



Montana's Forest Products Industry and Timber Harvest, 2014

Resource Bulletin RMRS-RB-32-3
March 2020

Part III: Sales, Employment and Economic Contribution

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Introduction

This Resource Bulletin is part of a series of reports presenting findings from a census of Montana's primary forest products industry. Part III of the series presents information on sales value and employment associated with primary wood products manufacturing, the economic contribution of forest products manufacturing in the State, and an analysis of the broader forest industry and how it has changed over time. All dollar figures included have been adjusted for inflation to constant 2014 dollars, unless otherwise noted.

This survey effort is the eighth application of its kind in Montana and presents information from primary wood products manufacturers located both within the State, as well as facilities in surrounding States, that receive timber harvested from Montana. Primary forest product manufacturers are firms that process timber into manufactured products, such as lumber and plywood, as well as facilities like particle board plants that use the wood fiber residue directly from timber processors. Through a written questionnaire, phone or in-person interview, timber-processing and residue-utilizing facilities provided information about their 2014 operations, including:

- Plant location, production, capacity, and employment.
- Volume of raw material received, by county and ownership.
- Species of timber received and live/dead proportions.

- Finished product volumes, types, sales value, and market locations.
- Volume, utilization and marketing of manufacturing residue.

In the event of nonresponse from a facility, data collected in previous surveys were updated using current data collected for facilities of a similar size, product type, and location as well as industry data on market trends and prices.

The University of Montana's Bureau of Business and Economic Research (BBER) and the USDA Forest Service's Forest Inventory and Analysis (FIA) Program at the Rocky Mountain Research Station (Ogden, Utah) cooperated in the analysis and preparation of this report. In collaboration with the FIA programs at the Rocky Mountain and Pacific Northwest Research Stations, BBER has developed the Forest Industries Data Collection System (FIDACS) to collect, compile, and make available State and county information on the operations of the forest products industry. Information collected from manufacturers is stored at the BBER in Missoula, Montana.

Additional information not presented here, including the full set of data tables and map of active facilities, is available on the BBER website www.bber.umt.edu/FIR/S_MT.asp and upon request. However, individual firm-level data are confidential and will not be released.



Montana's Primary Product Sales Value and Markets

The 2014 FIDACS census identified 102 active primary forest products manufacturers in Montana, producing an array of products including lumber and other sawn products, plywood, particleboard and fiberboard, house logs, posts, poles and rails, firewood, log furniture, and fuel pellets. Montana manufacturers reported a total sales value of primary wood products of nearly \$605 million dollars, free on board (f.o.b.) the producing mill. This represented a six percent decrease from the \$644 million in sales reported in 2009. Sales of lumber, plywood, and other sawn products accounted for more than half (nearly 57 percent) of the total sales value, increasing more than 80 percent over 2009 sales to \$342 million in 2014 (McIver et al. 2013). The next largest sector, residue-related products, saw a drastic decline in sales from \$405 million in 2009 to approximately \$220 million for 2014 as a result of the closure of the Smurfit-Stone containerboard plant in Missoula County in early 2010 (table 1).

Wood products manufactured within the State of Montana were largely sold to other regions. Approximately \$521 million (86 percent) of Montana's primary wood products sales occurred outside the State, while only

about \$84 million (14 percent) of primary product sales stayed in-State (table 1). Lumber, plywood and other sawn products accounted for the majority (\$55 million) of in-State sales. The leading geographic markets reported for Montana's primary wood products were the North Central region (31 percent) followed by the Far West (17 percent), and the South (15 percent), with Montana and the Rockies accounting for just under 14 percent each (fig. 1; table 1). Mills distributed their products through their own distribution channels or through independent wholesalers and selling agents. Because of subsequent wholesaling transactions, the geographic destination reported here may not precisely reflect final delivery points of shipments.

Montana's Forest Industry Employment and Labor Income

Primary forest products manufacturers are just one component of the broader forest industry in Montana. The classification of forest industries used here follows the North American Industry Classification System (NAICS) available online via the US Department of Commerce Bureau of Economic Analysis (BEA) website. The forest industry can be found in four categories: NAICS 113—forestry and logging; NAICS

Table 1—Sales value of Montana's primary wood products, selected years.

