



**FOREST INDUSTRY
RESEARCH PROGRAM**
UNIVERSITY OF MONTANA

Montana's Forest Products Industry and Timber Harvest, 2022

The University of Montana's Bureau of Business and Economic Research (BBER), in conjunction with the Interior West Forest Inventory and Analysis (IW-FIA) Program of the US Forest Service, conducted a census of Montana's timber processors operating during the 2022 calendar year. Through a written questionnaire, phone, email, or in-person interview, timber-processing and residue-utilizing facilities provided information about their 2022 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, uses, and sales of manufacturing residue

This research traces the flow of Montana's 2022 timber harvest through the primary wood products industry and characterizes the structure, condition, and economic contributions of Montana's forest products industry sectors. Historical changes in the forest products industry, as well as trends in timber harvest, milling capacity and production, mill residuals, and sales value of products and residues are presented. Employment and worker earnings in the state's primary and secondary forest products industries are also discussed. Periodic survey data collected from the forest products industry provides detailed information on Montana's timber sources, wood utilization and the economic contributions of the industry to the state economy through time. A comprehensive report is currently being prepared that will include selected tables along with historical information and current industry trends. This is the eleventh analysis conducted by BBER for Montana. Other reports on Montana's forest products industry can be found at: https://www.bber.umt.edu/FIR/S_MT.asp

As we continue to finalize the reports, we would like to provide this "core" information to our data users and other interested individuals. We encourage you to contact us if you have any additional questions about the data. However, firm-level data is confidential and will not be released.

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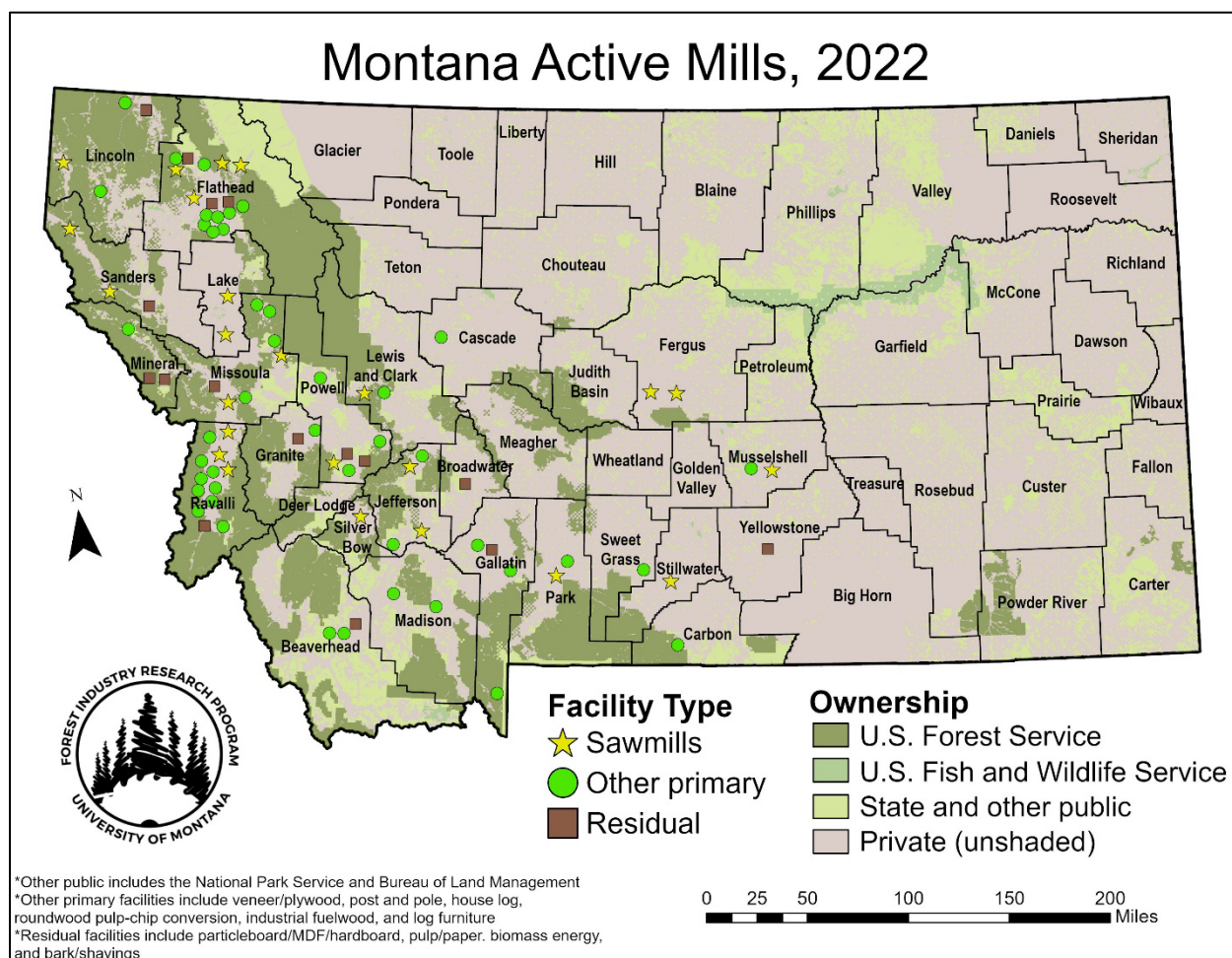


Figure 1 - Map of active Montana primary processing facilities by type.



Montana 2022 Wood Products Industry Highlights

- The Montana census identified 84 primary wood products facilities operating during 2022; nine less than the 2018 census. The wood product facilities consisted of:
 - 24 sawmills,
 - 1 plywood plant,
 - 24 house log manufactures,
 - 2 pulp and composite product manufactures,
 - 11 post and pole plants
 - 4 log furniture manufacturers,
 - And 18 bark product, fuel pellet, pulp-chip conversion, and energy plants.
- Montana's timber harvest during 2022 was 322 million board feet (MMBF) Scribner.
- National Forest timberland continued to lead the timber harvest with a total of almost 148 MMBF Scribner (46 percent of total harvest).
- Public timberlands made up 67 percent of total timber harvest while private timberlands made the remaining 33 percent.
- Northwest Montana (Flathead, Lake, Lincoln, and Sanders County) accounted for 54 percent of Montana's timber harvest for a total of 175 MMBF Scribner.
- Montana had a net outflow of 30 MMBF Scribner of all timber products.
- Montana facility's primary wood product sales (finished products and mill residues) were \$687.8 million. Of those sales the largest percentage were within the Far west states at 25 percent, while 16 percent were within Montana.
- Sawtimber-processing capacity for Montana during 2022 was 354 MMBF Scribner and utilized 66 percent.
- Montana had a total of 8,346 private sector workers directly employed in the forest industry in 2022. Secondary wood product and paper manufacturers accounted for 1,404 (17 percent) workers. Direct income of Montana's forest industry employees was \$424.6 million.



