
Landscape Products	Okeechobee	Okeechobee	Mulch	Small
Kempfer Sawmill	Saint Cloud	Osceola	Mulch	Small
Boyette Timber, Inc.	Webster	Pasco	Mulch	Small
American Mulch & Groundcover, LLC	Spring Hill	Pasco	Mulch	Small
Oldcastle Lawn & Garden - Haines City	Haines City	Polk	Mulch	Small
Wood Mulch Products	Lakeland	Polk	Mulch	Small
Old Castle Lawn and Garden - Bostwick	Bostwick	Putnam	Mulch	Small
Lees Green Scapes Inc	Coleman	Sumter	Mulch	Small
Forestry Resources, Inc. - Webster	Tarrytown	Sumter	Mulch	Small
K & B Landscape Supplies	DeLand	Volusia	Mulch	Small
Cypress Log Products	Webster	Sumter	Mulch/Post Pole	
Griffis Lumber, Inc.	Gainesville	Alachua	Mulch/Sawmill	Medium
Georgia Pacific - Hosford Mill	Hosford	Liberty	Other	Large
Cochran Forest Products, Inc.	Lake City	Columbia	Post Pole	Medium
Florida Fence Posts Co., Inc.	Ona	Hardee	Post Pole	Small
Jernigan Forest Products, LLC	Bonifay	Holmes	Post Pole	
Liberty Post and Barn Pole, Inc.	Bristol	Liberty	Post Pole	Medium
Robbins Manufacturing	Tarrytown	Sumter	Post Pole	Medium
WestRock - Panama City	Panama City	Bay	Pulp Paper	Large
International Paper - Cantonment	Cantonment	Escambia	Pulp Paper	Large
WestRock - Fernandina Beach	Fernandina Beach	Nassau	Pulp Paper	Large
Rayonier, Inc. - Fernandina Mill	Fernandina Beach	Nassau	Pulp Paper	Large

Mill Name	City	County	Type	Size
Georgia Pacific - Palatka Mill	Palatka	Putnam	Pulp Paper	Large
Georgia Pacific - Foley Mill	Perry	Taylor	Pulp Paper	Large
Thrift Log Homes, Inc.	Maccleddy	Baker	Sawmill	Small
Tatum Brothers Lumber Co, Inc.	Lawtey	Bradford	Sawmill	
Doug Cribbs Wood Products	Hampton	Bradford	Sawmill	Small
Big River Cypress	Blountstown	Calhoun	Sawmill	Medium
Great South Timber & Lumber	Lake City	Columbia	Sawmill	Medium
West Fraser - Whitehouse	Jacksonville	Duval	Sawmill	Large
Boatright Timber Service, Inc.	Havana	Gadsden	Sawmill	Small
Whiteside's Sawmill	Zolfo Springs	Hardee	Sawmill	Small
Rex Lumber - Graceville	Graceville	Jackson	Sawmill	Large
South Eastern Timber Corp.	Lady Lake	Lake	Sawmill	Small
Cracker Sawmill	Williston	Levy	Sawmill	Small
Rex Lumber - Bristol	Bristol	Liberty	Sawmill	Large
Fuqua Sawmill	Ocala	Marion	Sawmill	
Cordwin Custom Sawmill, Inc.	Fairfield	Marion	Sawmill	
Franklin Lumber Co.	Hilliard	Nassau	Sawmill	Small
Crossroads Sawmill & Lumber	Land O Lakes	Pasco	Sawmill	Small
Floyd's Cypress Products	Dade City	Pasco	Sawmill	
Stutzmans Sawmill	Dade City	Pasco	Sawmill	Small
Ideal Lumber Company	San Antonio	Pasco	Sawmill	Small
Axley Brothers Sawmill, Inc	Largo	Pinellas	Sawmill	
Wilson Lumber Company	Milton	Santa Rosa	Sawmill	Small
Silcox	Milton	Santa Rosa	Sawmill	Small
Bushnell Sawmill, Inc.	Bushnell	Sumter	Sawmill	Small
Klausner, Inc.	Live Oak	Suwannee	Sawmill	Large
Roberts Lumber Co, Inc.	Perry	Taylor	Sawmill	
Suwannee Lumber Company, LLC	Cross City	Dixie	Sawmill/Mulch	Large
Pride Enterprises	Raiford	Union	Sawmill/Post Pole	Medium
Stall Master Pine Shavings	San Antonio	Hernando	Shavings	Small
Williston Timber Co / Derby Gold	Williston	Levy	Shavings	Small
Cross City Veneer Co., Inc.	Cross City	Dixie	Veneer Plywood Panels	
Coastal Plywood	Havana	Gadsden	Veneer Plywood Panels	Large

Source: Forest Product Network

Table B2. Listing of secondary forest product manufacturers in Florida

Company Name	City	County
A--C-Kitchens	Clearwater	Pinellas
A--W-Remodeling-Inc	Rockledge	Brevard
A-Best-Tree-Service	Okahumpka	Lake
A-Cabinet-Makers-Warehouse	Stuart	Martin
A-J-Originals	Oakland Park	Broward
A-To-Z-Fabricators	Sarasota	Manatee
A1-Roof-Trusses-Ltd-Co	Fort Pierce	St. Lucie
Aaa-Cabinet-Warehouse	Orlando	Orange
Abraham-Furniture-Refinishing	Opa Locka	Miami-Dade
Ace-Cabinets-Co	New Port Richey	Pasco
Ace-Kitchen-Direct-Llc	Pompano Beach	Broward
Ace-Remodeling-Contrs-Inc	St. Petersburg	Pinellas
Adornus-Llc	Miami	Dade
Advanced-Cabinetry-Systems	Port Charlotte	Charlotte
Advanced-Euro-Inc	Altamonte Spgs	Seminole
Advanced-Interior-Concepts-Inc	Orange City	Volusia
Advanced-Millwork	Orlando	Orange
Affinity-Kitchen--Bath-Co	Sarasota	Manatee
Affordable-All-Wood-Cabinetry	Havana	Gadsden
Affordable-Blinds-Corp	Lakeland	Polk
Affordable-Discount-Cabinets	Oakland Park	Broward
Affordable-Marble--Granite	Cape Coral	Lee
Affordable-Pallets--Reels	Tampa	Hillsborough
Agr-Fabricator-Florida-Inc	Jacksonville	Duval
Aic-Millworks	Tampa	Hillsborough
Akira-Wood-Inc	Gainesville	Alachua
Al--Pauls-Utility-Buildings	Ocala	Marion
Alamos-Quality-Millwork-Inc	Apopka	Orange
All-About-Grills-Ii	Lakeland	Polk
All-Brevard-Custom-Cabinets	Melbourne	Brevard
All-Packing--Crating-Inc	Miami	Dade
All-State-Pallets	Orlando	Orange
All-Wood-Cabinetry	Bartow	Polk
All-Wood-Pallets	Winter Park	Orange
Allen-Manufactured-Housing	Davie	Broward
Allgoods-Furniture-Inc	Panama City	Bay
Allsafe-Bath-Kitchen-Rsrfcng	Plantation	Broward
All-Star-Kitchen-Cabinet-Corp	Miami	Dade
Alonso-Cabinets	Miami	Dade
Alpha-Blinds--Interiors-Inc	Miami	Dade
Altamonte-Woodworking-Co-Inc	Longwood	Seminole
Amazing-Tile--Granite	Port St Lucie	St. Lucie
Ambassador-Kitchens-Inc	Fort Myers	Lee
Ambiance-Framing-Inc	St Petersburg	Pinellas
American-Blind-Corp	Miami	Dade
American-Blind-Industries-Inc	Sunrise	Broward
American-Cabinet-Mill--Supply	Merritt Island	Brevard
American-Express-Cargo	Miami	Dade
American-Kitchens-Inc	Orlando	Orange
Americana-Cove	St. Petersburg	Pinellas
Amigo-Pallets	Hialeah	Dade
Amoroso-Cabinetry-Inc	Brandon	Hillsborough
Anamar-Cabinets-Inc	Hialeah	Dade
Ancient-Mosaics-Studios	Fort Pierce	St. Lucie
Applejack-Fine-Cabinetry	Stuart	Martin
Arban--Assoc	Ponce De Leon	Holmes
Architectural-Panel-Prods-Inc	Delray Beach	Palm Beach