Product	1981	1988	1993	1998	2004	2009	2014
----- Thousand 2014 dollars -----							
Lumber and other sawn products	524,168	692,433	1,063,045	662,047	773,775	190,032	342,636
Plywood	219,292	90,029	284,696	282,701	^a	^a	^a
Pulp, paper, particleboard, fiberboard, and other residue related products	499,889	659,157	557,669	476,839	560,028	405,034	220,143
House logs	18,079	53,129	91,537	136,041	99,361	22,879	22,369
Other finished products ^b	51,446	19,637	20,622	19,219	21,388	26,278	19,423
Total	1,312,873	1,614,384	2,017,569	1,576,848	1,454,551	644,224	604,571

^aPlywood sales value combined with lumber to prevent disclosure.

^bOther products include post and poles, industrial fuelwood, and log furniture.

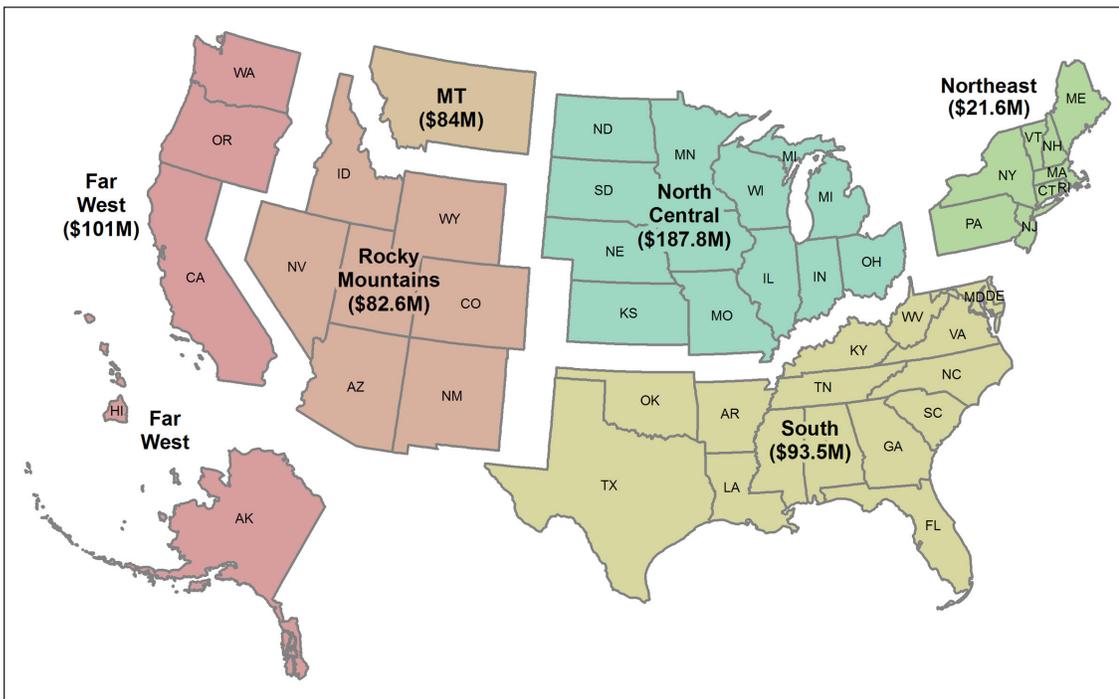


Figure 1—Destination and sales value of Montana's primary wood products, 2014.

1153—forestry support activities; NAICS 321—wood products manufacturing; and NAICS 322—paper manufacturing. These categories include employees who work in both the primary and secondary wood products and paper manufacturing sectors. County Business Patterns (CBP) data from the U.S. Census Bureau are used to distinguish primary from secondary manufacturing employment and labor income. Wage and production data collected by BBER in cooperation with the Inland Northwest Forest Products Research Consortium was used in conjunction with CBP to further refine primary and secondary wood products manufacturing categories.

It should be noted that the four NAICS categories used to characterize the forest industry likely underestimate total employment because they do not include log hauling (trucking) companies, lumber and construction material wholesalers, road construction and maintenance contractors, and forest management services performed by government agencies or nonprofit

organizations. The Bureau of Labor Statistics' (BLS) Quarterly Census of Employment and Wages (QCEW) data are coupled with BEA data to determine forestry support activities. These publicly available data sources provide another point of comparison for estimates of employees and labor income for the primary forest products manufacturers to compare with BBER survey data, as well as additional information on the larger forest industry.

In 2014, total employment in the forest industry in Montana was an estimated 7,529 full- and part-time workers (USDC BEA 2016; USDC CB 2016; USDL BLS 2016). Of these, approximately 1,964 workers were employed in the manufacturing of primary wood products. In addition, we estimate that roughly 1,421 workers were employed in forestry and logging, 2,812 workers provided supporting activities for forestry operations, an estimated 26 workers were employed in paper manufacturing, and the remaining 1,306 workers were employed in secondary manufacturing of wood products.