Table 1—Montana nonreserved timberland by ownership class, 2022
(Source: USDA FS 2023).

| Ownership class | Thousand acres | Percentage of nonreserved timberland |
|-------------------------------------|----------------|--------------------------------------|
| National Forest | 11,916 | 59.7 |
| Non-industrial private ^a | 6,223 | 31.2 |
| State | 957 | 4.8 |
| Bureau of Land Management | 837 | 4.2 |
| Industrial | 12 | 0.1 |
| Other public | 10 | 0.1 |
| All owners | 19,955 | 100 |

^aNon-industrial private includes tribal

Table 2a—Montana timber harvest by ownership class, selected years, thousand board feet, Scribner. (Sources: McIver and others 2013; Hayes and others 2020a, 2021).

| Ownership class | 2009 | 2014 | 2018 | 2022 |
|--|----------------|----------------|----------------|----------------|
| Public | 162,329 | 145,998 | 214,231 | 215,000 |
| National Forest | 93,580 | 83,148 | 144,405 | 147,807 |
| State | 63,093 | 57,893 | 58,389 | 61,591 |
| Other public ^a | 5,656 | 4,957 | 11,437 | 5,602 |
| Private | 211,210 | 265,597 | 162,024 | 107,105 |
| Industrial | 115,590 | 94,943 | 39,990 | 37,402 |
| Non-industrial private and Tribal ^b | 95,619 | 170,654 | 122,034 | 69,704 |
| All owners | 373,538 | 411,595 | 376,255 | 322,105 |

Table 2b—Montana timber harvest by ownership class, selected years, percentage of harvest. (Sources: McIver and others 2013; Hayes and others 2020a, 2021).

| Ownership class | 2009 | 2014 | 2018 | 2022 |
|--|-------------|-------------|-------------|-------------|
| Public | 43.5 | 35.5 | 56.9 | 66.7 |
| National Forest | 25.1 | 20.2 | 38.4 | 45.9 |
| State | 16.9 | 14.1 | 15.5 | 19.1 |
| Other public ^a | 1.5 | 1.2 | 3.0 | 1.7 |
| Private | 56.5 | 64.5 | 43.1 | 33.3 |
| Industrial | 30.9 | 23.1 | 10.6 | 11.6 |
| Non-industrial private and tribal ^b | 25.6 | 41.5 | 32.4 | 21.6 |
| All owners | 100 | 100 | 100 | 100 |

^aOther public includes Bureau of Land Management.

^bNon-industrial private and Tribal combined to prevent disclosure.



Table 3—Proportion of Montana timber harvest by species, selected years, percentage of total harvest. (Sources: McIver and others. 2013; Hayes and others 2020a, 2021).

| Species | 2009 | 2014 | 2018 | 2022 |
|--------------------------------|------------|------------|------------|------------|
| Douglas-fir | 31 | 41 | 42 | 43 |
| Lodgepole pine | 35 | 21 | 17 | 20 |
| Ponderosa pine | 15 | 16 | 11 | 12 |
| Western larch | 7 | 7 | 12 | 9 |
| Spruces | 8 | 8 | 8 | 6 |
| True firs | b | b | b | 5 |
| Other species ^a | 4 | 7 | 10 | 5 |
| All species^b | 100 | 100 | 100 | 100 |

^aOther species include: western white pine, western redcedar, western hemlock, Rocky Mountain juniper, aspen and cottonwood, and other softwoods.

Table 4—Proportion of Montana timber harvest by product, selected years, percentage of total harvest. (Sources: McIver and others 2013; Hayes and others 2020a, 2021).

| Product | 2009 | 2014 | 2018 | 2022 |
|------------------------------------|------------|------------|------------|------------|
| Sawlogs | 73 | 89 | 93 | 87 |
| Veneer logs | a | a | a | a |
| Other timber products ^b | 27 | 11 | 7 | 13 |
| All products | 100 | 100 | 100 | 100 |

^aSawlogs includes veneer logs to prevent disclosure.

^bOther timber products include logs used for pulpwood, posts and poles, house logs, cedar products, log furniture, biomass energy and industrial fuelwood.



Table 5—Montana timber harvest by county, selected years, million board feet, Scribner. (Sources: McIver and others 2013; Hayes and others 2020a, 2021).

| County | Million Board Feet Scribner | | | | Percent of total 2022 |
|---------------------------------|-----------------------------|------------|------------|------------|-----------------------|
| | 2009 | 2014 | 2018 | 2022 | |
| Northwest Montana | 171 | 222 | 217 | 175 | 54.5 |
| Flathead | 79 | 91 | 64 | 63 | 19.6 |
| Lake | 23 | 31 | 17 | 29 | 9.1 |
| Lincoln | 43 | 60 | 80 | 59 | 18.3 |
| Sanders | 26 | 40 | 56 | 24 | 7.5 |
| Western Montana | 79 | 70 | 66 | 51 | 15.9 |
| Granite | 6 | 7 | 14 | 3 | 0.9 |
| Mineral | 13 | 16 | 7 | 13 | 4.2 |
| Missoula | 56 | 43 | 31 | 21 | 6.6 |
| Ravalli | 4 | 4 | 14 | 14 | 4.2 |
| West-Central Montana | 70 | 66 | 59 | 46 | 14.4 |
| Broadwater | 8 | 1 | a | 3 | 4.1 |
| Cascade | 1 | 2 | a | — | — |
| Jefferson | 6 | 5 | 4 | 12 | 3.8 |
| Judith Basin | a | — | 1 | — | — |
| Lewis & Clark | 24 | 31 | 11 | 11 | 3.4 |
| Meagher | 3 | 11 | 18 | 4 | 1.3 |
| Powell | 27 | 14 | 25 | 16 | 5.1 |
| Wheatland | 1 | 2 | — | a | 0.0 |
| Southwest Montana | 32 | 28 | 24 | 33 | 10.1 |
| Beaverhead | 11 | 5 | 8 | 13 | 4.1 |
| Deer Lodge | 7 | 2 | a | a | 0.1 |
| Gallatin | 2 | 8 | 7 | 16 | 4.9 |
| Madison | 3 | 9 | 5 | a | 0.0 |
| Park | 6 | 4 | 2 | 3 | 1.1 |
| Silver Bow | 3 | 1 | 1 | a | 0.0 |
| Eastern Montana | 20 | 18 | 10 | 18 | 5.6 |
| Big Horn | 3 | 1 | a | — | — |
| Carbon | b | b | b | 1 | 0.4 |
| Carter | b | b | b | 1 | 0.2 |
| Chouteau | b | b | b | a | 0.0 |
| Fergus | 3 | 3 | 6 | 2 | 0.8 |
| Golden Valley | b | b | b | a | 0.1 |
| McCone | b | b | b | a | 0.0 |
| Musselshell | 1 | 2 | a | 1 | 0.2 |
| Petroleum | b | b | b | 1 | 0.4 |
| Powder River | — | 1 | a | 1 | 0.3 |
| Rosebud | — | 1 | — | 6 | 1.9 |
| Sweet Grass | b | b | b | 2 | 0.7 |
| Yellowstone | b | b | b | a | 0.1 |
| Other counties | 14 | 11 | 2 | — | — |
| Unspecified | 1 | 7 | — | — | — |
| All counties^b | 373 | 412 | 376 | 322 | 100 |

