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## The 2019 Statewide Economic Contribution of Maine's Forest Products Sector

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2019 Forest Products Economic Impact: September 2021

**THE 2019 STATEWIDE ECONOMIC CONTRIBUTION OF MAINE'S FOREST PRODUCTS SECTOR<sup>1</sup>**

September 2021

Megan Bailey and Sheldon Green<sup>2</sup>

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<sup>1</sup>This analysis was funded in part by the Maine Forest Products Council

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## EXECUTIVE SUMMARY

Maine's forest products sector includes (but is not limited to) businesses, organizations, and individuals involved with logging and forestry, paper and related product manufacturing, sawmills and wood-product manufacturing, wood furniture manufacturing, the generation of biomass electricity, and the Maine Forest Service.

The forest products sector contributes *directly* to the Maine economy through its day-to-day operations (e.g. direct sales, wages, employment of workers). In addition to these direct impacts, every dollar that is spent on local purchases by any business, organization or individual involved in the forest products sector circulates throughout Maine's economy and is used by other businesses and organizations to pay their employees, taxes, and purchase more goods and services. This "multiplier effect" is a crucial component to consider when studying the total economic contribution of the forest products sector to the state of Maine. When considering these multiplier effects, Maine's forest products sector contributed an estimated \$8.1 billion in total output and over 31,000 full and part-time jobs to the state economy in 2019.

## HIGHLIGHTS OF MAIN FINDINGS

- The estimated overall annual (2019) economic contribution of Maine's forest products sector, including multiplier effects, was an estimated \$8.1 billion in output, over 31,000 jobs, and \$1.7 billion in labor income (Table 2).
- The total employment impact of 31,822 jobs in 2019 is equivalent to about 4 percent of the jobs in Maine. Put another way, roughly 1 out of 25 jobs in Maine is associated with the forest products sector.
- The total economic contribution of Maine's forest products sector in 2019 was associated with an estimated fiscal impact of \$276 million in state and local taxes. This tax impact is equivalent to 3.4 percent of the forest product sector's total (output) economic contribution.
- Maine's forest products sector had a total, including multiplier effects, value-added impact of an estimated \$2.8 billion. This is equivalent to 4.14 percent of the state's gross domestic product in 2019. Put another way, about \$1 out of every \$25 in Maine gross state product is associated with the forest products industry.

## 2019 Forest Products Economic Impact: September 2021

- The Maine forest products sector impacts businesses across the entire state through the activities of forest products companies (organizations and individuals) and the purchases that they (and their employees) make. The total employment impact varies from an estimated 121 jobs in Sagadahoc County to 5,225 jobs in Aroostook County (see Table 4).
- The forest products sector in Maine impacts businesses of all types through the purchases made by forest product sector companies (organizations and individuals) and their employees. For example, the 19,604 full- and part-time jobs counted in the forest product industry's multiplier effects includes 644 jobs in real estate, 589 jobs in full-service restaurants, and 552 jobs in hospitals (see Table 5).

BACKGROUND

The forest products sector in Maine consists of businesses, organizations, and individuals involved in one of eight primary areas. These are harvesting, biomass electricity generation, sawmills, plywood and veneer, pulp and paper manufacturing, wood furniture, wood products manufacturing and the Maine Forest Service. Table 1, below, shows a breakdown of industries that make up the forest products industry and its supporting sectors.

**Table 1. Breakdown of Industries Related to Maine's Forest Products Industry**

| Sector                         | Industries Included in Sector             | Description  |
|--------------------------------|---|--|
| Forest Products Sector         | Harvesting, Logging, and Other Inputs     | Forestry and logging<br>Support activities for agriculture and forestry<br>Electric power generation - Biomass<br>Sawmill, woodworking, and paper machinery                                      |
|                                | Intermediate Manufacturing and Processing | Wood Product Manufacturing<br>Paper Manufacturing  |
|                                | Final Manufacturing                       | Wood kitchen cabinet and countertop manufacturing<br>Non-upholstered wood household furniture manufacturing<br>Wood office furniture manufacturing<br>Custom architectural woodwork and millwork |
| Forest Products Support Sector | Regeneration and Management               | Greenhouse, nursery, and floriculture production<br>Management consulting services   |
|                                | Machinery Lease and Repair                | Farm machinery and equipment manufacturing<br>Commercial and industrial machinery and equipment rental and leasing<br>Commercial and industrial machinery and equipment rental and maintenance   |
|                                | Transportation                            | Rail transportation<br>Truck transportation  |
|                                | Research                                  | Environmental and other technical consulting services<br>Scientific research and development services  |