While 2009 signaled the end of the recession (NBER 2010), 2010 saw the lowest levels of employment for Montana’s forest industry in the past two decades. From 2010 to 2014, employment in forestry support activities has led the recovery increasing by 15 percent, followed by primary wood products manufacturing, which increased 10 percent. Forestry and logging employment only grew by 5 percent, while secondary manufacturing saw the smallest growth at 3 percent. Paper manufacturing experienced the most dramatic change, declining during the same four year period by 85 percent (fig. 2). Overall, employment across the forest industry has increased by 7 percent since 2010. While paper manufacturing has experienced the most severe decline over the last decade, all employment sectors (with the exception of forestry support activities) have decreased since 2005. Employment in primary wood products manufacturing fell by approximately 42 percent between 2005 and 2014 as a result of the Great Recession and weak demand

for wood products causing mill closures and curtailments. The forestry and logging sector saw a 37 percent decline, and secondary manufacturing was down 33 percent over the same period.

Workers in the forest industry earned just over \$313 million in labor income or worker earnings. Labor income includes wages and salaries, some benefits, and earnings of the self-employed. Labor income growth for the forest industry as a whole (9 percent) between 2010 and 2014 exceeded total forest industry employment growth (7 percent). Since 2010, inflation-adjusted earnings in the primary forest products sector increased 13 percent, slightly outpacing employment growth over the same period. The average primary wood products manufacturing employee earned \$40,988 in 2014. Labor income for employees in forestry and logging grew by 19 percent (fig. 3) between 2010 and 2014, over three times the growth in employment (5 percent) over the same period. Similarly, increases in

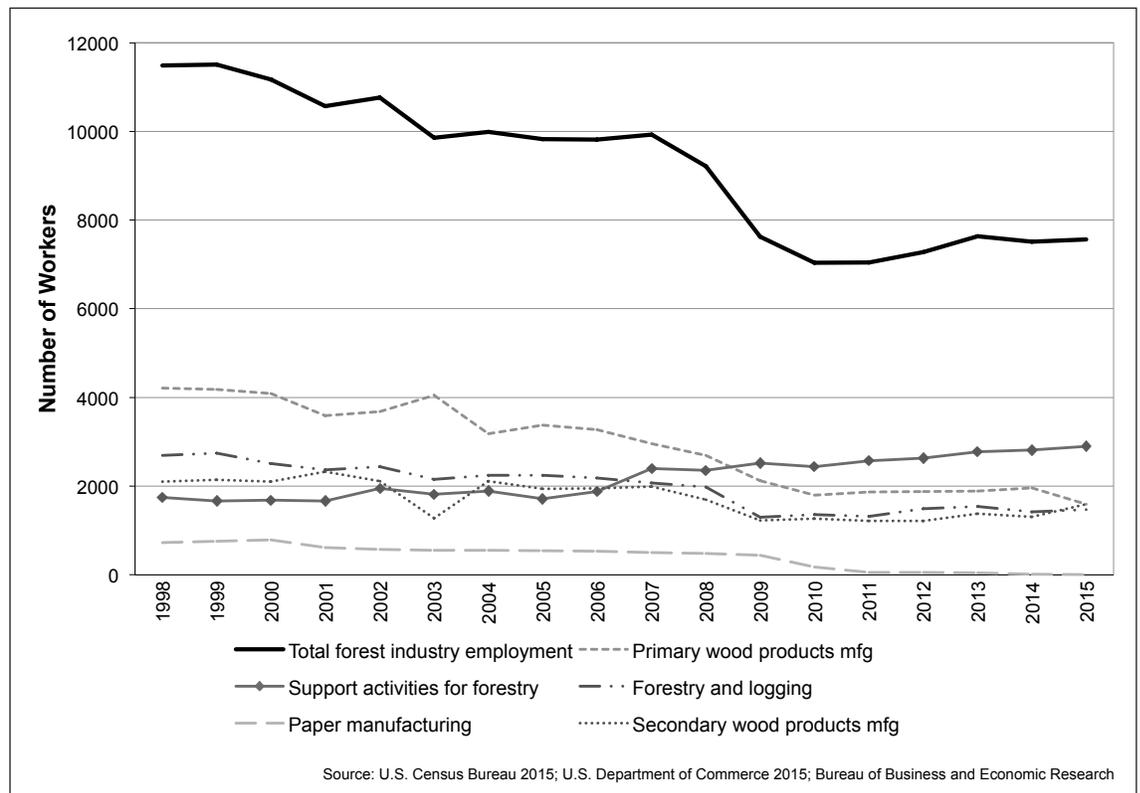


Figure 2—Employment in Montana’s forest industry, 1998-2015.

labor income for secondary wood products manufacturing outpaced employment growth three-fold, increasing by 9 percent. In conjunction with plummeting employment in the paper manufacturing sector, labor income also decreased dramatically. However, labor income for forestry support activities increased 34 percent from 2010 to 2014, more than twice the growth in employment.