^aTimber harvest reported volume reported less than 0.5 MMBF

^bIncluded in other counties or unspecified

— Indicates 0



Table 6a—Montana timber harvest by ownership class and species, 2022, thousand board feet, Scribner.

| Ownership class | Douglas-fir | Lodgepole pine | Ponderosa pine | Western larch | Engelmann spruce | True firs | Other species ^a | All species |
|--------------------------------|----------------|----------------|----------------|---------------|------------------|---------------|----------------------------|----------------|
| Public | 91,402 | 48,621 | 22,532 | 18,526 | 12,537 | 12,552 | 8,829 | 215,000 |
| National Forest | 60,898 | 35,780 | 15,019 | 12,353 | 9,665 | 9,484 | 4,607 | 147,807 |
| State | 28,318 | 11,472 | 5,791 | 6,079 | 2,735 | 2,987 | 4,210 | 61,591 |
| Other public ^b | 2,186 | 1,370 | 1,722 | 93 | 137 | 82 | 12 | 5,602 |
| Private | 46,915 | 16,241 | 15,101 | 11,737 | 5,464 | 4,801 | 6,847 | 107,105 |
| Industrial | 18,607 | 4,524 | 469 | 6,408 | 1,812 | 1,907 | 3,674 | 37,402 |
| Non-industrial private and tri | 28,307 | 11,717 | 14,632 | 5,329 | 3,652 | 2,893 | 3,173 | 69,704 |
| All owners | 138,317 | 64,863 | 37,632 | 30,263 | 18,002 | 17,353 | 15,677 | 322,105 |

Table 6b—Montana timber harvest by ownership class and species, 2022, percentage of harvest.

| Ownership class | Douglas-fir | Lodgepole pine | Ponderosa pine | Western larch | Engelmann spruce | True firs | Other species ^a | All species |
|--------------------------------|-------------|----------------|----------------|---------------|------------------|------------|----------------------------|-------------|
| Public | 28.4 | 15.1 | 7.0 | 5.8 | 3.9 | 3.9 | 2.7 | 66.7 |
| National Forest | 18.9 | 11.1 | 4.7 | 3.8 | 3.0 | 2.9 | 1.4 | 45.9 |
| State | 8.8 | 3.6 | 1.8 | 1.9 | 0.8 | 0.9 | 1.3 | 19.1 |
| Other public ^b | 0.7 | 0.4 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 1.7 |
| Private | 14.6 | 5.0 | 4.7 | 3.6 | 1.7 | 1.5 | 2.1 | 33.3 |
| Industrial | 5.8 | 1.4 | 0.1 | 2.0 | 0.6 | 0.6 | 1.1 | 11.6 |
| Non-industrial private and tri | 8.8 | 3.6 | 4.5 | 1.7 | 1.1 | 0.9 | 1.0 | 21.6 |
| All owners^d | 42.9 | 20.1 | 11.7 | 9.4 | 5.6 | 5.4 | 4.9 | 100 |

^aOther species include: western white pine, western redcedar, western hemlock, Rocky Mountain juniper, aspen and cottonwood, and other softwoods.^bOther public includes Bureau of Land Management.^cNon-industrial private and tribal combined to prevent disclosure.**Table 7a**—Montana timber harvest by ownership class and product, 2022, thousand board feet, Scribner.

| Ownership class | Saw and veneer logs | Other products ^a | House logs | All products |
|--|---------------------|-----------------------------|--------------|----------------|
| Public | 181,117 | 31,167 | 2,716 | 215,000 |
| National Forest | 123,683 | 21,533 | 2,591 | 147,807 |
| State | 53,650 | 7,816 | 125 | 61,591 |
| Other public ^b | 3,785 | 1,817 | — | 5,602 |
| Private | 97,678 | 9,087 | 340 | 107,105 |
| Industrial | 33,651 | 3,740 | 10 | 37,402 |
| Non-industrial private and tribal ^c | 64,027 | 5,347 | 330 | 69,704 |
| All owners | 278,795 | 40,254 | 3,056 | 322,105 |

Table 7b—Montana timber harvest by ownership class and product, 2022, percentage of harvest.

| Ownership class | Saw and veneer logs | Other products ^a | House logs | All products |
|--|---------------------|-----------------------------|------------|--------------|
| Public | 56 | 10 | 1 | 67 |
| National Forest | 38 | 7 | 1 | 46 |
| State | 17 | 2 | 0 | 19 |
| Other public ^b | 1 | 1 | — | 2 |
| Private | 30 | 3 | 0 | 33 |
| Industrial | 10 | 1 | 0 | 12 |
| Non-industrial private and tribal ^c | 20 | 2 | 0 | 22 |
| All owners | 86.6 | 12.5 | 0.9 | 100 |

^aOther timber products include logs used for pulpwood, posts and poles, house logs, cedar products, log furniture, biomass energy and industrial fuelwood.^bOther public includes Bureau of Land Management.^cNon-industrial private and Tribal combined to prevent disclosure.

Table 8a—Montana timber harvest by species and product, 2022, thousand board feet, Scribner.

| Species | Saw and veneer logs | Other products^a | House logs | All products |
|----------------------------|----------------------------|-----------------------------------|-------------------|---------------------|
| Douglas-fir | 129,017 | 8,293 | 1,007 | 138,317 |
| Lodgepole pine | 49,157 | 14,550 | 1,155 | 64,863 |
| Ponderosa pine | 32,249 | 5,177 | 207 | 37,632 |
| Western larch | 25,959 | 3,977 | 327 | 30,263 |
| Engelmann spruce | 16,420 | 1,261 | 321 | 18,002 |
| True firs | 14,162 | 3,168 | 22 | 17,353 |
| Other species ^b | 11,831 | 3,828 | 17 | 15,677 |
| All species | 278,795 | 40,254 | 3,056 | 322,105 |

Table 8b—Montana timber harvest by species and product, 2022, percentage of total harvest

| Species | Saw and veneer logs | Other products^a | House logs | All products |
|----------------------------|----------------------------|-----------------------------------|-------------------|---------------------|
| Douglas-fir | 40.1 | 2.6 | 0.3 | 42.9 |
| Lodgepole pine | 15.3 | 4.5 | 0.4 | 20.1 |
| Ponderosa pine | 10.0 | 1.6 | 0.1 | 11.7 |
| Western larch | 8.1 | 1.2 | 0.1 | 9.4 |
| Engelmann spruce | 5.1 | 0.4 | 0.1 | 5.6 |
| True firs | 4.4 | 1.0 | 0.0 | 5.4 |
| Other species ^b | 3.7 | 1.2 | 0.0 | 4.9 |
| All species | 86.6 | 12.5 | 0.9 | 100 |

^aOther timber products include logs used for pulpwood, posts and poles, house logs, cedar products, log furniture, biomass energy and industrial fuelwood.

^bOther species include: western white pine, western redcedar, western hemlock, Rocky Mountain juniper, cottonwood and aspen, and other softwoods.