2019 Forest Products Economic Impact: September 2021

TOTAL ANNUAL STATEWIDE ECONOMIC CONTRIBUTION

**Table 2. Total Annual Statewide Economic Contribution of Maine's Forest Products Sector, 2019**

|              | Direct          | Indirect        | Induced         | Total           |
|--------------|-----------------|-----------------|-----------------|-----------------|
| Output       | \$4,744,711,433 | \$2,139,538,095 | \$1,171,989,524 | \$8,056,239,053 |
| Employment   | 12,218          | 11,446          | 8,158           | 31,822          |
| Labor Income | \$682,264,395   | \$622,919,769   | \$374,111,171   | \$1,679,295,335 |

Notes: Direct output, employment and labor income figures were estimated using information from the U.S. Census Bureau Annual Survey of Manufacturers, the County Business Patterns of the U.S. Census Bureau, Nonemployer Statistics of the U.S. Census Bureau, budget figures for the Maine Forest Service, and the 2019 Maine IMPLAN model; multiplier effects are estimated using an economic impact (IMPLAN) model of the Maine economy; values are in 2019 dollars.

**Table 3. Total Annual Statewide Economic Contribution of Maine's Forest Products Sector by Sector Category, 2019**

|              | Direct Contribution    | Multiplier Effects (Indirect + Induced) |                                 |                             | Total Contribution |
|--------------|------------------------|---|---------------------------------|-----------------------------|--------------------|
|              | Forest Products Sector | Forest Products Sector                  | Forest Products Support Sectors | Non-Forest Products Sectors |                    |
| Output       | \$4,744,711,433        | \$566,910,208                           | \$218,813,508                   | \$2,525,803,904             | \$8,056,239,053    |
| Employment   | 12,218                 | 3,462                                   | 1,292                           | 14,849                      | 31,822             |
| Labor Income | \$682,264,395          | \$147,982,348                           | \$91,092,498                    | \$757,956,094               | \$1,679,295,335    |

Notes: Industry categories are as defined in Table 1; direct output, employment and labor income figures were estimated using information from the U.S. Census Bureau Annual Survey of Manufacturers, the County Business Patterns of the U.S. Census Bureau, Nonemployer Statistics of the U.S. Census Bureau, budget figures for the Maine Forest Service, and the 2019 Maine IMPLAN model; multiplier effects are estimated using an economic impact (IMPLAN) model of the Maine economy; values are in 2019 dollars; the forest products sector is included in the direct contribution *and* the multiplier effect because inter-industry spending occurs (e.g. sawmills and paper product manufacturers (counted in the direct contribution) purchase goods and services from businesses involved in logging (counted in the multiplier effects)).