Company Name	City	County
Arimar-International	Miami	Dade
Array-Of-Cabinets	Port Charlotte	Charlotte
Ars-Granite	Fruitland Park	Lake
Arthur-Jacques-Vallez	Palm Harbor	Pinellas
Artios	Orlando	Orange
Artisan-Cabinetry--Stone	Melbourne	Brevard
Artisan-Cabinetry-Inc	Tampa	Hillsborough
Artistic-Cabinet-Shop-Llc	Orlando	Orange
Artistic-Doors-Inc	Lake Worth	Palm Beach
Artistry-N-Wood-Inc	Melbourne	Brevard
Art-N-Wood	Lakeland	Polk
Astro-Cabinets--Repair-Inc	Miami	Broward
Atlantic-Cabinets	Palm Bay	Brevard
Atlantic-Pallets-Inc	Fort Lauderdale	Broward
Autumn-Leaf-Fine-Woodworking	Niceville	Okaloosa
Avrora-Inc	Palm Coast	Flagler
Axley-Brothers-Saw-Mill-Inc	Largo	Pinellas
B-K-Cypress-Log-Homes	Bronson	Levy
Barber-Lumber-Sales	Alachua	Alachua
Bath--Kitchen-Creations-Inc	Boca Raton	Palm Beach
Bathroom-World	Oakland Park	Broward
Bay-City-Plywood	Hudson	Pasco
Bay-To-Bay-Design-Ctr	Tampa	Pinellas
Beacon-Hardwoods	Medley	Miami-Dade
Bentley-Design	Palm Harbor	Pinellas
Bentwood-Farms-Inc	Monticello	Jefferson
Bentwood-Naples	Naples	Collier
Bill-Loucks-Cstm-Cabinets-Inc	Brooksville	Hernando
Blumer--Stanton-Inc	West Palm Beach	Palm Beach
Bobs-Hardwood-Floors	Tallahassee	Leon
Cabinetry-Masters-Llc	Jacksonville	Duval
Cabinets-By-Ray	Cape Coral	Lee
Cabinets-Etc	Winter Haven	Polk
Cabinets-Plus-Inc	Cape Coral	Lee
Central-Florida-Cabinet-Supply	Orlando	Orange
Christi-S-Cabinetry	Naples	Collier
Classical-Architectural	St. Petersburg	Pinellas
Clive-Christian-Naples	Naples	Collier
Cochran-Forest-Products	Lake City	Columbia
Curry-Cabinetry	Tampa	Hillsborough
Designers-Choice-Cabinetry-Inc	Rockledge	Brevard
Dynamic-Cabinets-Of-Oldsmar	Oldsmar	Pinellas
Fernando-Hernandez-Casework	Panama City	Sarasota
Four-One-One-Kitchen-Cabinets	Greenacres	Palm Beach
Gator-Cabinet-Refacing-Llc	Edgewater	Volusia
Genesis-Cabinetry-Llc	Delray Beach	Palm Beach
Hammond-Kitchen--Baths-Inc	Melbourne	Brevard
Hardwood-Stop-Inc	Pensacola	Escambia
Kendall-Trailer-Mfg	Miami	Miami-Dade
Lafayette-Custom-Woodworks	Day	Lafayette
Lifetime-Cabinet--Interiors	DeLand	Volusia
Lyndan-Inc	Tampa	Hillsborough
Master-Kitchen-Cabinets--Vnts	Fort Myers	Lee
Mescore-Llc	Riviera Beach	Palm Beach
Mhs-Cabinetry	Tampa	Hillsborough
Mill-Creek-Sawmill	Ocala	Marion
More-Space-Place	Palm Harbor	Pinellas
Nadeau-And-Sons	St. Petersburg	Pinellas
National-Woodworks-Inc	Orlando	Orange

Company Name	City	County
New-Horizon-Cabinetry-Inc	Bonita Springs	Lee
New-Kitchen-Concepts-Unlimited	Daytona Beach	Volusia
O--J-Top-Shop	La Crosse	LaPorte
Onestop-Kitchen--Bath	Tampa	Hillsborough
Prestige-Casework	Tampa	Hillsborough
Prestige-Home-Ctr	Chiefland	Levy
S--S-Craftsmen	Tampa	Hillsborough
Srm-Cabinetry	Daytona Beach	Volusia
Sunbright-Designs	Mt Dora	Lake
Superior-Stone-Design-Inc	Orange City	Orange
T-K-Cabinets-Inc	Palatka	Putnam
Tampa-Pallet-Co	Tampa	Hillsborough
Tops-Kitchen-Cabinets	Miami	Dade
Viking-Kabinets-Inc	Cutler Bay	Miami-Dade
M--N-Wood-Design-Inc	St. Petersburg	Pinellas
Brud-Rogers--Sons-Woodworking	Melborne	Brevard
Eau-Gallie-Woodworking	Melbourne	Brevard
Custom-Kitchens--Cabinets-Inc	West Melbourne	Brevard
Twomblys-Nautical-Furniture	Cocoa Beach	Brevard
Bruce-Taylor--Cabinetry-Inc	Cocoa	Brevard
Cabinets-By-Scotty	Melbourne	Brevard
Ronald-Krause-Construction-Svc	Melbourne	Brevard
Intercarib-Shipping-Svc-Inc	Palm Bay	Brevard
Home-Works-Of-Bay-Co-Inc	Parker	Bay
Tallahassee-Moulding-Co	Tallahassee	Leon
R-D-Millwork-Installers-Llc	Milton	Santa Rosa
Century-Millworks	Century	Escambia
H-G-Customs-Inc	Niceville	Okaloosa
Triple-D-Woodshop	Bonifay,	Holmes
Custom-Woodworking	Panama City	Bay
Trimco-Cabinets	Walnut Hill	Escambia
Pioneer-Woodworking-Co	Pensacola	Escambia
Cabella-Cabinetry	Pensacola	Escambia
Clayton-Cabinets--Trim	Pensacola	Escambia
Creative-Productions-Team-Llc	Pensacola	Escambia
Hardwood-Floor-And-Tile-Buyers	Navarre	Santa Rosa
Freddie-Glenns-Woodwork-Llc	Tallahassee	Leon
Polstons-Cabinet-Shop	Graceville	Jackson
Custom-Furniture--Unique	Tallahassee	Leon
Mike-Poepping-Furniture	Tallahassee	Leon
Country-Cabinets-Inc	Bonifay	Holmes
Cornerstone-Woodworks-Llc	Molino	Escambia
Shores-Cabinet-Shop	Cottdale	Jackson
Thomas-Custom-Cabinets-Llc	Milton	Santa Rosa
Panama-Pallets	Panama City	Bay
Gautreux-Kenneth-J	Panama City	Bay
Win-Tech	Panama City	Bay
Haywood-Cabinet-Svc-Llc	Panama City	Bay
Marquis-Kitchen--Baths	Santa Rosa Beach	Santa Rosa
Furniture-By-True-Grain	Perry	Taylor
Deerings-Custom-Cabinets	Pensacola	Escambia
D--M-Truss-Co	Pensacola	Escambia
Florida-Plywoods-Inc	Greenville	Madison
Mills-Distributors-Inc	Pensacola	Escambia
Crown-Cabinetry	Gulf Breeze	Santa Rosa
Paulk-Woodworking	Milton	Santa Rosa
Leisure-Ednterprises	Tallahassee	Leon
Gayeski-Furniture	Panama City	Bay
Oak--Rope-Design	Lamont	Jefferson

Company Name	City	County
Fijs-Inc	Davie	Broward
Canyon-Custom-Woodwork-Inc	Pompano Beach	Broward
Unique-Custom-Woodwork	Plantation	Broward
Layout-Completion	Lauderhill	Broward
Tropical-Tiki-Huts-Builder	Fort Lauderdale	Broward
Frank-Reed-Jr-Cabinets	Davie	Broward
Prestigious-Furnishing	Lauderdale Lakes	Broward
Wood-Wizard	Fort Lauderdale	Broward
Royal-Custom-Cabinetry	Sunrise	Broward
Majestic-Ultimate-Design-Inc	Oakland Park	Broward
Wooden-Dreams	Miramar	Broward
Solid-Surfaces-Inc	Pompano Beach	Broward
New-England-Custom-Woodwork	Oakland Park	Broward
Wolf-In-The-Woods-Inc	Davie	Broward
Woodart-Design--Furniture-Inc	Lauderhill	Broward
Ptl-Cabinets	Oakland Park	Broward
Federal-Millwork-Corp	Fort Lauderdale	Broward
Twin-Upholstery	Fort Lauderdale	Broward
Manufacturing-By-Skema-Inc	Fort Lauderdale	Broward
Jago-Marine-Cabinetry-Inc	Fort Lauderdale	Broward
Town--Country-Woodworks	West Park	Broward
Murphy-Beds-Sales--Repair	Fort Lauderdale	Broward
Servs-Cabinets	Pompano Beach	Broward
Organic-Surfaces	Fort Lauderdale	Broward
Furniture-Concepts-2000-Inc	Pompano Beach	Broward
Pallet-Consultants-Corp	Pompano Beach	Broward
Five-Star-Millwork	Pompano Beach	Broward
Florida-Custom-Cabinets	Fort Lauderdale	Broward
International-Cabinetry	Pompano Beach	Broward
Ken-Stevens-Cabinets	Hollywood	Broward
Ultra-Wood-Products	Pompano Beach	Broward
Willson--Son-Industries	Margate	
Pallet-King	Pompano Beach	Broward
Procraft-Construction-Inc	Fort Lauderdale	Broward
Cabinet--Millwork-Creation	West Park	Broward
Vertical-Blind-Outlet	Sarasota	Sarasota
Nicholas-Cabinet-Making	Venice	Sarasota
John-Measel-Cabinets	Sarasota	Sarasota
G-B-Cabinets-Inc	Sebring	Highlands
D--N-Cabinetry-Inc	Sebring	Highlands
Imperial-Cabinets--Millwk-Inc	Lakeland	Polk
Rays-Cabinet-Supply	New Port Richey	Pasco
One-Stop-Kitchen--Bath	St Petersburg	Pinellas
Candlelight-Kitchen-Designs	Tarpon Springs	Pinellas
Kitchen-Techniques-Inc	Gulfport	Pinellas
Jamco-Unlimited-Inc	Safety Harbor	Pinellas
Mckenzie-Cabinetry--Fine	St. Petersburg	Pinellas
Knot-Just-Cabinets	Clearwater	Pinellas
Heisler-Hardwood-Inc	Clearwater	Pinellas
Ffe-Hotel	Clearwater Beach	Pinellas
Refresh-Interiors-Inc	St. Petersburg	Pinellas
Re-Creation	Largo	Pinellas
More-Space-Place-Inc	Clearwater	Pinellas
Bay-To-Bay-Kitchens--Baths	Clearwater	Pinellas
D--S-Hauling-Inc	Clearwater	Pinellas
Spacewerks-Inc	Clearwater	Pinellas
Unique-Cabinetry-Inc	Clearwater	Pinellas
Cornerstone-Interior-Woodwkg	Largo	Pinellas
Shutterworld	Largo	Pinellas