Table 9—Timber flow into and out of Montana, 2022, thousand board feet, Scribner.

| Timber products | Log flow into Montana | Log flow out of Montana | Net inflow (net outflow) |
|-----------------------------|------------------------------|--------------------------------|---------------------------------|
| Saw and veneer logs | 13,191 | 39,233 | (26,042) |
| Other products ^a | 2,583 | 7,086 | (4,503) |
| All products | 15,775 | 46,319 | (30,544) |

^aOther timber products include logs used for pulpwood, posts and poles, house logs, cedar products, log furniture, biomass energy and industrial fuelwood.



Table 10—Active Montana primary wood products facilities by county and product during 2022 and other years. (Sources: McIver and others 2013; Hayes and others 2020a, 2021).

| County | Lumber | Plywood | Pulp and composite products | Post and poles | Log homes | Log furniture | Other products ^a | All products |
|-----------------------------|-----------|----------|-----------------------------|----------------|-----------|---------------|-----------------------------|--------------|
| Northwest Montana | 9 | 1 | 1 | 1 | 4 | 3 | 6 | 25 |
| Flathead | 4 | 1 | 1 | 1 | 3 | 2 | 4 | 16 |
| Lake | 2 | — | — | — | — | — | — | 2 |
| Lincoln | 1 | — | — | — | 1 | 1 | 1 | 4 |
| Sanders | 2 | — | — | — | — | — | 1 | 3 |
| Western Montana | 5 | 0 | 1 | 4 | 9 | 1 | 5 | 25 |
| Granite | — | — | — | 1 | — | — | 1 | 2 |
| Mineral | — | — | — | 1 | — | — | 2 | 3 |
| Missoula | 2 | — | 1 | 1 | 2 | — | 1 | 7 |
| Ravalli | 3 | — | — | 1 | 7 | 1 | 1 | 13 |
| West-Central Montana | 4 | 0 | 0 | 3 | 4 | 0 | 3 | 14 |
| Broadwater | — | — | — | — | — | — | 1 | 1 |
| Cascade | — | — | — | — | 1 | — | — | 1 |
| Jefferson | 2 | — | — | 1 | 1 | — | — | 4 |
| Lewis & Clark | 1 | — | — | 1 | — | — | — | 2 |
| Powell | 1 | — | — | 1 | 2 | — | 2 | 6 |
| Southwest Montana | 2 | 0 | 0 | 2 | 5 | 0 | 3 | 12 |
| Beaverhead | — | — | — | 1 | 1 | — | 1 | 3 |
| Deerlodge | — | — | — | — | — | — | — | — |
| Gallatin | — | — | — | — | 2 | — | 2 | 4 |
| Madison | — | — | — | — | 2 | — | — | 2 |
| Park | 1 | — | — | 1 | — | — | — | 2 |
| Silver Bow | 1 | — | — | — | — | — | — | 1 |
| Eastern Montana | 4 | 0 | 0 | 1 | 2 | 0 | 1 | 8 |
| Carbon | — | — | — | — | 1 | — | — | 1 |
| Custer | — | — | — | — | — | — | — | — |
| Fergus | 2 | — | — | — | — | — | — | 2 |
| Musselshell | 1 | — | — | 1 | — | — | — | 2 |
| Stillwater | 1 | — | — | — | — | — | — | 1 |
| Sweet Grass | — | — | — | — | 1 | — | — | 1 |
| Yellowstone | — | — | — | — | — | — | 1 | 1 |
| 2022 Total | 24 | 1 | 2 | 11 | 24 | 4 | 18 | 84 |
| 2018 Total | 25 | 1 | 2 | 10 | 27 | 5 | 23 | 93 |
| 2014 Total | 32 | 2 | 2 | 12 | 25 | 5 | 24 | 102 |
| 2009 Total | 41 | 2 | 3 | 14 | 33 | 14 | 20 | 127 |

^aOther products include logs used for biomass energy, fuel pellets, bark products and industrial fuelwood.

— Indicates 0.



Table 11—Proportion of timber received by Montana facilities by ownership class, selected years, thousand board feet, Scribner.
(Sources: McIver and others 2013; Hayes and others 2020a, 2021).

| Ownership class | 2009 | 2014 | 2018 | 2022 |
|--|------------|------------|------------|------------|
| Public | 45 | 40 | 61 | 69 |
| National Forest | 24 | 23 | 41 | 47 |
| State | 16 | 15 | 16 | 19 |
| Other public ^a | 5 | 2 | 4 | 3 |
| Private | 55 | 60 | 39 | 31 |
| Industrial | 31 | 20 | 6 | 10 |
| Non-industrial private and Tribal ^b | 24 | 40 | 32 | 21 |
| All owners | 100 | 100 | 100 | 100 |

^aIncludes timber received from Bureau of Land Management, and unspecified out-of-state and Canadian sources.

^bNon-industrial private and Tribal combined to prevent disclosure.

Table 12—Timber received by Montana facilities by ownership class and product, 2022, thousand board feet, Scribner.

| Ownership class | Saw and veneer logs | Other products ^a | House logs | All products |
|--|---------------------|-----------------------------|--------------|----------------|
| Public | 170,390 | 26,220 | 4,646 | 201,256 |
| National Forest | 115,053 | 18,837 | 2,901 | 136,791 |
| State | 49,576 | 5,566 | 125 | 55,267 |
| Other public ^b | 5,762 | 1,817 | 1,620 | 9,199 |
| Private | 82,363 | 7,044 | 840 | 90,248 |
| Industrial | 26,256 | 2,255 | 450 | 28,961 |
| Non-industrial private and tribal ^c | 56,108 | 4,789 | 390 | 61,287 |
| All owners | 252,754 | 33,264 | 5,486 | 291,504 |

^aOther timber products include logs used for pulpwood, posts and poles, log furniture, biomass energy and industrial fuelwood.

^bIncludes timber received from Bureau of Land Management, and unspecified out-of-state and Canadian sources.

^cNon-industrial private and tribal combined to prevent disclosure.



Table 13—Proportion of timber received by Montana facilities by product, selected years, percentage of timber received, thousand board feet, Scribner. (Sources: Keegan 1980; Keegan et al. 1983, 1990, 1995, 2001; Spoelma et al. 2008; McIver et al. 2013; Hayes et al. 2020a, 2021).

| Product | 1981 | 1988 | 1993 | 1998 | 2004 | 2009 | 2014 | 2018 | 2022 |
|------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Saw and veneer logs | 92 | 97 | 95 | 94 | 89 | 72 | 88 | 92 | 87 |
| Other timber products ^a | 8 | 3 | 5 | 6 | 11 | 28 | 12 | 8 | 13 |
| All products | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

^aOther products include logs used for pulpwood, posts and poles, log furniture, industrial fuelwood, and house logs.

