



Montana's Forest Products Industry and Timber Harvest, 2014

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Part I: Timber Harvest, Products and Flow

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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 I of this series presents information on the volume of timber harvested in the State in 2014 by product, ownership, species and resource area. It also describes timber flow within the State and across State lines.

This survey effort is the eighth application of its kind in Montana (Keegan 1980; Keegan et al. 1983, 1990, 1995, 2001; McIver et al. 2013; Spoelma et al. 2008) and presents information collected from primary manufacturers in the State that receive timber harvested from Montana and neighboring States. Primary forest product manufacturers are firms that process timber into products such as lumber, plywood, log homes and facilities like particle board plants that use the wood fiber residue directly from timber processors. Through a written questionnaire, phone, or in-person interviews, 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 market trend information, current data collected for facilities of a similar size, product type and location, as well as calculated proportional changes across the industry.

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

Montana's Timber Resource

Montana contains approximately 20 million acres of nonreserved timberland—lands not permanently reserved through statute or administrative designation, such as wilderness areas, national parks and monuments. Over 60 percent (12 million acres) of nonreserved timberland



in Montana is National Forest System (NFS) land managed by the USDA Forest Service (Miles 2016). Similarly, over 75 percent—109,596 million board feet (MMBF)—of sawtimber volume is found on NFS lands (fig. 1). In comparison, NFS lands provided 20 percent (83 MMBF) of the 2014 harvest. The USDA Forest Service’s Forest Inventory and Analysis (FIA) Program provides additional forest inventory information (Menlove et al. 2012), including estimates of annual sawtimber growth (1,344 MMBF) and mortality (2,676 MMBF) on timberland in Montana (Miles 2017).

Montana’s Timber Harvest

Timber harvest in Montana totaled 411.5 MMBF Scribner during 2014. This marked a 10 percent increase compared to the 2009 harvest of 373.5 MMBF (McIver et al. 2013) and a 48 percent decrease from the 2004 harvest of 785 MMBF (Spoelma et al. 2008) (fig. 2). These changes can be explained in part by economic influences affecting wood products markets. The Great Recession and a drop in U.S. home construction between 2007 and 2009 reduced the demand for lumber through 2010 and 2011 (Keegan et al. 2012).

Since 2011, increases in domestic home construction and overseas demand have led to improved markets for wood products. Private lands harvest increased nearly 26 percent from 2009 to 2014, while harvest from NFS lands decreased 11 percent.

Harvest by Product Type and Ownership

Montana’s timber harvest is concentrated in three general timber product categories: saw/veneer logs (timber used to produce lumber, other sawn products and logs used to manufacture plywood), house logs (used to manufacture log homes and other associated goods) and other products (timber chipped for pulpwood, used to produce post and poles, log furniture, and industrial fuelwood).

Saw/veneer logs have consistently been the leading timber product harvested in the State. In 2014 they accounted for 88.6 percent (365 MMBF) of the total timber harvest (table 1). Other products made up 10.9 percent (45 MMBF) and house logs accounted for the remaining 0.5 percent (1.7 MMBF). During 2009, when the pulp mill in Frenchtown was operating, the proportion and volume of other