Company Name	City	County
Vc-Atlantic-Woodwork	Miami	Miami-Dade
Decofast-Interiors	Miami	Miami-Dade
Tiki-Huts-Inc	Miami	Miami-Dade
Caybay-Kitchens	Miami	Miami-Dade
Marston-Woodworks	Key West	Monroe
National-Pallets-Inc	Miami	Miami-Dade
Salvador-Correa-Wood-Works-Crp	Key Biscayne	Miami-Dade
Winter-Woodworks	Miami	Miami-Dade
Key-Largo-Millworks	Key Largo	Monroe
W-R-Interior-Woodwork-Inc	Hialeah	Miami-Dade
Dor-O-Matic	Miami	Miami-Dade
West-Coast-Kitchen--Bath-Llc	Venice	Sarasota
Reliable-Cabinet-Designs	Sarasota	Sarasota
Dreamworks-Construction	Naples	Collier
Craters--Freighters	Cape Coral	Lee
Hyland-Corp	Naples	Collier
Cabinets-Etc-Inc	Hudson	Pasco
Ultima-Design-Of-South-Florida	Miami	Miami-Dade
Ors-Finish-Carpentry	Medley	Miami-Dade
Florida-Upholsterers-Frames	Hialeah	Miami-Dade
Peace-Millwork-Co	Miami	Miami-Dade
Juan-Pampanas-Designs	Miami	Miami-Dade
Internum	Miami	Miami-Dade
Bon-Vivant-Corp	Miami	Miami-Dade
Home-Ko	Miami	Miami-Dade
Greenforest-Industries-Inc	Sarasota	Sarasota
William-Montague	Englewood	Sarasota
Devittori-Custom-Woodwork	Bradenton	Manatee
Ric-Orgaz-Cabinetmaker	Miami	Miami-Dade
Creative-Woodwork	Miami	Miami-Dade
Rcs-Display	Miami	Miami-Dade
Village-Woodworking	Fort Lauderdale	Broward
Custom-Interiors-By-Anthony	Opa Locka	Miami-Dade
Republic-Packaging-Of-FI-Inc	Opa Locka	Miami-Dade
Martinson-Mica-Wood-Products	Opa Locka	Miami-Dade
Diamond-Custom-Millworks-Inc	Hialeah	Miami-Dade
Jorian-Kitchen-Cabinets	Hialeah	Miami-Dade
Florida-Kitchen--Cabinet	Hialeah	Miami-Dade
Miami-Furniture-Inc	Hialeah	Miami-Dade
Wood-Trades	Miami	Miami-Dade
Dodici-Inc	Medley	Miami-Dade
Michael-Kitchen-Cabinets	Hialeah	Miami-Dade
Space-Solutions-Llc	Miami	Miami-Dade
Cabinets--More	Jacksonville	Duval
Mirovi-Frames	Miami	Miami-Dade
Guin-Kitchen-Cabinet	Miami	Miami-Dade
Remyson-Inc	Oldsmar	Pinellas
Superior-Mill-Work-Co	Jacksonville	Duval
Robison-Cabinets	Jacksonville	Duval
Southside-Fixtures	Jacksonville	Duval
Island-Kitchens	Fernandina Beach	Nassau
Kitchen--Flooring-Concepts	Jacksonville	Duval
Professional-Interiors-Inc	Jacksonville	Duval
Tatum-Brothers-Lumber-Co	Lawtey	Bradford
North-Florida-Portable-Sawmill	Nokomis	Sarasota
Peninsula-Woodworks	Largo	Pinellas
Ruhl-Enterprises	St. Petersburg	Pinellas
K--M-Custom-Cabinetry	Safety Harbor	Pinellas
Heffner-Cabinet--Mill-Work	Orlando	Hillsborough

Company Name	City	County
Burnett-Millwork	Orlando	Orange
Hood-Distributionmc-Ewen-Grp	Orlando	Orange
R-C-Cabinets	Sanford	Seminole
Platinum-Edge-Group	Orlando	Orange
Original-Log-Cabin-Homes-Ltd	Sanford	Orange
Estrada-Home-Improvements-Inc	Lady Lake	Lake
American-Heritage-Cabinetry-Ll	Ocala	Marion
D--B-Cabinets-Inc	Keystone Heights	Clay
U-Save-Bargain-Paneling-Inc	Orlando	Orange
Panda-Kitchen--Bath	Orlando	Orange
Brede-Exposition-Svc	Orlando	Orange
A-A-Gulf-C-Past-Counter-Tops	Orlando	Orange
Trussway	Orlando	Orange
Ventura-Cabinetry	Orlando	Orange
Figuroas-Fine-Custom-Frntr	Orlando	Orange
Jeld-Wen-Door-Systems	Kissimmee	Osceola
Eaglebay-Wood-Doors	Oviedo	Seminole
Gemini-Cabinetry-Inc	Groveland	Lake
D-J-Nac-Custom-Cabinets	Brooksville	Hernando
Walker-Brothers-Millworks-Inc	Winter Garden	Orange
Wj-Bergin-Cabinetry	Orlando	Orange
Neals-Cabinets-Inc	Orlando	Orange
Were-Organized-Inc	Sanford	Orange
Tcm-Imagineering	Deland	Volusia
Cabinet-Source	Leesburg	Lake
Quintana-Kitchen--Plus-Llc	Kissimmee	Osceola
City-Cabinets-Corp	Hialeah	Miami-Dade
Disc-Custom-Kitchen-Cabinets	Orlando	Orange
Patricia-Davis-Brown-Fine	Vero Beach	Indian River
Island-Style-Homes-Inc	Fort Pierce	St. Lucie
Shaver-Millwork	Vero Beach	Indian River
Best-Fence-Co	Bartow	Polk
Big-Bend-Roof-Trusses-Inc	Havana	Gadsden
Grills--More	Lakeland	Polk
Mayo-Truss-Co	Mayo	Lafayette
Oldcastle-Lawn-And-Garden	Bostwick	Putnam
Cabinet-Encounters	Juno Beach	Palm Beach
Porath-Fine-Cabinetry	West Palm Beach	Palm Beach
Ca-Custom-Cabinetry-Llc	Delray Beach	Palm Beach
Jean-Marc--Co	Palm Beach Gardens	Palm Beach
Richard-Bermi-Cabinetry	Lake Worth	Palm Beach
Royal-Palm-Cabinetry-Inc	Jupiter	Palm Beach
Theragene-Modern-Cabinet-Inc	Delray Beach	Palm Beach
K--K-Cabinets	Delray Beach	Palm Beach
Victorian-Principles-Inc	West Palm Beach	Palm Beach
First-Impression-Doors-Mllwork	West Palm Beach	Palm Beach
Fred-M-Bush-Millwork	West Palm Beach	Palm Beach
J--B-Quality-Millwork-Llc	Riviera Beach	Palm Beach
Lynch-Millwork--Design	Magnolia Park	Palm Beach
National-Millwork	Boca Raton	Palm Beach
Richards-Fine-Woodwork-Inc	West Palm Beach	Palm Beach
Schrappers-Fine-Cabinetry	Jupiter	Palm Beach
Seminole-Trusses--Inc	Midway	Gadsden
Furnival-Construction	Cocoa	Brevard
Pompanette-Kitchens	Boca Raton	Palm Beach
Labelle-Kitchen-Supls--Tools	Jupiter	Palm Beach
Hartman-Windows--Doors	West Palm Beach	Palm Beach
Classic-Cabinets-Inc	West Palm Beach	Palm Beach
Cabinet-Designs-Of-Central-Florida	Rockledge	Brevard

Company Name	City	County
Tops-Kitchen-Cabinets	Miami	Dade
Viking-Kabinets-Inc	Cutler Bay	
Tops-Kitchen-Cabinets-1	Hollywood	Broward
Hyland-Corp	Naples	Collier
New-Horizon-Cabinetry-Inc	Bonita Springs	Lee
Master-Kitchen-Cabinets--Vnts	Fort Myers	Lee
Hood-Distributionmc-Ewen-Grp	West Palm Beach	Palm Beach