Table 14a—Timber received by Montana facilities by species and product, 2022, thousand board feet, Scribner.

| Species | Saw and veneer logs | Other products ^a | House logs | All products |
|----------------------------|---------------------|-----------------------------|--------------|----------------|
| Douglas-fir | 126,203 | 8,313 | 1,464 | 135,980 |
| Lodgepole pine | 49,520 | 14,523 | 2,197 | 66,240 |
| Ponderosa pine | 23,520 | 4,372 | 207 | 28,099 |
| Western larch | 22,562 | 2,841 | 466 | 25,870 |
| Englemann spruce | 16,826 | 1,266 | 785 | 18,877 |
| True firs | 10,020 | 1,871 | 22 | 11,913 |
| Other species ^b | 4,102 | 78 | 344 | 4,525 |
| All species | 252,754 | 33,264 | 5,486 | 291,504 |

Table 14b—Timber received by Montana facilities by species and product, 2022, percentage of timber received.

| Species | Saw and veneer logs | Other products ^a | House logs | All products |
|----------------------------|---------------------|-----------------------------|------------|--------------|
| Douglas-fir | 43.3 | 2.9 | 0.5 | 46.6 |
| Lodgepole pine | 17.0 | 5.0 | 0.8 | 22.7 |
| Ponderosa pine | 8.1 | 1.5 | 0.1 | 9.6 |
| Western larch | 7.7 | 1.0 | 0.2 | 8.9 |
| Englemann spruce | 5.8 | 0.4 | 0.3 | 6.5 |
| True firs | 3.4 | 0.6 | 0.0 | 4.1 |
| Other species ^b | 1.4 | 0.0 | 0.1 | 1.6 |
| All species | 86.7 | 11.4 | 1.9 | 100 |

^aOther products include logs used for pulpwood, posts and poles, log furniture, and industrial fuelwood.

^bOther species include: western white pine, western redcedar, western hemlock, Rocky Mountain juniper, cottonwood and poplar, and other softwoods.



Table 15a—Timber received by Montana facilities by ownership class and species, 2022, thousand board feet, Scribner.

| Ownership class | Douglas-fir | Lodgepole pine | Ponderosa pine | Western larch | Englemann spruce | True firs | Other species ^a | All species |
|--|----------------|----------------|----------------|---------------|------------------|---------------|----------------------------|----------------|
| Public | 90,351 | 49,970 | 19,103 | 16,485 | 13,583 | 8,207 | 3,557 | 201,256 |
| National Forest | 59,276 | 35,661 | 12,469 | 10,767 | 9,838 | 6,010 | 2,770 | 136,791 |
| State | 27,589 | 11,570 | 4,911 | 5,525 | 2,877 | 2,115 | 679 | 55,267 |
| Other public ^b | 3,487 | 2,739 | 1,722 | 193 | 868 | 82 | 108 | 9,199 |
| Private | 45,629 | 16,270 | 8,997 | 9,385 | 5,294 | 3,706 | 967 | 90,248 |
| Industrial | 16,246 | 3,745 | 352 | 5,355 | 1,655 | 1,419 | 191 | 28,961 |
| Non-industrial private and tribal ^c | 29,382 | 12,525 | 8,645 | 4,030 | 3,639 | 2,287 | 777 | 61,287 |
| All owners^a | 135,980 | 66,240 | 28,099 | 25,870 | 18,877 | 11,913 | 4,525 | 291,504 |

Table 15b—Timber received by Montana facilities by ownership class and species, 2022, percentage of timber received.

| Ownership class | Douglas-fir | Lodgepole pine | Ponderosa pine | Western larch | Englemann spruce | True firs | Other species ^a | All species |
|--|-------------|----------------|----------------|---------------|------------------|------------|----------------------------|-------------|
| Public | 31.0 | 17.1 | 6.6 | 5.7 | 4.7 | 2.8 | 1.2 | 69.0 |
| National Forest | 20.3 | 12.2 | 4.3 | 3.7 | 3.4 | 2.1 | 1.0 | 46.9 |
| State | 9.5 | 4.0 | 1.7 | 1.9 | 1.0 | 0.7 | 0.2 | 19.0 |
| Other public ^b | 1.2 | 0.9 | 0.6 | 0.1 | 0.3 | 0.0 | 0.0 | 3.2 |
| Private | 15.7 | 5.6 | 3.1 | 3.2 | 1.8 | 1.3 | 0.3 | 31.0 |
| Industrial | 5.6 | 1.3 | 0.1 | 1.8 | 0.6 | 0.5 | 0.1 | 9.9 |
| Non-industrial private and tribal ^c | 10.1 | 4.3 | 3.0 | 1.4 | 1.2 | 0.8 | 0.3 | 21.0 |
| All owners^a | 46.6 | 22.7 | 9.6 | 8.9 | 6.5 | 4.1 | 1.6 | 100 |

^aOther species include: western white pine, western redcedar, western hemlock, Rocky Mountain juniper, cottonwood and aspen, and other softwood species.^bIncludes timber received from Bureau of Land Management, and unspecified out-of-state and Canadian sources.^cNon-industrial and Tribal combined to prevent disclosure.**Table 16**—Montana lumber overrun and lumber recovery factor (LRF), selected years. (Sources: Keegan 1980; Keegan et al. 1983, 1990, 1995, 2001; Spoelma et al. 2008; McIver et al. 2013; Hayes et al. 2020a, 2021).

| Year | processed MMBF ^a | MMBF ^a lumber | Overrun | LRF ^b |
|-------------|-----------------------------|--------------------------|-------------|------------------|
| | Scribner | tally | | |
| 2022 | 191 | 367 | 1.93 | 7.55 |
| 2018 | 245 | 483 | 1.97 | 7.76 |
| 2014 | 337 | 611 | 1.81 | 7.11 |
| 2009 | 237 | 449 | 1.89 | 7.35 |
| 2004 | 521 | 1,040 | 2.00 | 7.26 |
| 1998 | 725 | 1,287 | 1.78 | 7.17 |
| 1993 | 782 | 1,367 | 1.75 | 6.97 |
| 1988 | 985 | 1,558 | 1.58 | 6.79 |
| 1981 | 739 | 1,071 | 1.45 | 6.67 |

^aMMBF = million board feet.^bLRF = board feet of lumber per cubic foot of log input.

Table 17—Number of Montana sawmills by annual lumber production, selected years. (Sources: Setzer and Wilson 1970; Schweitzer et al. 1975; Keegan 1980; Keegan et al. 1983, 1990, 1995, 2001; Spoelma et al. 2008; McIver et al. 2013; Hayes et al. 2020b, 2021.)

| Annual lumber production | | | | |
|---------------------------------|--|---|--|-----------------------|
| Year | <i>Less than 10 MMBF^a</i> | <i>10 MMBF^a to 50 MMBF</i> | <i>More than 50 MMBF^a</i> | Total sawmills |
| 2022 | 18 | 6 | b | 24 |
| 2018 | 17 | 4 | 4 | 25 |
| 2014 | 23 | 3 | 6 | 32 |
| 2009 | 30 | 6 | 5 | 41 |
| 2004 | 43 | 3 | 11 | 57 |
| 1998 | 54 | 8 | 11 | 73 |
| 1993 | 60 | 14 | 12 | 86 |
| 1988 | 58 | 16 | 13 | 87 |
| 1981 | 114 | 23 | 5 | 142 |
| 1976 | 68 | 24 | 6 | 98 |
| 1973 | 86 | 22 | 7 | 115 |
| 1966 | 111 | 37 | b | 148 |
| 1956 | 307 | 26 | b | 333 |

^aMMBF = million board feet, lumber tally.