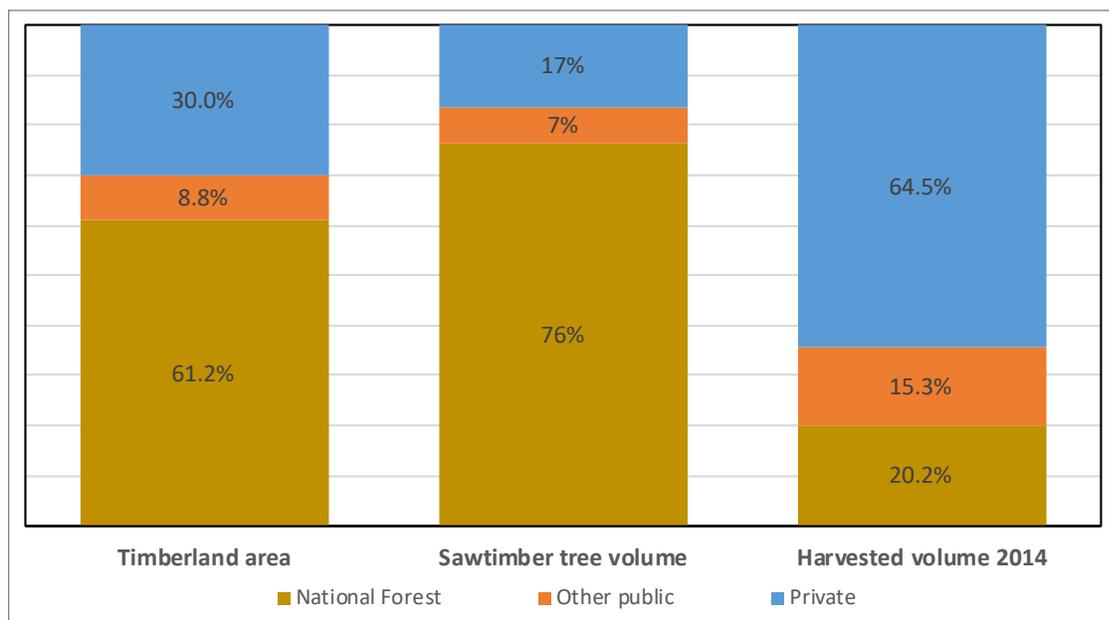


Figure 1—Montana’s timberland and timber harvest by ownership class, 2014.

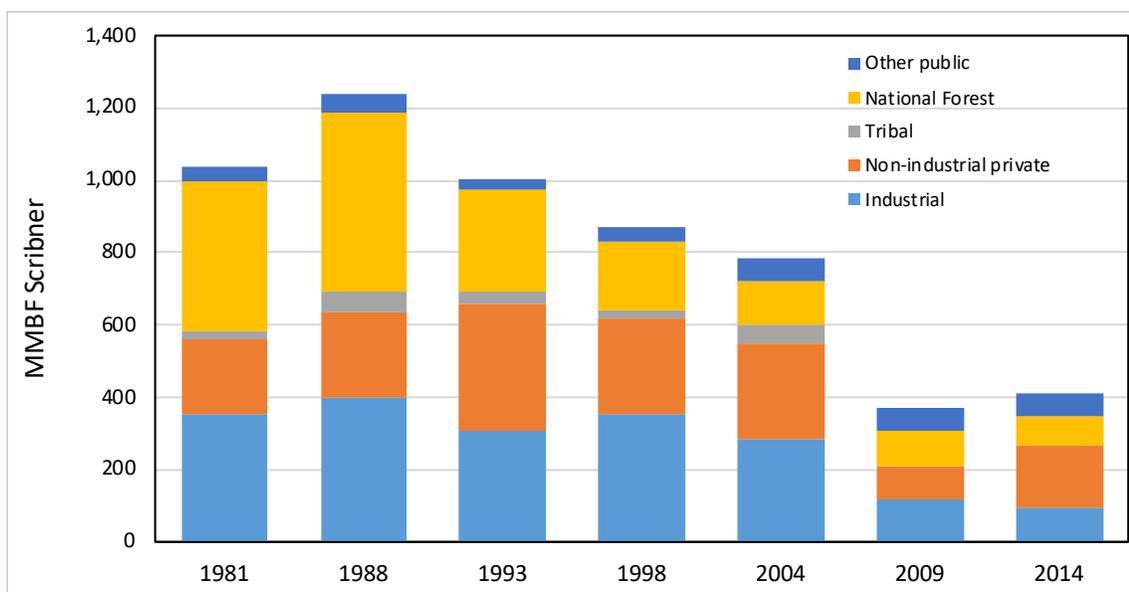


Figure 2—Montana timber harvest by ownership class, selected years (Sources: Keegan et al. 1983, 1990, 1995, 2001; Spoelma et al. 2008; McIver et al. 2013).

Table 1—Montana timber harvest by ownership class and product type, 2014.

Ownership class	Saw and veneer logs	House logs	Other products ^a	All products
----- Thousand board feet, Scribner -----				
Private	243,826	962	20,809	265,597
Industrial and Tribal ^b	90,460	354	4,129	94,943
Non-industrial private	153,366	608	16,680	170,654
Public	121,008	770	24,220	145,998
National Forest	65,008	453	17,687	83,148
Other public ^c	56,000	317	6,533	62,850
All owners	364,834	1,732	45,029	411,595

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

^bIndustrial and Tribal combined to prevent disclosure.

^cOther public includes State and BLM.

products were much higher, accounting for 26.6 percent (about 99 MMBF) of the harvest. House log volume has continued to decline, falling from a peak of 16 MMBF in 1993 to about 12 MMBF in 1998, 7 MMBF in 2004, 2.2 MMBF in 2009, and 1.7 MMBF in 2014.

Private lands provided over 265 MMBF (65 percent) of the 2014 harvest. National forests provided 83 MMBF (20 percent) and the remaining 15 percent came from State (58 MMBF) and other public (4 MMBF) lands.