Source: Forest Product Network

## Appendix C: Profile of Forest Industry Economic Contributions in Florida Counties

County / Industry Group	Direct Employment (Jobs)	Employment Contrib. (Jobs)	Direct Output or Revenues (M\$)	Output Contrib. (M\$)	Labor Income Contrib. (M\$)	Value Added Contrib. (M\$)	State-Local Tax Contrib. (M\$)	Federal Tax Contrib. (M\$)
<b>Alachua</b>	<b>919</b>	<b>3,155</b>	<b>432.9</b>	<b>769.3</b>	<b>164.7</b>	<b>277.0</b>	<b>29.1</b>	<b>46.3</b>
Forestry Production	350	486	21.0	51.8	22.2	31.4	1.8	5.2
Primary Wood Products Manufacturing	132	362	34.8	67.2	17.7	26.4	1.9	4.4
Secondary Wood Products Manufacturing	160	214	29.6	37.3	9.8	14.1	0.6	2.3
Converted Paper Products Manufacturing	50	171	28.6	46.3	9.7	17.6	1.1	2.6
Forest Chemical Manufacturing	133	1,742	251.6	487.7	90.8	153.2	14.8	27.3
Allied Manufacturing	6	23	1.6	4.0	1.3	1.9	0.1	0.3
Wholesale Trade Lumber and Wood	43	113	10.8	20.3	6.9	12.4	1.7	1.9
Biomass Electric Power Generation	45	45	54.8	54.8	6.4	19.9	7.1	2.3
<b>Baker</b>	<b>9</b>	<b>444</b>	<b>23.0</b>	<b>52.3</b>	<b>20.6</b>	<b>29.9</b>	<b>1.7</b>	<b>4.9</b>
Forestry Production	0	414	17.9	44.1	18.9	26.8	1.5	4.4
Converted Paper Products Manufacturing	9	30	5.0	8.1	1.7	3.1	0.2	0.5
<b>Bay</b>	<b>986</b>	<b>8,461</b>	<b>722.9</b>	<b>1,798.8</b>	<b>452.7</b>	<b>766.4</b>	<b>59.6</b>	<b>121.2</b>
Forestry Production	204	424	18.3	45.1	19.4	27.4	1.5	4.5
Primary Wood Products Manufacturing	5	14	1.4	2.6	0.7	1.0	0.1	0.2
Secondary Wood Products Manufacturing	83	111	15.4	19.4	5.1	7.3	0.3	1.2
Primary Paper Products Manufacturing	551	6,390	472.4	1,314.5	347.4	594.8	44.1	91.3
Forest Chemical Manufacturing	109	1,432	206.7	400.8	74.7	125.9	12.2	22.5
Wholesale Trade Lumber and Wood	34	90	8.6	16.2	5.5	10.0	1.4	1.5
<b>Bradford</b>	<b>130</b>	<b>445</b>	<b>31.1</b>	<b>62.4</b>	<b>21.0</b>	<b>30.7</b>	<b>2.0</b>	<b>5.0</b>
Forestry Production	45	251	10.9	26.7	11.4	16.2	0.9	2.7
Primary Wood Products Manufacturing	53	145	13.9	26.8	7.1	10.6	0.8	1.7
Secondary Wood Products Manufacturing	26	35	4.9	6.2	1.6	2.3	0.1	0.4
Wholesale Trade Lumber and Wood	6	15	1.4	2.7	0.9	1.6	0.2	0.2
<b>Brevard</b>	<b>290</b>	<b>708</b>	<b>82.6</b>	<b>148.4</b>	<b>38.8</b>	<b>65.5</b>	<b>6.2</b>	<b>10.3</b>
Forestry Production	50	4	0.2	0.4	0.2	0.2	0.0	0.0
Primary Wood Products Manufacturing	72	198	19.0	36.7	9.7	14.5	1.0	2.4
Secondary Wood Products Manufacturing	26	34	4.8	6.0	1.6	2.3	0.1	0.4
Converted Paper Products Manufacturing	45	151	25.3	41.0	8.6	15.6	1.0	2.3
Forest Chemical Manufacturing	5	70	10.2	19.7	3.7	6.2	0.6	1.1
Allied Manufacturing	7	27	1.8	4.6	1.5	2.2	0.1	0.4
Wholesale Trade Lumber and Wood	85	223	21.3	40.0	13.7	24.6	3.4	3.7
<b>Broward</b>	<b>1,596</b>	<b>4,334</b>	<b>502.0</b>	<b>896.6</b>	<b>242.4</b>	<b>415.8</b>	<b>45.8</b>	<b>66.2</b>
Forestry Production	73	1	0.0	0.1	0.0	0.1	0.0	0.0
Primary Wood Products Manufacturing	183	502	48.3	93.2	24.5	36.7	2.7	6.1
Secondary Wood Products Manufacturing	357	478	66.3	83.5	21.8	31.5	1.3	5.3
Converted Paper Products Manufacturing	101	344	57.6	93.2	19.5	35.5	2.2	5.3
Forest Chemical Manufacturing	66	862	124.5	241.4	45.0	75.8	7.3	13.5
Wholesale Trade Lumber and Wood	815	2,147	205.2	385.3	131.6	236.3	32.3	36.0
<b>Calhoun</b>	<b>179</b>	<b>506</b>	<b>25.0</b>	<b>56.4</b>	<b>23.3</b>	<b>33.2</b>	<b>1.9</b>	<b>5.4</b>
Forestry Production	156	470	20.4	50.1	21.5	30.4	1.7	5.0

County / Industry Group	Direct Employment (Jobs)	Employment Contrib. (Jobs)	Direct Output or Revenues (M\$)	Output Contrib. (M\$)	Labor Income Contrib. (M\$)	Value Added Contrib. (M\$)	State-Local Tax Contrib. (M\$)	Federal Tax Contrib. (M\$)
Secondary Wood Products Manufacturing	21	27	3.8	4.8	1.3	1.8	0.1	0.3
Wholesale Trade Lumber and Wood	3	8	0.8	1.5	0.5	0.9	0.1	0.1
<b>Charlotte</b>	<b>168</b>	<b>298</b>	<b>31.2</b>	<b>54.7</b>	<b>15.1</b>	<b>23.7</b>	<b>1.9</b>	<b>3.8</b>
Forestry Production	52	27	1.2	2.9	1.2	1.7	0.1	0.3
Primary Wood Products Manufacturing	55	152	14.6	28.2	7.4	11.1	0.8	1.8
Secondary Wood Products Manufacturing	36	48	6.6	8.3	2.2	3.1	0.1	0.5
Converted Paper Products Manufacturing	8	27	4.6	7.4	1.6	2.8	0.2	0.4
Wholesale Trade Lumber and Wood	17	44	4.2	7.9	2.7	4.9	0.7	0.7
<b>Citrus</b>	<b>114</b>	<b>273</b>	<b>24.3</b>	<b>47.6</b>	<b>13.5</b>	<b>20.6</b>	<b>1.6</b>	<b>3.4</b>
Forestry Production	27	37	1.6	4.0	1.7	2.4	0.1	0.4
Primary Wood Products Manufacturing	77	211	20.3	39.2	10.3	15.4	1.1	2.5
Wholesale Trade Lumber and Wood	9	25	2.4	4.5	1.5	2.7	0.4	0.4
<b>Clay</b>	<b>399</b>	<b>625</b>	<b>38.2</b>	<b>81.5</b>	<b>31.2</b>	<b>48.0</b>	<b>4.0</b>	<b>7.7</b>
Forestry Production	318	423	18.3	45.1	19.3	27.4	1.5	4.5
Secondary Wood Products Manufacturing	14	19	2.7	3.4	0.9	1.3	0.1	0.2
Converted Paper Products Manufacturing	2	6	1.0	1.7	0.3	0.6	0.0	0.1
Allied Manufacturing	7	26	1.8	4.4	1.4	2.1	0.1	0.3
Wholesale Trade Lumber and Wood	57	151	14.4	27.1	9.2	16.6	2.3	2.5
<b>Collier</b>	<b>385</b>	<b>424</b>	<b>49.6</b>	<b>81.9</b>	<b>23.0</b>	<b>38.6</b>	<b>3.7</b>	<b>6.1</b>
Forestry Production	208	30	1.3	3.2	1.4	1.9	0.1	0.3
Primary Wood Products Manufacturing	10	28	2.7	5.1	1.3	2.0	0.1	0.3
Secondary Wood Products Manufacturing	80	107	14.9	18.7	4.9	7.1	0.3	1.2
Converted Paper Products Manufacturing	21	71	11.8	19.1	4.0	7.3	0.5	1.1
Forest Chemical Manufacturing	1	19	2.7	5.2	1.0	1.6	0.2	0.3
Wholesale Trade Lumber and Wood	64	170	16.2	30.5	10.4	18.7	2.6	2.9
<b>Columbia</b>	<b>293</b>	<b>727</b>	<b>48.5</b>	<b>100.5</b>	<b>34.5</b>	<b>50.6</b>	<b>3.4</b>	<b>8.3</b>
Forestry Production	173	430	18.6	45.8	19.6	27.8	1.6	4.6
Primary Wood Products Manufacturing	85	234	22.5	43.5	11.4	17.1	1.2	2.8
Secondary Wood Products Manufacturing	22	30	4.1	5.2	1.3	1.9	0.1	0.3
Wholesale Trade Lumber and Wood	13	34	3.3	6.1	2.1	3.8	0.5	0.6
<b>DeSoto</b>	<b>89</b>	<b>11</b>	<b>1.0</b>	<b>1.9</b>	<b>0.7</b>	<b>1.2</b>	<b>0.2</b>	<b>0.2</b>
Forestry Production	85	0	0.0	0.0	0.0	0.0	0.0	0.0
Wholesale Trade Lumber and Wood	4	11	1.0	1.9	0.7	1.2	0.2	0.2
<b>Dixie</b>	<b>584</b>	<b>1,188</b>	<b>117.3</b>	<b>217.4</b>	<b>57.7</b>	<b>86.1</b>	<b>6.0</b>	<b>14.2</b>
Forestry Production	121	26	1.1	2.7	1.2	1.7	0.1	0.3
Primary Wood Products Manufacturing	385	1,055	101.5	195.9	51.5	77.1	5.6	12.7
Secondary Wood Products Manufacturing	76	102	14.2	17.8	4.7	6.7	0.3	1.1
Wholesale Trade Lumber and Wood	2	6	0.5	1.0	0.3	0.6	0.1	0.1
<b>Duval</b>	<b>2,881</b>	<b>11,885</b>	<b>1,374.3</b>	<b>2,660.6</b>	<b>644.8</b>	<b>1,105.1</b>	<b>84.1</b>	<b>171.6</b>
Forestry Production	133	382	16.6	40.8	17.5	24.7	1.4	4.1
Primary Wood Products Manufacturing	545	1,495	143.9	277.7	73.1	109.2	7.9	18.1
Secondary Wood Products Manufacturing	281	377	52.2	65.7	17.2	24.8	1.0	4.1
Primary Paper Products Manufacturing	327	3,786	279.9	778.9	205.8	352.4	26.2	54.1
Converted Paper Products Manufacturing	1,141	3,869	648.1	1,047.6	219.3	399.6	24.8	59.4
Forest Chemical Manufacturing	73	956	138.1	267.7	49.9	84.1	8.1	15.0
Allied Manufacturing	19	70	4.8	11.9	3.9	5.7	0.4	0.9