The outpacing of wage growth over employment could be attributed to a variety of factors including: general wage increases across forest industry sectors, efforts towards employee retention, and as the inclusion of both full and part-time workers in BEA employment estimates. For example, when wages grow faster than employment it may point to employees who were previously part-time adding more hours or days of work; this increases wages paid by businesses, but does not change the overall employment estimate. While nearly each sector of the

forest industry has experienced increasing labor income levels since 2010, income levels have declined across the industry—with the exception of support activities for forestry—over the course of the last decade.

Support activities for forestry (NAICS 1153) encompass a variety of activities including wildfire suppression and prevention activities, tree thinning and planting, and pest management. The employment and wage growth experienced in this category may be explained by a number of interrelated factors: first, the timing of the upward trend (2009-10) coincides with federal investments in infrastructure made through the American Reinvestment and Recovery Act (ARRA). Second, as timber harvest levels have declined, businesses previously involved in commercial timber harvesting have diversified into non-commercial thinning, fuels reduction and wildfire suppression activities, thus potentially leading to a

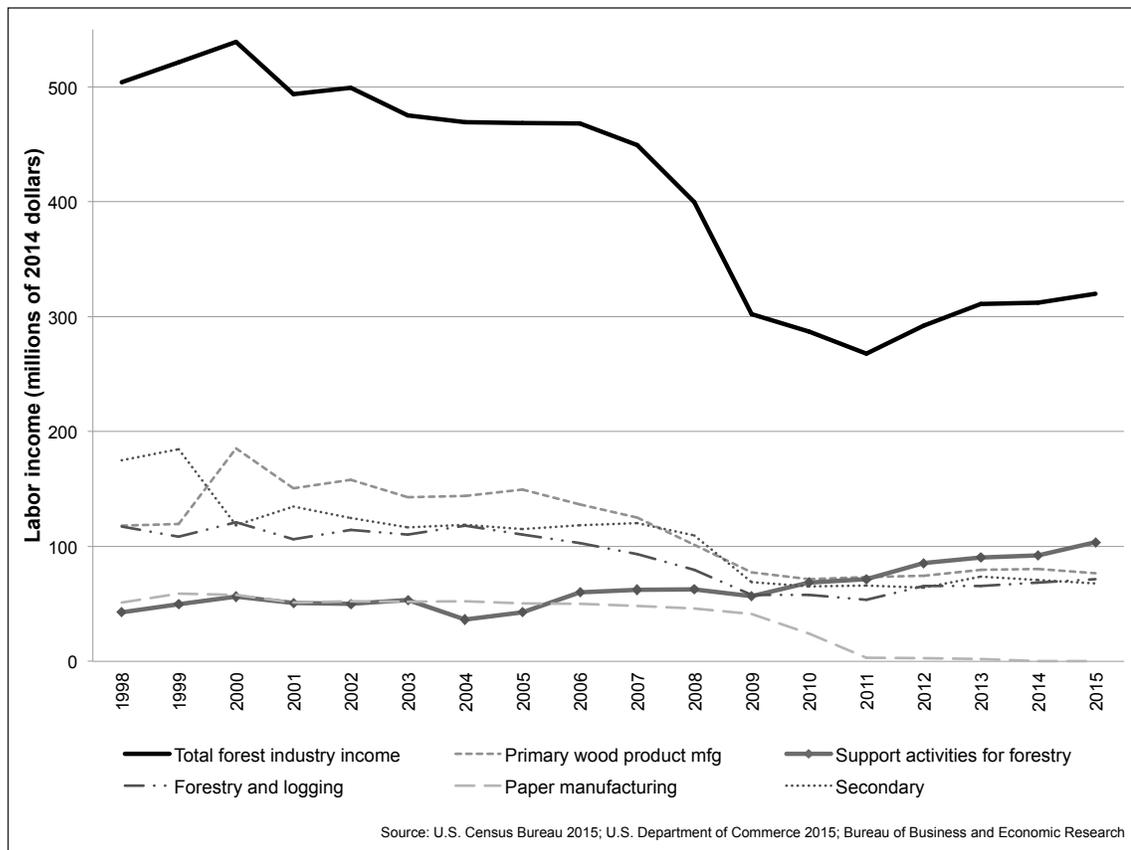


Figure 3—Inflation-adjusted earnings in Montana's forest products industry, 1998-2015.