^bMills with production over 50 MMBF are included in the 10 MMBF to 50 MMBF category.

Table 18a—Percent of Montana lumber production by sawmill size class, selected years, million board feet, lumber tally. (Sources: Setzer and Wilson 1970; Schweitzer et al. 1975; Keegan 1980; Keegan et al. 1983, 1990, 1995, 2001; Spoelma et al. 2008; McIver et al. 2013; Hayes et al. 2020b, 2021.)

| Year | Less than 10 MMBF | More than 10 MMBF |
|-------------|--------------------------|--------------------------|
| 2022 | 5 | 95 |
| 2018 | 3 | 97 |
| 2014 | 2 | 98 |
| 2009 | 2 | 98 |
| 2004 | 3 | 97 |
| 1998 | 2 | 98 |
| 1993 | 4 | 96 |
| 1988 | 4 | 96 |
| 1981 | 8 | 92 |
| 1976 | 4 | 96 |
| 1966 | 10 | 90 |
| 1962 | 13 | 87 |
| 1956 | 33 | 67 |

Table 18b—Proportion of Montana lumber production by sawmill size class, selected years, million board feet, lumber tally.

(Sources: Setzer and Wilson 1970; Schweitzer et al. 1975; Keegan 1980; Keegan et al. 1983, 1990, 1995, 2001; Spoelma et al. 2008; McIver et al. 2013; Hayes et al. 2020b, 2021.)

| Year | Total lumber production | Average production per mill |
|-------------|--------------------------------|------------------------------------|
| 2022 | 367 | 15.3 |
| 2018 | 483 | 19.3 |
| 2014 | 611 | 19.1 |
| 2009 | 449 | 11.0 |
| 2004 | 1,040 | 18.2 |
| 1998 | 1,287 | 17.6 |
| 1993 | 1,367 | 15.9 |
| 1988 | 1,558 | 17.9 |
| 1981 | 1,071 | 7.5 |
| 1976 | 1,176 | 12.0 |
| 1966 | 1,375 | 12.0 |
| 1962 | 1,259 | 8.5 |
| 1956 | 979 | 3.0 |



Table 19—Lumber production by Montana sawmills, 2022, million board feet, lumber tally.

| Lumber production size class | Number of mills | Percentage of production | Lumber production | Average production per mill |
|------------------------------|-----------------|--------------------------|-------------------|-----------------------------|
| More than 10 MMBF | 6 | 95 | 350 | 58.3 |
| 1 to 10 MMBF | 6 | 4 | 13 | 2.2 |
| Less than 1 MMBF | 12 | 1 | 5 | 0.4 |
| Total | 24 | 100 | 367 | 15.3 |

Table 20—Sawtimber total processing capacity and utilization, selected years. (Sources: McIver et al. 2013; Hayes et al. 2020b, 2021).

| Year | Processing capacity MMBF ^a Scribner | Volume processed MMBF lumber tally | Percentage of capacity utilized |
|-------------------|--|------------------------------------|---------------------------------|
| 2022 | 354 | 232 | 66 |
| 2018 | 489 | 289 | 59 |
| 2014 | 635 | 394 | 62 |
| 2009 ^b | 660 | 303 | 46 |

^a Million board feet^b 2009 numbers revised from McIver and others 2013.**Table 21**—Montana sawmill residue factors, BDU/MBF lumber tally^a (Sources: Keegan 1980; Keegan et al. 1983, 1990, 1995, 2001; Spoelma et al. 2008; McIver et al. 2013; Hayes et al. 2020b, 2021).

| Type of residue | 1981 | 1988 | 1993 | 1998 | 2004 | 2009 | 2014 | 2018 | 2022 |
|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Coarse | 0.47 | 0.51 | 0.48 | 0.49 | 0.47 | 0.44 | 0.42 | 0.39 | 0.42 |
| Sawdust | 0.25 | 0.22 | 0.23 | 0.22 | 0.19 | 0.21 | 0.21 | 0.20 | 0.22 |
| Planer Shavings | 0.22 | 0.18 | 0.16 | 0.17 | 0.15 | 0.14 | 0.12 | 0.11 | 0.12 |
| Bark | 0.23 | 0.21 | 0.21 | 0.19 | 0.20 | 0.19 | 0.16 | 0.14 | 0.16 |
| Total | 1.17 | 1.12 | 1.08 | 1.07 | 1.01 | 0.98 | 0.91 | 0.84 | 0.91 |

^aBone-dry unit (BDU = 2,400 lb oven-dry wood) of residue generated for every 1,000 board feet of lumber

Table 22a—Production and disposition of residues from Montana sawmills and plywood facilities, 2022, bone dry units^a

| Residue type | Total utilized | Pulp and composite products | Energy | Mulch or animal bedding | Unspecified use | Unutilized | Total produced |
|---------------------|----------------|-----------------------------|---------------|-------------------------|-----------------|--------------|----------------|
| Coarse | 194,336 | 168,080 | 13,010 | — | 13,246 | 634 | 194,970 |
| Fine | 123,093 | 117,404 | 2,207 | 3,250 | 396 | 164 | 123,421 |
| Sawdust | 80,675 | 76,982 | 902 | 2,395 | 396 | 164 | 80,839 |
| Planer shavings | 42,582 | 40,422 | 1,305 | 855 | — | — | 42,582 |
| Bark | 58,181 | — | 36,867 | 21,314 | — | 1,392 | 59,573 |
| All residues | 375,610 | 285,483 | 52,084 | 24,564 | 13,642 | 2,190 | 377,964 |

Table 22b—Production and disposition of residues from Montana sawmills and plywood plants, 2022, percentage of residue used by type.

| Residue type | Total utilized | Pulp and composite products | Energy | Mulch or animal bedding | Unspecified use | Unutilized | Total produced |
|---------------------|----------------|-----------------------------|-------------|-------------------------|-----------------|------------|----------------|
| Coarse | 99.7 | 86.2 | 6.7 | — | 6.8 | 0.3 | 51.6 |
| Fine | 99.7 | 95.1 | 1.8 | 2.6 | 0.3 | 0.1 | 32.7 |
| Sawdust | 99.8 | 95.2 | 1.1 | 3.0 | 0.5 | 0.2 | 65.5 |
| Planer shavings | 100.0 | 94.9 | 3.1 | 2.0 | — | — | 34.5 |
| Bark | 97.7 | — | 61.9 | 35.8 | — | 2.3 | 15.8 |
| All residues | 99.4 | 75.5 | 13.8 | 6.5 | 3.6 | 0.6 | 100 |

^aBone-dry unit= 2,400 lb oven-dry wood.

— Indicates 0.