County / Industry Group	Direct Employment (Jobs)	Employment Contrib. (Jobs)	Direct Output or Revenues (M\$)	Output Contrib. (M\$)	Labor Income Contrib. (M\$)	Value Added Contrib. (M\$)	State-Local Tax Contrib. (M\$)	Federal Tax Contrib. (M\$)
Wholesale Trade Lumber and Wood	361	950	90.8	170.5	58.2	104.5	14.3	15.9
<b>Escambia</b>	<b>650</b>	<b>5,653</b>	<b>436.6</b>	<b>1,113.4</b>	<b>302.0</b>	<b>508.5</b>	<b>38.1</b>	<b>78.8</b>
Forestry Production	79	688	29.8	73.3	31.4	44.5	2.5	7.3
Primary Wood Products Manufacturing	36	100	9.6	18.5	4.9	7.3	0.5	1.2
Secondary Wood Products Manufacturing	21	28	3.8	4.8	1.3	1.8	0.1	0.3
Primary Paper Products Manufacturing	370	4,287	316.9	881.9	233.1	399.0	29.6	61.2
Converted Paper Products Manufacturing	68	229	38.4	62.1	13.0	23.7	1.5	3.5
Forest Chemical Manufacturing	11	149	21.5	41.7	7.8	13.1	1.3	2.3
Wholesale Trade Lumber and Wood	66	173	16.5	31.1	10.6	19.0	2.6	2.9
<b>Flagler</b>	<b>113</b>	<b>520</b>	<b>44.5</b>	<b>89.9</b>	<b>25.1</b>	<b>38.3</b>	<b>2.9</b>	<b>6.5</b>
Forestry Production	47	248	10.7	26.4	11.3	16.0	0.9	2.6
Primary Wood Products Manufacturing	36	100	9.6	18.5	4.9	7.3	0.5	1.2
Secondary Wood Products Manufacturing	15	20	2.7	3.4	0.9	1.3	0.1	0.2
Forest Chemical Manufacturing	11	141	20.4	39.6	7.4	12.4	1.2	2.2
Wholesale Trade Lumber and Wood	4	11	1.1	2.0	0.7	1.2	0.2	0.2
<b>Franklin</b>	<b>24</b>	<b>389</b>	<b>17.3</b>	<b>42.1</b>	<b>17.9</b>	<b>25.4</b>	<b>1.5</b>	<b>4.2</b>
Forestry Production	21	380	16.5	40.5	17.4	24.6	1.4	4.0
Primary Wood Products Manufacturing	1	4	0.4	0.8	0.2	0.3	0.0	0.0
Wholesale Trade Lumber and Wood	2	5	0.4	0.8	0.3	0.5	0.1	0.1
<b>Gadsden</b>	<b>383</b>	<b>1,088</b>	<b>96.4</b>	<b>189.5</b>	<b>53.0</b>	<b>79.3</b>	<b>5.8</b>	<b>13.1</b>
Forestry Production	42	157	6.8	16.7	7.2	10.1	0.6	1.7
Primary Wood Products Manufacturing	329	902	86.8	167.4	44.1	65.9	4.8	10.9
Wholesale Trade Lumber and Wood	11	30	2.8	5.3	1.8	3.3	0.4	0.5
<b>Gilchrist</b>	<b>92</b>	<b>487</b>	<b>23.7</b>	<b>54.7</b>	<b>22.4</b>	<b>31.9</b>	<b>1.8</b>	<b>5.2</b>
Forestry Production	73	450	19.5	47.9	20.5	29.1	1.6	4.8
Primary Wood Products Manufacturing	7	20	1.9	3.7	1.0	1.5	0.1	0.2
Secondary Wood Products Manufacturing	10	13	1.9	2.3	0.6	0.9	0.0	0.1
Wholesale Trade Lumber and Wood	2	4	0.4	0.7	0.3	0.5	0.1	0.1
<b>Glades</b>	<b>64</b>	<b>218</b>	<b>9.7</b>	<b>23.6</b>	<b>10.0</b>	<b>14.3</b>	<b>0.8</b>	<b>2.3</b>
Forestry Production	63	214	9.3	22.8	9.8	13.9	0.8	2.3
Wholesale Trade Lumber and Wood	2	4	0.4	0.7	0.3	0.4	0.1	0.1
<b>Gulf</b>	<b>97</b>	<b>83</b>	<b>6.3</b>	<b>12.8</b>	<b>4.0</b>	<b>5.9</b>	<b>0.4</b>	<b>1.0</b>
Forestry Production	78	32	1.4	3.4	1.5	2.1	0.1	0.3
Primary Wood Products Manufacturing	18	48	4.6	8.9	2.3	3.5	0.3	0.6
Wholesale Trade Lumber and Wood	1	3	0.3	0.5	0.2	0.3	0.0	0.0
<b>Hamilton</b>	<b>40</b>	<b>350</b>	<b>15.5</b>	<b>37.8</b>	<b>16.1</b>	<b>22.8</b>	<b>1.3</b>	<b>3.7</b>
Forestry Production	38	344	14.9	36.7	15.7	22.3	1.3	3.7
Primary Wood Products Manufacturing	1	3	0.3	0.5	0.1	0.2	0.0	0.0
Wholesale Trade Lumber and Wood	1	3	0.3	0.6	0.2	0.3	0.0	0.1
<b>Hardee</b>	<b>203</b>	<b>379</b>	<b>23.2</b>	<b>45.9</b>	<b>17.5</b>	<b>25.1</b>	<b>1.4</b>	<b>4.1</b>
Forestry Production	151	301	13.0	32.1	13.8	19.5	1.1	3.2
Primary Wood Products Manufacturing	3	9	0.8	1.6	0.4	0.6	0.0	0.1
Secondary Wood Products Manufacturing	46	62	8.5	10.7	2.8	4.1	0.2	0.7
Wholesale Trade Lumber and Wood	3	8	0.8	1.4	0.5	0.9	0.1	0.1
<b>Hendry</b>	<b>219</b>	<b>101</b>	<b>11.1</b>	<b>21.9</b>	<b>5.2</b>	<b>8.4</b>	<b>0.8</b>	<b>1.4</b>
Forestry Production	207	25	1.1	2.7	1.2	1.6	0.1	0.3

County / Industry Group	Direct Employment (Jobs)	Employment Contrib. (Jobs)	Direct Output or Revenues (M\$)	Output Contrib. (M\$)	Labor Income Contrib. (M\$)	Value Added Contrib. (M\$)	State-Local Tax Contrib. (M\$)	Federal Tax Contrib. (M\$)
Primary Wood Products Manufacturing	4	10	0.9	1.8	0.5	0.7	0.1	0.1
Forest Chemical Manufacturing	4	55	8.0	15.5	2.9	4.9	0.5	0.9
Wholesale Trade Lumber and Wood	4	11	1.0	2.0	0.7	1.2	0.2	0.2
<b>Hernando</b>	<b>113</b>	<b>180</b>	<b>70.6</b>	<b>81.0</b>	<b>13.6</b>	<b>32.2</b>	<b>8.4</b>	<b>4.2</b>
Forestry Production	24	32	1.4	3.4	1.5	2.1	0.1	0.3
Primary Wood Products Manufacturing	10	27	2.6	5.1	1.3	2.0	0.1	0.3
Secondary Wood Products Manufacturing	12	16	2.2	2.8	0.7	1.0	0.0	0.2
Converted Paper Products Manufacturing	7	22	3.7	6.0	1.3	2.3	0.1	0.3
Wholesale Trade Lumber and Wood	14	36	3.5	6.5	2.2	4.0	0.5	0.6
Biomass Electric Power Generation	47	47	57.3	57.3	6.6	20.8	7.4	2.4
<b>Highlands</b>	<b>182</b>	<b>69</b>	<b>5.8</b>	<b>10.2</b>	<b>3.5</b>	<b>5.5</b>	<b>0.5</b>	<b>0.9</b>
Forestry Production	161	30	1.3	3.2	1.4	1.9	0.1	0.3
Secondary Wood Products Manufacturing	12	16	2.2	2.7	0.7	1.0	0.0	0.2
Converted Paper Products Manufacturing	0	1	0.2	0.3	0.1	0.1	0.0	0.0
Wholesale Trade Lumber and Wood	8	22	2.1	3.9	1.3	2.4	0.3	0.4
<b>Hillsborough</b>	<b>1,905</b>	<b>5,370</b>	<b>706.9</b>	<b>1,216.8</b>	<b>296.9</b>	<b>513.4</b>	<b>45.1</b>	<b>79.9</b>
Forestry Production	125	33	1.4	3.5	1.5	2.1	0.1	0.4
Primary Wood Products Manufacturing	332	909	87.6	168.9	44.4	66.4	4.8	11.0
Secondary Wood Products Manufacturing	249	333	46.2	58.2	15.2	22.0	0.9	3.7
Converted Paper Products Manufacturing	629	2,133	357.3	577.6	120.9	220.3	13.7	32.7
Forest Chemical Manufacturing	43	566	81.8	158.6	29.5	49.8	4.8	8.9
Allied Manufacturing	7	27	1.8	4.5	1.5	2.2	0.1	0.4
Wholesale Trade Lumber and Wood	519	1,368	130.7	245.5	83.8	150.5	20.6	23.0
<b>Holmes</b>	<b>55</b>	<b>84</b>	<b>5.5</b>	<b>11.7</b>	<b>4.1</b>	<b>6.1</b>	<b>0.4</b>	<b>1.0</b>
Forestry Production	44	54	2.3	5.8	2.5	3.5	0.2	0.6
Primary Wood Products Manufacturing	7	18	1.8	3.4	0.9	1.3	0.1	0.2
Converted Paper Products Manufacturing	1	4	0.8	1.2	0.3	0.5	0.0	0.1
Wholesale Trade Lumber and Wood	3	7	0.7	1.3	0.4	0.8	0.1	0.1
<b>Indian River</b>	<b>170</b>	<b>527</b>	<b>29.8</b>	<b>65.1</b>	<b>25.1</b>	<b>37.2</b>	<b>2.5</b>	<b>6.0</b>
Forestry Production	136	440	19.1	46.9	20.1	28.5	1.6	4.7
Primary Wood Products Manufacturing	1	4	0.4	0.7	0.2	0.3	0.0	0.0
Secondary Wood Products Manufacturing	7	9	1.3	1.6	0.4	0.6	0.0	0.1
Converted Paper Products Manufacturing	9	29	4.9	7.9	1.6	3.0	0.2	0.4
Wholesale Trade Lumber and Wood	17	44	4.2	7.9	2.7	4.9	0.7	0.7
<b>Jackson</b>	<b>390</b>	<b>738</b>	<b>81.9</b>	<b>134.1</b>	<b>35.4</b>	<b>52.5</b>	<b>3.3</b>	<b>8.7</b>
Forestry Production	23	1	0.0	0.1	0.1	0.1	0.0	0.0
Primary Wood Products Manufacturing	171	469	45.2	87.2	22.9	34.3	2.5	5.7
Secondary Wood Products Manufacturing	192	257	35.6	44.8	11.7	16.9	0.7	2.8
Wholesale Trade Lumber and Wood	4	11	1.1	2.0	0.7	1.2	0.2	0.2
<b>Jefferson</b>	<b>57</b>	<b>941</b>	<b>41.4</b>	<b>101.3</b>	<b>43.1</b>	<b>61.1</b>	<b>3.5</b>	<b>10.0</b>
Forestry Production	52	928	40.2	98.9	42.4	60.1	3.4	9.9
Primary Wood Products Manufacturing	3	9	0.9	1.7	0.4	0.7	0.0	0.1
Wholesale Trade Lumber and Wood	1	4	0.3	0.6	0.2	0.4	0.1	0.1
<b>Lafayette</b>	<b>77</b>	<b>309</b>	<b>16.7</b>	<b>37.9</b>	<b>14.3</b>	<b>20.6</b>	<b>1.3</b>	<b>3.4</b>
Forestry Production	54	245	10.6	26.1	11.2	15.9	0.9	2.6
Primary Wood Products Manufacturing	22	60	5.8	11.1	2.9	4.4	0.3	0.7