Approximately 9 percent (36 MMBF) was standing dead trees, down from 20 percent (74 MMBF) in 2009 (McIver et al. 2013). Non-industrial private lands provided the largest share of each of the timber product types except other products, which were led by NFS lands during 2014. Forest Service cut and sold reports indicate that fuelwood and non-sawlog material consistently account for 45 to 55 percent of cut volumes, as the agency has been trying to reduce fire hazard and deal with dead and dying trees during recent years.



Harvest by Geographic Source

The geographic sources of Montana’s timber harvest have been divided into five regions (fig. 3). The Northwest and Eastern regions experienced an increase in harvest, while the other three regions showed declines between 2009 and 2014. The four counties making up the Northwest region provided over half (222 MMBF) of Montana’s 2014 harvest, led by Flathead (91 MMBF) and Lincoln (60 MMBF) Counties, with the highest harvest volumes in the State. In comparison, the 2014 volume harvested from the Northwest region was just 35 percent of what it was in 1981 (Keegan et al. 1983). The West-Central region provided about 65 MMBF (16 percent) of the 2014 harvest; nearly the same as in 2009. The largest proportionate decrease since 2009 occurred in the Western region of Montana. The four counties in the Western region accounted for 70 MMBF (17 percent) of Montana’s 2014 harvest, with Missoula County providing 43 MMBF (10 percent) of the Statewide harvest. The Western region’s harvest volume has also seen a steady decline since 1981, although its proportion of the Statewide harvest has remained relatively stable; around 20 percent. The Eastern and Southwest regions split the remaining 13 percent of the State’s 2014 harvest.

Harvest by Species

At almost 170 MMBF Scribner, Douglas-fir was the leading species harvested in Montana during 2014. Historically, Montana’s timber harvest has been led by Douglas-fir, accounting for 27 to 41 percent annually (table 2). However, in 2009 lodgepole pine accounted for 35 percent, coinciding with an outbreak of mountain pine beetles that caused heavy mortality in the pine species. Between 2009 and 2014 the harvest of ponderosa pine increased from 56.6 MMBF to 64.5 MMBF, while the harvest of lodgepole pine returned to its historic average proportion. The proportions of Engelmann spruce and western larch were unchanged from 2009, although their volumes increased slightly. Other species (i.e., true firs, western red cedar, western white pine, western hemlock, juniper, aspen, cottonwood and other softwoods) increased from 4 percent (14.6 MMBF) to 7 percent (29.7 MMBF) of the total harvest.

End Uses of Montana’s Timber Harvest

Montana’s 2014 timber harvest was about 111.4 million cubic feet (MMCF) of wood fiber, excluding bark. Almost 83 percent (92.1 MMCF) went to sawmills and plywood plants;

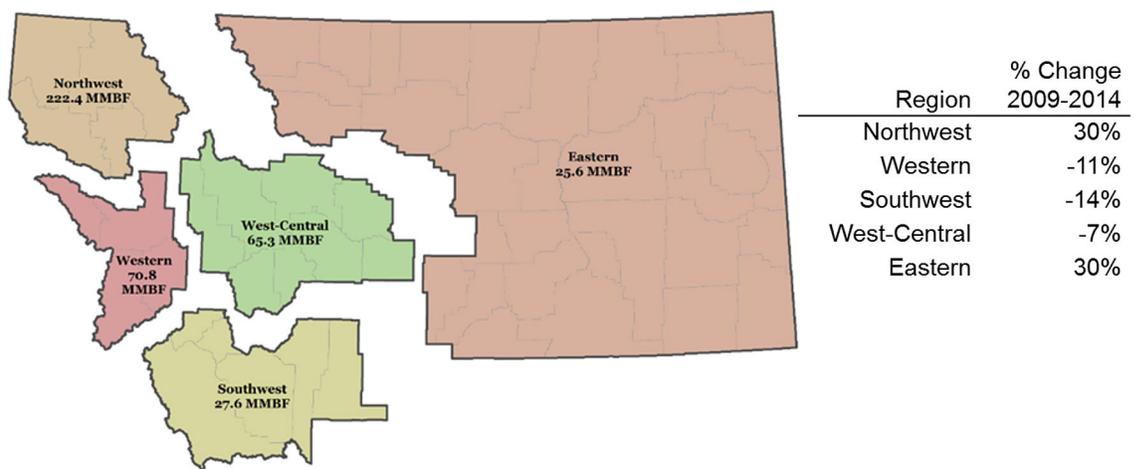


Figure 3—Montana timber harvest changes by resource area, 2009-2014 (Source: McIver et al. 2013).