Table 23a—Production and disposition of residues from Montana's primary wood products sectors, 2022, bone dry units.

| Sector | Total utilized | Pulp and composite products | Energy | Mulch or animal bedding | Unspecified use | Unutilized | Total produced |
|---|----------------|-----------------------------|---------------|-------------------------|-----------------|--------------|----------------|
| Lumber, plywood and other sawn products | 375,774 | 294,148 | 52,084 | 24,564 | 4,978 | 2,190 | 377,964 |
| Other sectors ^a | 21,639 | 14,900 | 6,244 | 495 | — | 75 | 21,714 |
| Posts and poles | 15,280 | 833 | 6,952 | 5,076 | 2,419 | 1,185 | 16,465 |
| House logs and log homes | 4,489 | 120 | 2,656 | 1,404 | 309 | 358 | 4,847 |
| All sectors | 417,182 | 310,001 | 67,936 | 31,539 | 7,707 | 3,808 | 420,989 |

Table 23b—Production and disposition of residues from Montana's primary wood products sectors, 2022, percentage of residue use production and use by sector.

| Sector | Total utilized | Pulp and composite products | Energy | Mulch or animal bedding | Unspecified use | Unutilized | Total produced |
|---|----------------|-----------------------------|-------------|-------------------------|-----------------|------------|----------------|
| Lumber, plywood and other sawn products | 99.4 | 77.8 | 13.8 | 6.5 | 1.3 | 0.6 | 90 |
| Other sectors ^a | 99.7 | 68.6 | 28.8 | 2.3 | — | 0.3 | 5 |
| Posts and poles | 92.8 | 5.1 | 42.2 | 30.8 | 14.7 | 7.2 | 4 |
| House logs and log homes | 92.6 | 2.5 | 54.8 | 29.0 | 6.4 | 7.4 | 1 |
| All sectors | 99.1 | 73.6 | 16.1 | 7.5 | 1.8 | 0.9 | 100 |

Bone dry unit= 2,400 lb oven-dry wood.

^a Other sectors include firewood, roundwood pulp-chip conversion and log furniture.**Table 24**—Proportion of finished product sales of Montana's primary wood products sectors, selected years, percentage of sales value. (Sources: Keegan 1980; Keegan et al. 1983, 1990, 1995, 2001; Spoelma et al. 2008; McIver et al. 2013; Marcille et al. 2020).

| Sector | 1981 | 1988 | 1993 | 1998 | 2004 | 2009 | 2014 | 2018 | 2022 |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Lumber, plywood, and other sawn products | 58 | 55 | 67 | 60 | 53 | 29 | 57 | 54 | 55 |
| Pulp, particle board, and residue-related products | 38 | 41 | 28 | 30 | 39 | 63 | 36 | 40 | 37 |
| House logs and log homes | 2 | 3 | 5 | 9 | 7 | 4 | 4 | 3 | 3 |
| Other products ^a | 2 | 1 | 1 | 1 | 1 | 4 | 3 | 3 | 5 |
| All products | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

^aOther products include: posts and poles, log furniture, and energy products.

Table 25a—Destination and sales value of Montana's primary wood products, 2022, thousand 2022 dollars.

| Product | North | | | | | | Other countries ^f | Total |
|--|---------|-----------------------|----------------------|----------------------|--------------------|------------------------|------------------------------|---------|
| | Montana | Far West ^c | Central ^a | Rockies ^b | South ^d | Northeast ^e | | |
| Lumber, plywood, and other sawn products | 76,628 | 63,597 | 88,985 | 75,643 | 51,560 | 19,556 | 1,968 | 377,938 |
| Residue-related products ^g | 11,332 | 95,570 | 52,798 | 27,233 | 43,081 | 17,680 | 7,574 | 255,268 |
| House logs and log homes | 7,960 | 4,216 | 1,094 | 4,643 | 1,649 | 1,643 | 1,081 | 22,284 |
| Other finished products ^h | 16,970 | 8,218 | 919 | 5,300 | 317 | 543 | 110 | 32,378 |
| All products and residues | 112,891 | 171,601 | 143,796 | 112,819 | 96,607 | 39,422 | 10,733 | 687,868 |

Table 25b—Destination and sales value of Montana's primary wood products, 2022, percentage of sales.

| Product | North | | | | | | Other countries ^f | Total |
|--|---------|-----------------------|----------------------|----------------------|--------------------|------------------------|------------------------------|-------|
| | Montana | Far West ^c | Central ^a | Rockies ^b | South ^d | Northeast ^e | | |
| Lumber, plywood, and other sawn products | 11 | 9 | 13 | 11 | 7 | 3 | 0 | 55 |
| Residue-related products ^g | 2 | 14 | 8 | 4 | 6 | 3 | 1 | 37 |
| House logs and log homes | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 3 |
| Other finished products ^h | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 5 |
| All products and residues | 16 | 25 | 21 | 16 | 14 | 6 | 2 | 100 |

^aNorth Central includes Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

^bRocky Mountains includes Arizona, Colorado, Idaho, Nevada, New Mexico, Utah, and Wyoming.

^cFar West includes Alaska, California, Hawaii, Oregon, and Washington.

^dSouth includes Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

^eNortheast includes Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, Pennsylvania, Rhode Island, and Vermont.

^fOther countries include Canada, Pacific Rim countries, and other countries.

^gResidue-related products include pulp chips, MDF and particleboard, fuel pellets, and bark products.

^hOther finished products include post and pole, railings, firewood, electricity, and other energy products.

Table 26—Proportion of Montana primary wood product sales by market region, selected years, percentage of sales. (Sources: Keegan 1980; Keegan et al. 1983, 1990, 1995, 2001; Spoelma et

| Market area | 2009 | 2014 | 2018 | 2022 |
|-----------------|------|------|------|------|
| Montana | 12 | 14 | 16 | 16 |
| Far West | 18 | 17 | 15 | 25 |
| North Central | 27 | 31 | 29 | 21 |
| Rocky Mountains | 11 | 14 | 16 | 16 |
| South | 13 | 15 | 15 | 14 |
| Other countries | 10 | 6 | 6 | 2 |
| Northeast | 8 | 4 | 3 | 6 |
| All areas | 100 | 100 | 100 | 100 |



Table 27a—Private-sector employment from Montana's forest products industry, 2022, full and part-time workers.

| Sector | Direct employment | Indirect and Induced Employment | Total Employment Contribution ^a |
|---|-------------------|---------------------------------|--|
| Forestry and Logging | 1,115 | 1,152 | 2,267 |
| Forest Support Activities | 4,043 | 1,010 | 5,053 |
| Wood Product Manufacturing^b | 3,188 | 8,514 | 11,677 |
| <i>Primary Wood Product Manufacturing</i> | 1,784 | 6,192 | 7,977 |
| <i>Secondary Wood Product Manufacturing^c</i> | 1,404 | 1,520 | 2,923 |
| Total Forest Industry | 8,346 | ^a | ^a |

Source: USDC BEA 2022a; USDC BEA 2022b; USDC BEA 2024; USDC CB 2022; USDL BLS

^aIndirect and induced employment and labor income should not be summed for multiple sectors due to some employment and income showing up as both direct contributions to their sector and^bThe sum of primary and secondary wood products manufacturing indirect and induced contributions does not equal total wood products manufacturing. See footnote "a."^cIncluded secondary paper manufacturing.**Table 27b**—Labor income contributions from Montana's forest products industry, 2022, thousand 2022 dollars.