County / Industry Group	Direct Employment (Jobs)	Employment Contrib. (Jobs)	Direct Output or Revenues (M\$)	Output Contrib. (M\$)	Labor Income Contrib. (M\$)	Value Added Contrib. (M\$)	State-Local Tax Contrib. (M\$)	Federal Tax Contrib. (M\$)
Wholesale Trade Lumber and Wood	1	4	0.3	0.6	0.2	0.4	0.1	0.1
<b>Lake</b>	<b>250</b>	<b>1,208</b>	<b>104.1</b>	<b>211.5</b>	<b>59.4</b>	<b>91.6</b>	<b>7.3</b>	<b>15.4</b>
Forestry Production	103	563	24.4	60.0	25.7	36.4	2.1	6.0
Primary Wood Products Manufacturing	71	195	18.8	36.2	9.5	14.2	1.0	2.4
Secondary Wood Products Manufacturing	18	24	3.3	4.2	1.1	1.6	0.1	0.3
Converted Paper Products Manufacturing	1	2	0.4	0.7	0.1	0.3	0.0	0.0
Forest Chemical Manufacturing	26	341	49.3	95.6	17.8	30.0	2.9	5.4
Wholesale Trade Lumber and Wood	31	83	7.9	14.9	5.1	9.1	1.2	1.4
<b>Lee</b>	<b>802</b>	<b>1,569</b>	<b>174.0</b>	<b>315.7</b>	<b>81.0</b>	<b>129.8</b>	<b>11.9</b>	<b>21.4</b>
Forestry Production	263	55	2.4	5.9	2.5	3.6	0.2	0.6
Primary Wood Products Manufacturing	230	630	60.7	117.0	30.8	46.0	3.3	7.6
Secondary Wood Products Manufacturing	159	213	29.6	37.2	9.7	14.0	0.6	2.3
Converted Paper Products Manufacturing	2	6	1.0	1.6	0.3	0.6	0.0	0.1
Forest Chemical Manufacturing	26	344	49.7	96.4	18.0	30.3	2.9	5.4
Wholesale Trade Lumber and Wood	122	321	30.7	57.6	19.7	35.3	4.8	5.4
<b>Leon</b>	<b>306</b>	<b>185</b>	<b>17.4</b>	<b>30.9</b>	<b>10.3</b>	<b>17.4</b>	<b>2.0</b>	<b>2.7</b>
Forestry Production	236	29	1.2	3.1	1.3	1.9	0.1	0.3
Primary Wood Products Manufacturing	3	9	0.9	1.7	0.4	0.7	0.0	0.1
Secondary Wood Products Manufacturing	22	29	4.1	5.1	1.3	1.9	0.1	0.3
Wholesale Trade Lumber and Wood	45	117	11.2	21.1	7.2	12.9	1.8	2.0
<b>Levy</b>	<b>199</b>	<b>350</b>	<b>20.5</b>	<b>44.0</b>	<b>16.3</b>	<b>23.6</b>	<b>1.5</b>	<b>3.9</b>
Forestry Production	160	262	11.3	27.9	12.0	16.9	1.0	2.8
Primary Wood Products Manufacturing	22	62	5.9	11.5	3.0	4.5	0.3	0.7
Secondary Wood Products Manufacturing	13	18	2.4	3.1	0.8	1.2	0.0	0.2
Wholesale Trade Lumber and Wood	3	9	0.8	1.6	0.5	1.0	0.1	0.1
<b>Liberty</b>	<b>584</b>	<b>1,635</b>	<b>183.4</b>	<b>322.2</b>	<b>83.0</b>	<b>133.3</b>	<b>11.7</b>	<b>21.0</b>
Forestry Production	124	357	15.5	38.1	16.3	23.1	1.3	3.8
Primary Wood Products Manufacturing	354	970	93.3	180.1	47.4	70.8	5.1	11.7
Converted Paper Products Manufacturing	84	284	47.5	76.8	16.1	29.3	1.8	4.4
Wholesale Trade Lumber and Wood	1	3	0.2	0.5	0.2	0.3	0.0	0.0
Biomass Electric Power Generation	22	22	26.8	26.8	3.1	9.7	3.5	1.1
<b>Madison</b>	<b>323</b>	<b>742</b>	<b>43.6</b>	<b>96.1</b>	<b>34.7</b>	<b>50.2</b>	<b>3.2</b>	<b>8.3</b>
Forestry Production	244	527	22.8	56.2	24.1	34.1	1.9	5.6
Primary Wood Products Manufacturing	75	205	19.8	38.1	10.0	15.0	1.1	2.5
Wholesale Trade Lumber and Wood	4	10	1.0	1.8	0.6	1.1	0.2	0.2
<b>Manatee</b>	<b>562</b>	<b>1,233</b>	<b>131.9</b>	<b>220.7</b>	<b>62.6</b>	<b>100.3</b>	<b>7.2</b>	<b>15.8</b>
Forestry Production	156	362	15.7	38.6	16.6	23.4	1.3	3.9
Primary Wood Products Manufacturing	46	127	12.2	23.5	6.2	9.2	0.7	1.5
Secondary Wood Products Manufacturing	208	279	38.6	48.6	12.7	18.3	0.8	3.1
Converted Paper Products Manufacturing	86	291	48.7	78.7	16.5	30.0	1.9	4.5
Wholesale Trade Lumber and Wood	66	175	16.7	31.3	10.7	19.2	2.6	2.9
<b>Marion</b>	<b>661</b>	<b>1,100</b>	<b>140.7</b>	<b>234.6</b>	<b>58.1</b>	<b>96.7</b>	<b>7.2</b>	<b>15.1</b>
Forestry Production	231	21	0.9	2.3	1.0	1.4	0.1	0.2
Primary Wood Products Manufacturing	132	361	34.8	67.1	17.7	26.4	1.9	4.4
Secondary Wood Products Manufacturing	123	164	22.8	28.7	7.5	10.8	0.4	1.8
Converted Paper Products Manufacturing	121	409	68.6	110.9	23.2	42.3	2.6	6.3