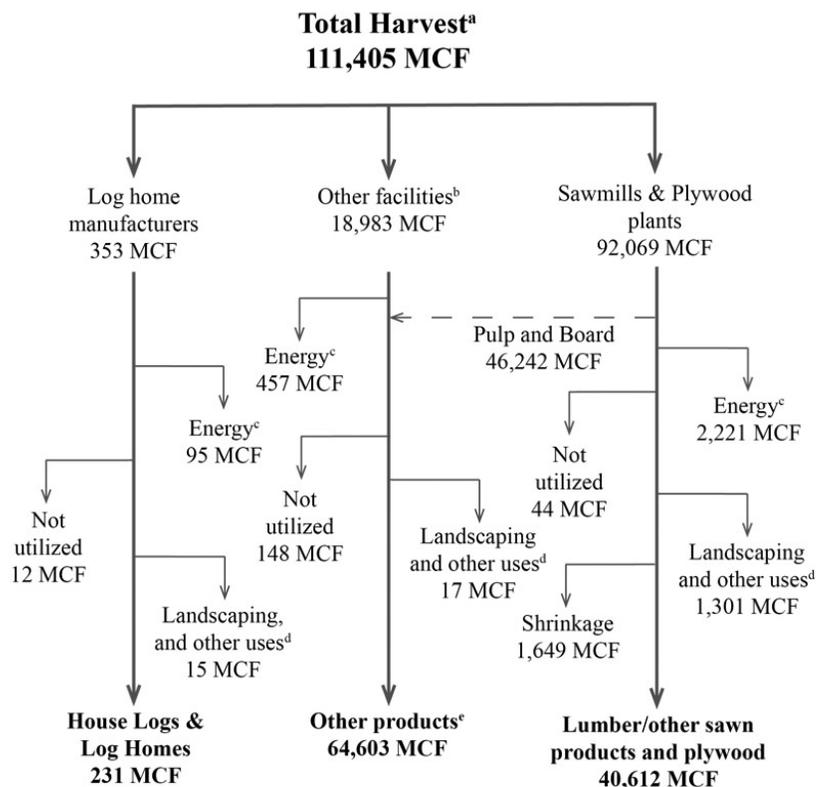
Table 2—Proportion of Montana timber harvest (MBF, Scribner) by species, selected years (sources: Keegan 1980; Keegan and others 1983, 1990, 1995, 2001; McIver and others 2013; Spoelma and others 2008).

Species	1981	1988	1993	1998	2004	2009	2014
----- Percentage of harvest -----							
Douglas-fir	27	27	29	34	38	31	41
Lodgepole pine	25	28	26	25	18	35	21
Ponderosa pine	12	17	19	15	19	15	16
Spruces	8	7	6	8	7	8	8
Western larch	16	14	12	10	12	7	7
Other species ^a	12	7	8	8	6	4	7
All species	100	100	100	100	100	100	100

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

17 percent (19 MMCF) went to other facilities, including post and pole manufacturers, log furniture, chipping, reconstituted board, firewood and other facilities; and the remaining 0.4 percent (0.3 MMCF) went to producers of log homes (fig. 4).

Of the 111.4 MMCF of wood fiber harvested and received by facilities, 62.3 MMCF (56 percent) became residue related products, particle board, medium-density fiberboard or pulp chips. Sawmills and plywood plants produced about 42 MMCF (including



^aHarvest volume does not include bark.

^bOther facilities include post, pole, log furniture, cedar products, firewood and pulp and reconstituted board plants.

^cEnergy products include: fuel pellets, firewood, electricity, heat and steam.

^dLandscaping and other uses includes mulch, animal bedding and miscellaneous uses.

^eOther products include particleboard, medium-density fiberboard, pulp chips, posts, poles, and log furniture.

Figure 4—Montana’s 2014 timber harvest by sector and use.

shrinkage during drying) of lumber and plywood. The 3.5 MMCF (3 percent) of harvested volume going to other facilities was used to produce other finished products, including log homes, posts, poles and log furniture. An additional 3 percent was residue used for energy production, and less than 1 percent (0.02 MMCF) went unused.

Timber Flow

During 2014, the majority (96.6 percent) of Montana’s timber harvest was processed in-state. Montana mills brought in 39.8 MMBF of timber from other States, while 14.7 MMBF of Montana timber was processed out-of-state, giving the State a net inflow of 25 MMBF of timber (table 3). Sawlogs accounted for all of the timber shipped to other States for processing, as well as the majority (36.2 MMBF) of timber brought into the State. Of the 14.7 MMBF processed out-of-state, 94 percent went to Idaho mills and the remaining 6 percent was equally split between Wyoming and South Dakota mills.