| Sector | Direct Labor Income | Indirect and Induced Labor Income | Total Labor Income Contribution ^a |
|---|---------------------|-----------------------------------|--|
| Forestry and Logging | \$48,976 | \$46,581 | \$95,557 |
| Forest Support Activities | \$171,168 | \$66,430 | \$237,598 |
| Wood Product Manufacturing^b | \$204,478 | \$385,860 | \$588,422 |
| <i>Primary Wood Product Manufacturing</i> | \$118,400 | \$324,950 | \$443,350 |
| <i>Secondary Wood Product Manufacturing^c</i> | \$86,078 | \$102,612 | \$188,690 |
| Total Forest Industry | \$424,622 | ^a | ^a |

Source: USDC BEA 2022a; USDC BEA 2022b; USDC BEA 2024; USDC CB 2022; USDL BLS

^aIndirect and induced employment and labor income should not be summed for multiple sectors due to some employment and income showing up as both direct contributions to their sector and indirect contributions to other sectors.^bThe sum of primary and secondary wood products manufacturing indirect and induced contributions does not equal total wood products manufacturing. See footnote "a."^cIncluded secondary paper manufacturing.

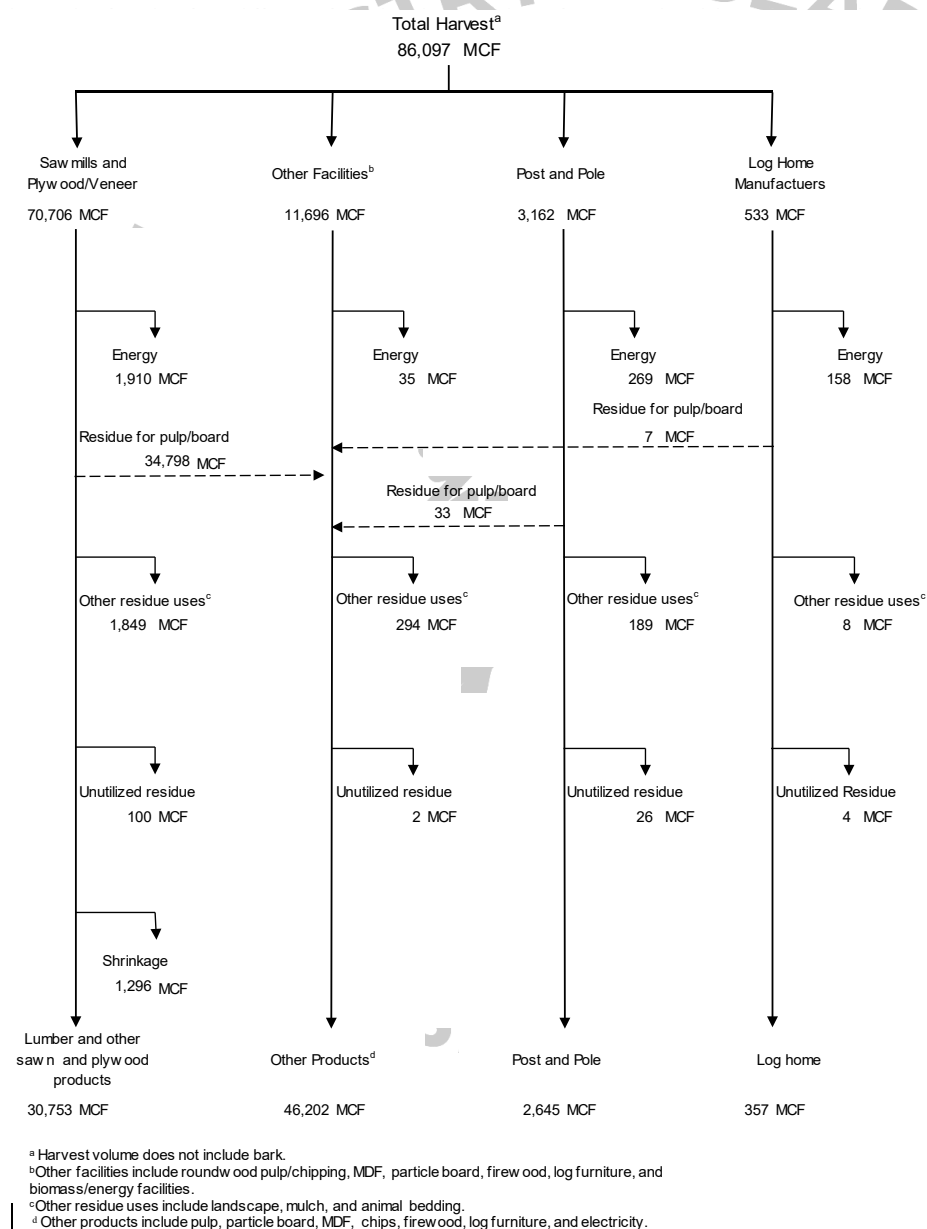


Figure 2 - Montana timber harvest and flow, 2022.



Glossary

Bioenergy wood – Refers to wood used for firewood, fuel for the production of industrial heat and steam, as well as for products like wood pellets, charcoal, or liquid fuels.

Board foot – A unit of measure applied to lumber that is 1-ft long, 1-ft wide and 1-in thick (or its equivalent), and associated with roundwood as to its potential yield of such products.

Bone dry unit (BDU) – The amount of wood residue that weighs 2,400 lbs. (1,088 kg) at 0 percent moisture content. One BDU equals approximately 9.49 yd³ or 96 ft³ of solid wood.

Cubic foot – A unit of true volume that measures 1 ft. by 1 ft. by 1 ft. (30.48 by 30.48 by 30.48 cm).

House log – Roundwood timber used to construct log homes. Products manufactured from house logs can be sawn, scribed by hand, notched, or milled by lathe to meet customer construction needs. House log timber is often dead prior to harvesting.

Kerf – The width of the cut made by a saw blade.

Lumber tally – the volume of sawn products, usually expressed in board feet.

MBF – thousand board feet

MMBF – million board feet

Production capacity – The potential volume of output a facility can produce on a shift or annual basis, assuming firm market demand for products, sufficient supply of raw materials, and ordinary downtime for maintenance.

Recovery – The volume of output from a facility per unit of input, a measure of mill efficiency

Residue – The wood-fiber or bark by-product remaining after timber processing of a primary product like lumber, plywood, posts and poles, house logs, etc. Three types of residues are generally generated:

Coarse – chips, edgings, slabs, trim, and log ends

Fine – sawdust, and planer shavings

Bark.

Sawlog – A log that meets minimum regional standards of diameter, length, and defect; intended for sawing.

Scribner – A diagram log scale rule originating in the 1840s, designed to estimate the net yield of lumber from a log; it assumes 1-in (2.54 cm) boards and .25-in (0.64 cm) in kerf, and is based on diameter at the small end of the log.

Timber-processing capacity – The volume of timber reported in MBF Scribner that could be processed, given sufficient supplies or raw material, and firm market demand for products. Timber-processing capacity is estimated for each facility and gauges the volume of timber that could be used annually if the facility operated at its self-reported production capacity. A facility's timber-processing capacity is calculated by dividing its production capacity by its product recovery.