County / Industry Group	Direct Employment (Jobs)	Employment Contrib. (Jobs)	Direct Output or Revenues (M\$)	Output Contrib. (M\$)	Labor Income Contrib. (M\$)	Value Added Contrib. (M\$)	State-Local Tax Contrib. (M\$)	Federal Tax Contrib. (M\$)
Wholesale Trade Lumber and Wood	54	143	13.7	25.7	8.8	15.8	2.2	2.4
<b>Martin</b>	<b>320</b>	<b>688</b>	<b>56.9</b>	<b>103.9</b>	<b>33.3</b>	<b>50.4</b>	<b>3.7</b>	<b>8.3</b>
Forestry Production	168	370	16.0	39.5	16.9	24.0	1.4	3.9
Primary Wood Products Manufacturing	3	7	0.7	1.3	0.3	0.5	0.0	0.1
Secondary Wood Products Manufacturing	111	149	20.6	26.0	6.8	9.8	0.4	1.6
Converted Paper Products Manufacturing	1	4	0.8	1.2	0.3	0.5	0.0	0.1
Forest Chemical Manufacturing	6	76	11.0	21.4	4.0	6.7	0.6	1.2
Wholesale Trade Lumber and Wood	31	81	7.8	14.6	5.0	8.9	1.2	1.4
<b>Miami-Dade</b>	<b>3,319</b>	<b>9,010</b>	<b>1,179.6</b>	<b>2,029.3</b>	<b>507.4</b>	<b>890.2</b>	<b>80.0</b>	<b>136.6</b>
Forestry Production	276	4	0.2	0.4	0.2	0.3	0.0	0.0
Primary Wood Products Manufacturing	292	802	77.2	148.9	39.2	58.6	4.2	9.7
Secondary Wood Products Manufacturing	467	626	86.8	109.2	28.6	41.2	1.7	6.9
Primary Paper Products Manufacturing	37	429	31.7	88.3	23.3	40.0	3.0	6.1
Converted Paper Products Manufacturing	1,141	3,869	648.0	1,047.5	219.3	399.6	24.8	59.4
Forest Chemical Manufacturing	35	460	66.4	128.7	24.0	40.4	3.9	7.2
Allied Manufacturing	3	10	0.7	1.8	0.6	0.8	0.1	0.1
Wholesale Trade Lumber and Wood	1,067	2,811	268.6	504.4	172.2	309.3	42.3	47.2
<b>Monroe</b>	<b>152</b>	<b>35</b>	<b>3.7</b>	<b>6.2</b>	<b>2.0</b>	<b>3.5</b>	<b>0.4</b>	<b>0.5</b>
Forestry Production	136	0	0.0	0.0	0.0	0.0	0.0	0.0
Secondary Wood Products Manufacturing	6	8	1.1	1.3	0.3	0.5	0.0	0.1
Wholesale Trade Lumber and Wood	10	27	2.6	4.9	1.7	3.0	0.4	0.5
<b>Nassau</b>	<b>1,413</b>	<b>9,847</b>	<b>772.5</b>	<b>1,983.3</b>	<b>527.9</b>	<b>892.5</b>	<b>64.8</b>	<b>137.6</b>
Forestry Production	296	592	25.6	63.1	27.1	38.3	2.2	6.3
Primary Wood Products Manufacturing	149	408	39.3	75.8	20.0	29.8	2.2	4.9
Secondary Wood Products Manufacturing	114	153	21.2	26.7	7.0	10.1	0.4	1.7
Primary Paper Products Manufacturing	708	8,203	606.4	1,687.5	446.0	763.5	56.7	117.2
Converted Paper Products Manufacturing	136	461	77.2	124.8	26.1	47.6	3.0	7.1
Allied Manufacturing	2	7	0.4	1.1	0.4	0.5	0.0	0.1
Wholesale Trade Lumber and Wood	9	24	2.3	4.2	1.4	2.6	0.4	0.4
<b>Okaloosa</b>	<b>100</b>	<b>417</b>	<b>23.4</b>	<b>51.7</b>	<b>20.2</b>	<b>30.1</b>	<b>2.2</b>	<b>4.9</b>
Forestry Production	57	311	13.5	33.2	14.2	20.1	1.1	3.3
Secondary Wood Products Manufacturing	13	17	2.3	2.9	0.8	1.1	0.0	0.2
Allied Manufacturing	9	32	2.2	5.5	1.8	2.6	0.2	0.4
Wholesale Trade Lumber and Wood	21	57	5.4	10.1	3.5	6.2	0.9	0.9
<b>Okeechobee</b>	<b>34</b>	<b>29</b>	<b>3.0</b>	<b>4.7</b>	<b>1.5</b>	<b>2.4</b>	<b>0.2</b>	<b>0.4</b>
Forestry Production	20	5	0.2	0.5	0.2	0.3	0.0	0.1
Secondary Wood Products Manufacturing	9	12	1.7	2.1	0.5	0.8	0.0	0.1
Wholesale Trade Lumber and Wood	4	12	1.1	2.1	0.7	1.3	0.2	0.2
<b>Orange</b>	<b>1,272</b>	<b>4,166</b>	<b>436.1</b>	<b>857.8</b>	<b>231.7</b>	<b>398.8</b>	<b>37.3</b>	<b>61.7</b>
Forestry Production	94	28	1.2	3.0	1.3	1.8	0.1	0.3
Primary Wood Products Manufacturing	182	500	48.2	92.9	24.5	36.6	2.6	6.0
Secondary Wood Products Manufacturing	178	239	33.1	41.7	10.9	15.7	0.6	2.6
Primary Paper Products Manufacturing	110	1,274	94.2	262.1	69.3	118.6	8.8	18.2
Converted Paper Products Manufacturing	203	689	115.5	186.7	39.1	71.2	4.4	10.6
Forest Chemical Manufacturing	10	137	19.8	38.4	7.2	12.1	1.2	2.2
Wholesale Trade Lumber and Wood	493	1,298	124.0	232.9	79.5	142.8	19.5	21.8

County / Industry Group	Direct Employment (Jobs)	Employment Contrib. (Jobs)	Direct Output or Revenues (M\$)	Output Contrib. (M\$)	Labor Income Contrib. (M\$)	Value Added Contrib. (M\$)	State-Local Tax Contrib. (M\$)	Federal Tax Contrib. (M\$)
<b>Osceola</b>	<b>198</b>	<b>346</b>	<b>40.9</b>	<b>60.5</b>	<b>17.3</b>	<b>27.1</b>	<b>2.1</b>	<b>4.4</b>
Forestry Production	4	19	0.8	2.1	0.9	1.3	0.1	0.2
Primary Wood Products Manufacturing	14	40	3.8	7.4	1.9	2.9	0.2	0.5
Secondary Wood Products Manufacturing	145	194	27.0	33.9	8.9	12.8	0.5	2.1
Converted Paper Products Manufacturing	2	6	1.1	1.7	0.4	0.7	0.0	0.1
Wholesale Trade Lumber and Wood	33	86	8.2	15.4	5.3	9.5	1.3	1.4
<b>Palm Beach</b>	<b>1,510</b>	<b>2,809</b>	<b>308.7</b>	<b>540.7</b>	<b>149.0</b>	<b>244.0</b>	<b>23.7</b>	<b>39.2</b>
Forestry Production	362	12	0.5	1.3	0.6	0.8	0.0	0.1
Primary Wood Products Manufacturing	266	729	70.2	135.4	35.6	53.3	3.9	8.8
Secondary Wood Products Manufacturing	477	639	88.6	111.5	29.2	42.1	1.7	7.0
Primary Paper Products Manufacturing	14	158	11.7	32.6	8.6	14.8	1.1	2.3
Converted Paper Products Manufacturing	9	30	5.0	8.1	1.7	3.1	0.2	0.5
Forest Chemical Manufacturing	22	290	41.9	81.3	15.1	25.5	2.5	4.6
Allied Manufacturing	1	2	0.2	0.4	0.1	0.2	0.0	0.0
Wholesale Trade Lumber and Wood	360	948	90.6	170.1	58.1	104.3	14.3	15.9
<b>Pasco</b>	<b>204</b>	<b>406</b>	<b>49.0</b>	<b>86.5</b>	<b>22.2</b>	<b>37.9</b>	<b>3.3</b>	<b>5.9</b>
Forestry Production	84	41	1.8	4.4	1.9	2.7	0.2	0.4
Primary Wood Products Manufacturing	31	84	8.1	15.6	4.1	6.1	0.4	1.0
Secondary Wood Products Manufacturing	4	6	0.8	1.0	0.3	0.4	0.0	0.1
Converted Paper Products Manufacturing	45	152	25.5	41.2	8.6	15.7	1.0	2.3
Forest Chemical Manufacturing	2	22	3.2	6.2	1.2	1.9	0.2	0.3
Wholesale Trade Lumber and Wood	38	101	9.6	18.1	6.2	11.1	1.5	1.7
<b>Pinellas</b>	<b>864</b>	<b>2,091</b>	<b>259.9</b>	<b>444.9</b>	<b>115.9</b>	<b>199.1</b>	<b>17.7</b>	<b>30.7</b>
Forestry Production	85	9	0.4	1.0	0.4	0.6	0.0	0.1
Primary Wood Products Manufacturing	123	338	32.5	62.7	16.5	24.7	1.8	4.1
Secondary Wood Products Manufacturing	176	236	32.7	41.2	10.8	15.5	0.6	2.6
Primary Paper Products Manufacturing	8	88	6.5	18.0	4.8	8.2	0.6	1.3
Converted Paper Products Manufacturing	218	739	123.8	200.1	41.9	76.3	4.7	11.3
Allied Manufacturing	11	41	2.8	6.9	2.2	3.3	0.2	0.5
Wholesale Trade Lumber and Wood	243	641	61.2	115.0	39.3	70.5	9.6	10.8
<b>Polk</b>	<b>2,820</b>	<b>6,399</b>	<b>810.9</b>	<b>1,373.9</b>	<b>333.0</b>	<b>546.2</b>	<b>39.0</b>	<b>86.2</b>
Forestry Production	406	86	3.7	9.2	3.9	5.6	0.3	0.9
Primary Wood Products Manufacturing	970	2,658	255.9	493.7	129.9	194.2	14.0	32.1
Secondary Wood Products Manufacturing	617	826	114.5	144.2	37.7	54.4	2.2	9.1
Converted Paper Products Manufacturing	641	2,173	364.0	588.4	123.2	224.5	13.9	33.3
Forest Chemical Manufacturing	16	207	29.9	57.9	10.8	18.2	1.8	3.2
Wholesale Trade Lumber and Wood	170	448	42.8	80.5	27.5	49.3	6.7	7.5
<b>Putnam</b>	<b>1,074</b>	<b>4,072</b>	<b>603.7</b>	<b>1,015.7</b>	<b>222.9</b>	<b>392.3</b>	<b>25.6</b>	<b>60.0</b>
Forestry Production	86	473	20.5	50.4	21.6	30.6	1.7	5.0
Primary Wood Products Manufacturing	40	110	10.6	20.4	5.4	8.0	0.6	1.3
Secondary Wood Products Manufacturing	8	11	1.5	1.8	0.5	0.7	0.0	0.1
Converted Paper Products Manufacturing	902	3,056	511.9	827.6	173.2	315.7	19.6	46.9
Forest Chemical Manufacturing	30	396	57.2	110.9	20.7	34.8	3.4	6.2
Allied Manufacturing	4	16	1.1	2.7	0.9	1.3	0.1	0.2
Wholesale Trade Lumber and Wood	4	10	1.0	1.8	0.6	1.1	0.2	0.2
<b>Santa Rosa</b>	<b>243</b>	<b>1,713</b>	<b>165.7</b>	<b>346.4</b>	<b>86.2</b>	<b>137.8</b>	<b>11.1</b>	<b>23.2</b>

