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Wyoming'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 contains findings from a census of Wyoming's primary forest products industry for calendar year 2014. Part I of the series presents information on the volume of timber harvested in the State by ownership, species, product, and resource area. It also describes timber flow within the State and across State lines. This effort is the fifth application of its kind in Wyoming and presents information from primary manufacturers in the State as well as facilities in surrounding States that receive timber harvested from Wyoming. Primary forest product manufacturers are firms that process timber into manufactured products such as lumber, and facilities like wood pellet 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; and
- 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 calculated proportional changes across the industry. Manual updates to previous survey information also considered observed market trends or changes.

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 is available on the BBER website www.bber.umt.edu/FIR/S_WY.asp and upon request. However, individual firm-level data are confidential and will not be released.

Wyoming's Timber Resource

Wyoming contains approximately 6 million acres of "nonreserved timberland"— lands not permanently reserved through statute or administrative designation such as Wilderness Areas, National Parks, and Monuments. The majority (64 percent) of nonreserved timberland in Wyoming is National Forest System (NFS) land managed by the USDA Forest Service (Miles 2016). Likewise, the majority (80 percent) of sawtimber tree volume is found on NFS lands (fig. 1). In comparison, NFS lands provided 52 percent of the 2014 harvest, while private and

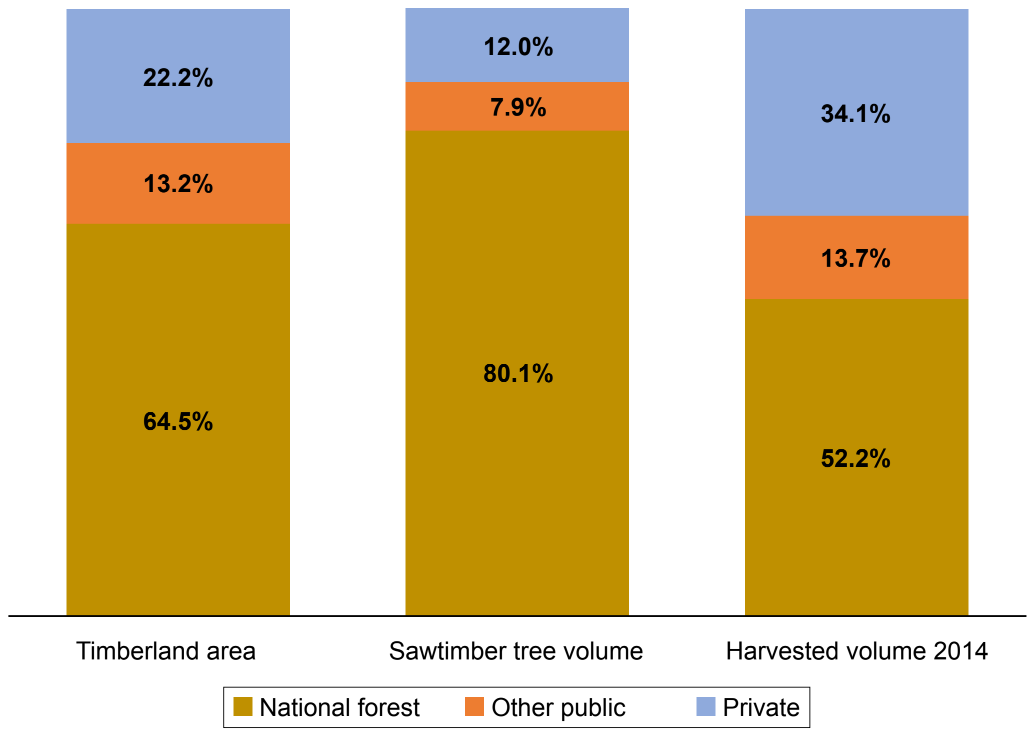

***Figure 1**—Characteristics of Wyoming's timberland by ownership class, 2014.*

tribal landowners provided 34 percent. The remaining 14 percent came from State and Bureau of Land Management lands. Slightly less than 20 percent of the 2014 harvest was standing dead material, up from 12 percent in 2010 (McIver et al. 2014).

Wyoming's Timber Harvest

Timber harvest from lands in Wyoming totaled 67.5 million board feet (MMBF) Scribner, about 15.6 million cubic feet (MMCF), in 2014. This marked a 62 percent increase compared to the 2010 harvest of 41.7 MMBF (5.4 MMCF) (McIver et al. 2014, revised) and a 5 percent increase from the 2005 harvest of 64 MMBF (13.7 MMCF) (Morgan et al. 2009) (fig. 2).