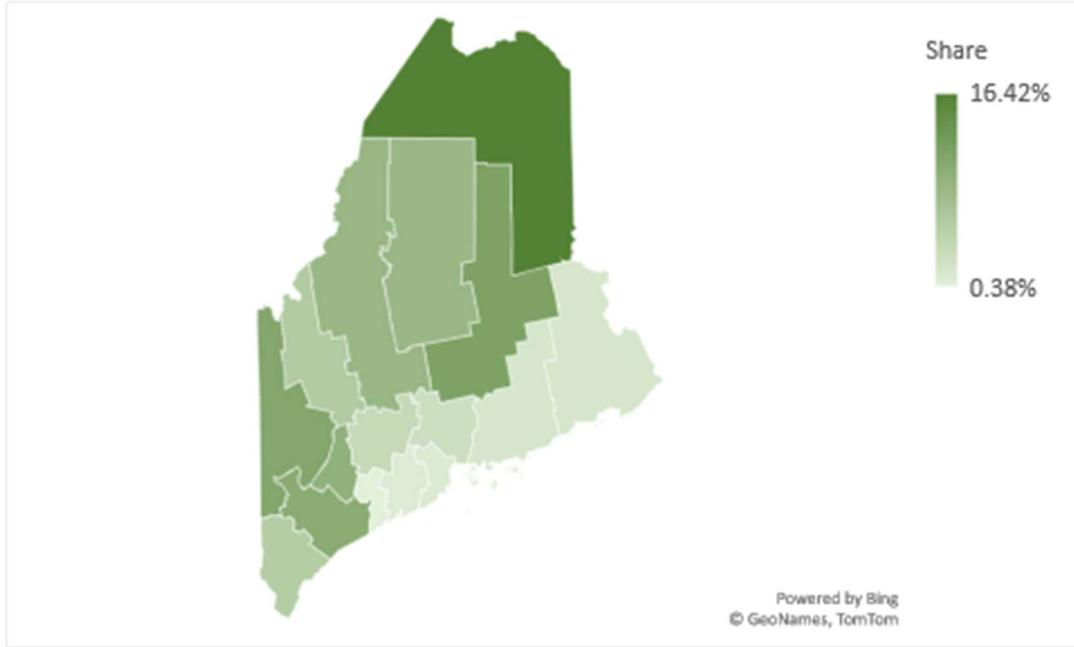
DETAIL: EMPLOYMENT IMPACTS

**Table 4. Maine Forest Products Industry Employment Impact by County, 2019**

| County       | Total Employment Impact |
|--------------|-------------------------|
| Androscoggin | 2,992                   |
| Aroostook    | 5,225                   |
| Cumberland   | 3,253                   |
| Franklin     | 1,848                   |
| Hancock      | 591                     |
| Kennebec     | 1,145                   |
| Knox         | 379                     |
| Lincoln      | 342                     |
| Oxford       | 3,496                   |
| Penobscot    | 3,717                   |
| Piscataquis  | 2,718                   |
| Sagadahoc    | 121                     |
| Somerset     | 2,759                   |
| Waldo        | 911                     |
| Washington   | 597                     |
| York         | 1,726                   |
| <b>TOTAL</b> | <b>31,822</b>           |

Notes: County-level employment figures are generated using data from County Business Patterns and Nonemployer Statistics of the U.S. Census Bureau. County employment shares are based on direct employment in selected industries (NAICS 113, 1153, 321, 322, 337110, 337122, 337212) and these shares are applied to the statewide total employment impact.

Map 1. Maine Forest Products Industry Employment Impact by County, 2019



2019 Forest Products Economic Impact: September 2021

**Table 5. Industries Impacted by Maine’s Forest Products Sector, 2019**

|                                | Included in Sectors  | Total Employment Impact |
|--------------------------------|--|-------------------------|
| Forest Products Sector         | Paper Manufacturing  | 4,909                   |
|                                | Wood Product Manufacturing                                     | 4,808                   |
|                                | Forestry and Logging   | 4,187                   |
|                                | Other  | 1,766                   |
|                                | <b>Subtotal</b>  | <b>15,680</b>           |
| Forest Products Support Sector | Truck Transportation   | 708                     |
|                                | Rail Transportation  | 138                     |
|                                | Management Consulting  | 105                     |
|                                | Other  | 341                     |
|                                | <b>Subtotal</b>  | <b>1,292</b>            |
| Non-Forest Products Sectors    | Management of companies  | 646                     |
|                                | Real estate  | 644                     |
|                                | Full-service restaurants                                       | 589                     |
|                                | Hospitals  | 552                     |
|                                | Limited-service restaurants                                    | 362                     |
|                                | Services to buildings  | 348                     |
|                                | Architectural, engineering, and related services               | 215                     |
|                                | Accounting, tax preparation, bookkeeping, and payroll services | 210                     |
|                                | Other  | 11,283                  |
|                                | <b>Subtotal</b>  | <b>14,849</b>           |
| <b>TOTAL</b>                   |  | <b>31,822</b>           |

Notes: The forest products industry employment impact of 15,680 full and part-time jobs includes the direct employment of 12,218 and 3,462 jobs counted in the multiplier effects (Table 3). The forest products support industry sectors and non-forest product industry sectors listed by title have the largest employment impacts as estimated by the 2019 Maine IMPLAN model. Employment figures count full and part-time jobs that are located in Maine. Numbers may not sum to totals due to rounding.