reclassification of these businesses from forestry and logging to support activities for forestry. Finally, investments in non-commercial forest management activities likely increased in western States, including Montana, during this time due to extensive mortality in the wake of the mountain pine beetle epidemic.

Economic Contribution of Montana's Wood Products Manufacturers to State Economy

Economic contribution analyses measure gross changes in economic activity that can be associated with an industry, event, or policy on an existing regional economy (Watson et al. 2007). For this report, we assess the contribution of Montana's forest industry as dollars spent on intermediate inputs, taxes, labor, and, in turn, by households, generating economic opportunities as additional spending cycles through the State's economy.

Primary and secondary wood products manufacturers, forestry, logging, and forestry support firms directly contribute approximately 7,529 jobs and \$313 million dollars in labor income to the State. The activity associated with this direct employment generates additional economic opportunities by relying upon other industries for raw and intermediate inputs and services, thus indirectly bolstering employment and wages in additional sectors. Using regional data and existing linkages within Montana's economy represented by the Bureau of Economic Analysis' (BEA) RIMS II multipliers¹, BBER estimates that the primary wood products manufacturing sector alone

supports nearly 7,000 full- and part-time jobs and an associated \$284 million dollars in labor income (table 2). Thus, for every primary wood products manufacturing job in the State, another 2.53 jobs are supported in related sectors. And for every \$1 dollar paid in labor income by wood products manufacturers another \$2.53 is paid in supporting sectors, including forestry and logging, forestry support, trucking, wholesale trade, and management.

Likewise, BBER estimates that the 1,421 people employed in the forestry and logging sector support an additional 1,496 full- and part-time jobs along with \$141 million dollars in labor income in supporting sectors such as equipment sales and repair. It should be noted that we do not aggregate sectors and avoid providing total employment and labor income for the entire forest industry to avoid double counting since some employment and labor income shows up as both direct contributions to their sector as well as indirect contributions to other sectors.

Related Data Tables and Figures:

- Figure 1—Montana's Primary Wood Products Manufacturers, 2014.
- Table 10—Active Montana primary wood products facilities by county and product during 2014 and other years.
- Table 24—Proportion of finished product sales of Montana's primary wood products sectors, selected years.
- Table 25—Destination and sales value of Montana's primary wood products, 2014.
- Table 26—Proportion of Montana primary wood product sales by market region, selected years.

See also, Part I: Timber Harvest, Products and Flow (RMRS-RB-32-1), Part II: Industry Sectors, Capacity and Outputs (RMRS-RB-32-2) and Part IV: Montana 2014 Data Tables and Figures (RMRS-RB-32-4).

¹ The Bureau of Economic Analysis does not endorse any resulting estimates and/or conclusions about the contribution of a given sector on an area

Table 2—Average annual employment and labor income contributions across sectors of Montana's forest industry, 2014.

Sector	Direct employment	Indirect and induced employment	Total employment contribution	Direct labor income	Indirect and induced labor income	Total labor income contribution
Primary wood products mfg	1,964	4,972	6,936	\$ 80,507	\$ 203,487	\$ 283,994
Secondary wood products and paper mfg	1,332	1,236	2,568	\$ 71,840	\$ 81,972	\$ 153,812
Forestry and logging	1,421	1,496	2,917	\$ 68,550	\$ 72,341	\$ 140,891
Forestry support activities	2,812	1,032	3,844	\$ 92,170	\$ 38,721	\$ 130,891
Total forest industry	7,529	a	a	\$ 313,067	a	a

^a Indirect and induced employment and labor income should not be summed across multiple sectors due to some employment and income showing up as both direct contributions to their sector as well as indirect contributions to other sectors.

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HOW TO CITE THIS PUBLICATION

Marcille, Kate C.; McIver, Chelsea P.; Hayes, Steven W.; Morgan, Todd A.; Witt, Chris. 2020. Montana's forest products industry and timber harvest, 2014: Part III: Sales, employment and economic contribution. Resour. Bull. RMRS-RB-32-3. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 8 p.

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