Of the nearly 40 MMBF of out-of-state timber processed in Montana, the majority 23.8 MMBF (60 percent) came from Idaho, with an additional 12.1 MMBF (30 percent) from Wyoming. About 10 percent came from Canada, with very small volumes from Oregon, Utah and Washington. In 2009 and 2004, Montana had a net outflow of timber. During periods of net inflow, like 2014, the notion that Montana mills are facing timber supply issues is reinforced, and mills may face longer and more expensive log hauls from neighboring States to supply their timber needs.

The majority of Montana’s mills and timber-processing capacity are found in the Northwest and Western regions. More than 90 percent of the timber harvested in these two regions is processed within these regions. In other regions, harvested timber was generally used in the region of origin or flowed to adjacent regions (fig. 5). Harvest in the West-Central and Eastern regions moved the farthest, resulting in an east-to-west timber flow within Montana. Better markets for lumber in 2014 and lower fuel prices likely allowed timber to travel farther and still be economical.

Table 3—Timber flow into and out of Montana, 2014.

Timber products	Log flow into Montana	Log flow out of Montana	Net inflow (net outflow)
----- Thousand board feet, Scribner -----			
Saw and veneer logs	36,228	14,729	21,499
House logs	2,730	-	2,730
Other products ^a	792	-	792
All products	39,750	14,729	25,021

^aOther products include logs for pulpwood and posts and poles.



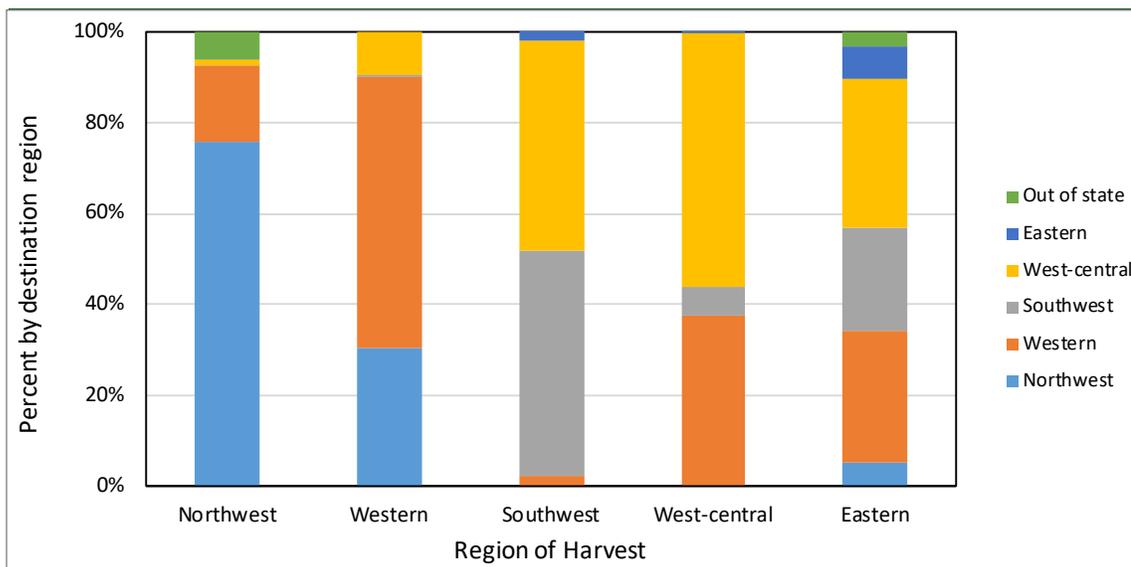


Figure 5—Montana timber harvest source and region of use.

Related Data Tables and Figures (see Part IV):

- Table 1—Montana nonreserved timberland by ownership class
- Table 2—Montana timber harvest by ownership class, selected years
- Table 3—Proportion of Montana timber harvest (MBF, Scribner) by species, selected years
- Table 4—Proportion of Montana timber harvest (MBF, Scribner) by product, selected years
- Table 5—Montana timber harvest (million board feet, Scribner) by county, selected years
- Table 6—Montana timber harvest by ownership class and species, 2014
- Table 7—Montana timber harvest by ownership class and product, 2014
- Table 8—Montana timber harvest by species and product, 2014
- Table 9—Timber flow into and out of Montana, 2014

See also, Part II: Industry Sectors, Capacity and Outputs (RMRS-RB-32-2), Part III: Sales, Employment and Economic Contribution (RMRS-RB-32-3), and Montana 2014 Data Tables and Figures RMRS-RB-32-4).

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