County / Industry Group	Direct Employment (Jobs)	Employment Contrib. (Jobs)	Direct Output or Revenues (M\$)	Output Contrib. (M\$)	Labor Income Contrib. (M\$)	Value Added Contrib. (M\$)	State-Local Tax Contrib. (M\$)	Federal Tax Contrib. (M\$)
Forestry Production	58	501	21.7	53.4	22.9	32.4	1.8	5.3
Primary Wood Products Manufacturing	66	181	17.4	33.6	8.8	13.2	1.0	2.2
Secondary Wood Products Manufacturing	28	38	5.3	6.6	1.7	2.5	0.1	0.4
Primary Paper Products Manufacturing	25	285	21.1	58.7	15.5	26.6	2.0	4.1
Forest Chemical Manufacturing	51	667	96.4	186.9	34.8	58.7	5.7	10.5
Wholesale Trade Lumber and Wood	15	40	3.8	7.1	2.4	4.4	0.6	0.7
<b>Sarasota</b>	<b>319</b>	<b>773</b>	<b>104.1</b>	<b>172.7</b>	<b>43.3</b>	<b>75.6</b>	<b>6.4</b>	<b>11.5</b>
Forestry Production	35	12	0.5	1.3	0.6	0.8	0.0	0.1
Primary Wood Products Manufacturing	14	39	3.8	7.3	1.9	2.9	0.2	0.5
Secondary Wood Products Manufacturing	66	88	12.2	15.4	4.0	5.8	0.2	1.0
Converted Paper Products Manufacturing	114	387	64.9	104.9	22.0	40.0	2.5	5.9
Allied Manufacturing	9	31	2.1	5.3	1.7	2.5	0.2	0.4
Wholesale Trade Lumber and Wood	81	215	20.5	38.5	13.2	23.6	3.2	3.6
<b>Seminole</b>	<b>849</b>	<b>4,943</b>	<b>417.8</b>	<b>1,008.2</b>	<b>268.2</b>	<b>456.6</b>	<b>35.5</b>	<b>70.4</b>
Forestry Production	20	9	0.4	0.9	0.4	0.6	0.0	0.1
Primary Wood Products Manufacturing	82	225	21.7	41.8	11.0	16.4	1.2	2.7
Secondary Wood Products Manufacturing	205	275	38.1	48.0	12.6	18.1	0.7	3.0
Primary Paper Products Manufacturing	330	3,827	282.9	787.3	208.1	356.2	26.4	54.7
Converted Paper Products Manufacturing	68	232	38.8	62.7	13.1	23.9	1.5	3.6
Wholesale Trade Lumber and Wood	143	376	35.9	67.4	23.0	41.3	5.7	6.3
<b>St Johns</b>	<b>295</b>	<b>914</b>	<b>93.1</b>	<b>157.4</b>	<b>45.8</b>	<b>72.5</b>	<b>4.9</b>	<b>11.5</b>
Forestry Production	35	367	15.9	39.1	16.8	23.7	1.3	3.9
Primary Wood Products Manufacturing	13	34	3.3	6.4	1.7	2.5	0.2	0.4
Secondary Wood Products Manufacturing	147	196	27.2	34.3	9.0	12.9	0.5	2.2
Converted Paper Products Manufacturing	67	227	38.1	61.6	12.9	23.5	1.5	3.5
Wholesale Trade Lumber and Wood	34	89	8.5	16.0	5.5	9.8	1.3	1.5
<b>St Lucie</b>	<b>617</b>	<b>1,206</b>	<b>121.8</b>	<b>221.4</b>	<b>60.1</b>	<b>91.8</b>	<b>7.3</b>	<b>15.0</b>
Forestry Production	123	2	0.1	0.2	0.1	0.1	0.0	0.0
Primary Wood Products Manufacturing	342	938	90.3	174.1	45.8	68.5	5.0	11.3
Secondary Wood Products Manufacturing	103	139	19.2	24.2	6.3	9.1	0.4	1.5
Wholesale Trade Lumber and Wood	48	128	12.2	22.9	7.8	14.1	1.9	2.1
<b>Sumter</b>	<b>187</b>	<b>517</b>	<b>47.4</b>	<b>91.6</b>	<b>25.4</b>	<b>38.3</b>	<b>2.9</b>	<b>6.3</b>
Forestry Production	14	53	2.3	5.6	2.4	3.4	0.2	0.6
Primary Wood Products Manufacturing	156	429	41.3	79.7	21.0	31.3	2.3	5.2
Secondary Wood Products Manufacturing	7	9	1.3	1.6	0.4	0.6	0.0	0.1
Wholesale Trade Lumber and Wood	10	26	2.5	4.7	1.6	2.9	0.4	0.4
<b>Suwannee</b>	<b>258</b>	<b>598</b>	<b>27.8</b>	<b>66.5</b>	<b>27.6</b>	<b>39.5</b>	<b>2.4</b>	<b>6.5</b>
Forestry Production	244	561	24.3	59.8	25.7	36.3	2.1	6.0
Primary Wood Products Manufacturing	8	21	2.0	3.9	1.0	1.5	0.1	0.3
Wholesale Trade Lumber and Wood	6	15	1.4	2.7	0.9	1.7	0.2	0.3
<b>Taylor</b>	<b>1,595</b>	<b>11,456</b>	<b>876.7</b>	<b>2,244.5</b>	<b>607.5</b>	<b>1,016.1</b>	<b>73.4</b>	<b>157.7</b>
Forestry Production	453	1,478	64.0	157.6	67.5	95.7	5.4	15.7
Primary Wood Products Manufacturing	222	608	58.6	113.0	29.7	44.4	3.2	7.3
Primary Paper Products Manufacturing	744	8,627	637.7	1,774.6	469.0	802.9	59.6	123.2
Converted Paper Products Manufacturing	150	508	85.1	137.5	28.8	52.5	3.3	7.8
Forest Chemical Manufacturing	15	198	28.6	55.5	10.3	17.4	1.7	3.1

County / Industry Group	Direct Employment (Jobs)	Employment Contrib. (Jobs)	Direct Output or Revenues (M\$)	Output Contrib. (M\$)	Labor Income Contrib. (M\$)	Value Added Contrib. (M\$)	State-Local Tax Contrib. (M\$)	Federal Tax Contrib. (M\$)
Allied Manufacturing	8	30	2.1	5.1	1.7	2.4	0.2	0.4
Wholesale Trade Lumber and Wood	2	7	0.6	1.2	0.4	0.7	0.1	0.1
<b>Union</b>	<b>317</b>	<b>768</b>	<b>62.0</b>	<b>121.7</b>	<b>36.6</b>	<b>53.8</b>	<b>3.6</b>	<b>8.9</b>
Forestry Production	115	260	11.2	27.7	11.9	16.8	0.9	2.8
Primary Wood Products Manufacturing	169	463	44.6	86.0	22.6	33.8	2.4	5.6
Secondary Wood Products Manufacturing	32	42	5.9	7.4	1.9	2.8	0.1	0.5
Wholesale Trade Lumber and Wood	1	3	0.3	0.6	0.2	0.4	0.0	0.1
<b>Volusia</b>	<b>220</b>	<b>549</b>	<b>51.3</b>	<b>93.2</b>	<b>28.6</b>	<b>46.0</b>	<b>4.4</b>	<b>7.4</b>
Forestry Production	47	138	6.0	14.7	6.3	8.9	0.5	1.5
Primary Wood Products Manufacturing	33	91	8.8	16.9	4.4	6.6	0.5	1.1
Secondary Wood Products Manufacturing	65	87	12.0	15.1	4.0	5.7	0.2	1.0
Forest Chemical Manufacturing	3	45	6.5	12.6	2.3	4.0	0.4	0.7
Wholesale Trade Lumber and Wood	72	189	18.1	33.9	11.6	20.8	2.8	3.2
<b>Wakulla</b>	<b>29</b>	<b>244</b>	<b>12.6</b>	<b>27.6</b>	<b>11.2</b>	<b>16.0</b>	<b>0.9</b>	<b>2.6</b>
Forestry Production	14	221	9.6	23.6	10.1	14.3	0.8	2.3
Secondary Wood Products Manufacturing	14	19	2.6	3.3	0.9	1.2	0.1	0.2
Wholesale Trade Lumber and Wood	2	4	0.4	0.8	0.3	0.5	0.1	0.1
<b>Walton</b>	<b>119</b>	<b>732</b>	<b>46.0</b>	<b>97.1</b>	<b>34.4</b>	<b>49.9</b>	<b>3.2</b>	<b>8.2</b>
Forestry Production	17	485	21.0	51.7	22.2	31.4	1.8	5.2
Primary Wood Products Manufacturing	72	198	19.1	36.8	9.7	14.5	1.0	2.4
Secondary Wood Products Manufacturing	22	29	4.1	5.1	1.3	1.9	0.1	0.3
Wholesale Trade Lumber and Wood	7	19	1.8	3.4	1.2	2.1	0.3	0.3
<b>Washington</b>	<b>182</b>	<b>384</b>	<b>17.2</b>	<b>41.7</b>	<b>17.7</b>	<b>25.2</b>	<b>1.5</b>	<b>4.1</b>
Forestry Production	178	374	16.2	39.9	17.1	24.2	1.4	4.0
Primary Wood Products Manufacturing	1	3	0.3	0.5	0.1	0.2	0.0	0.0
Wholesale Trade Lumber and Wood	3	8	0.7	1.4	0.5	0.8	0.1	0.1