This strong rebound in harvest can be explained in part by economic influences affecting wood products markets. The Great Recession and drop in U.S. home construction from 2007 to 2009 greatly reduced the demand for lumber through 2010 and 2011 (Keegan et al. 2012). Since 2011, increases in home construction and overseas demand led to improved markets for wood products. All Wyoming ownership classes experienced higher harvest levels in 2014, with the harvest from private lands nearly doubling.

Harvest by Product Type

Wyoming's timber harvest is concentrated in three general product categories: saw logs—timber sawn to produce lumber, mine timbers, and other sawn products; posts and small poles— timber used to manufacture fence posts, small poles, and rails used in fence construction; and other products— timber used to manufacture house logs, log furniture, and firewood.

Saw logs have consistently been the predominant product type harvested in the State. In 2014 they accounted for 95 percent (63.9 MMBF) of the total timber harvest. Posts and other fence material accounted for 2.5 percent (1.9 MMBF), and other products made up the remaining 2.5 percent (1.7 MMBF) (table 1).

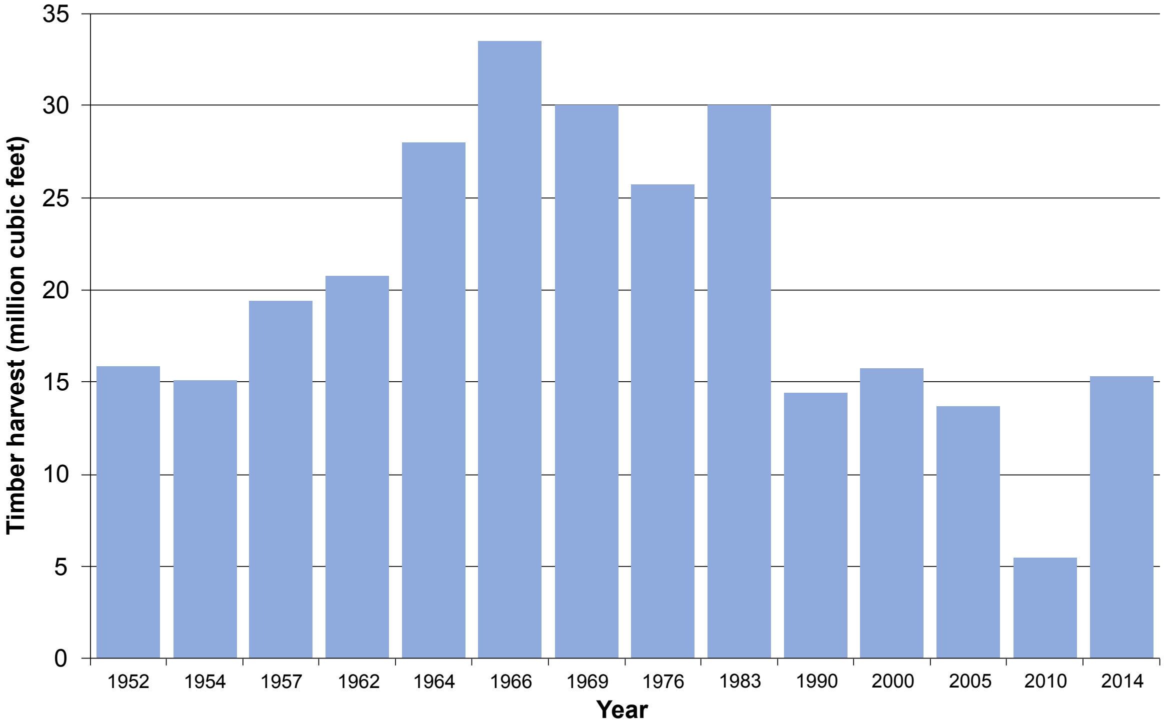

Figure 2—*Wyoming timber harvest, selected years. Sources: Brandt et al. 2009, Morgan et al. 2005, Johnson 2001, McLain 1987, Keegan and White 1979, Setzer 1971, Setzer and Wilson 1970, Spencer and Farrenkopf 1964.*

Table 1—Wyoming timber harvest volume by ownership source and product type, 2014.

Ownership source	Saw logs	Post and pole	Other products[a]	All products
	Thousand board feet, Scribner			
Private timberlands	21,910	815	291	23,016
National forests	33,123	851	1,286	35,260
Other public[b]	8,866	231	175	9,271
Total	63,899	1,897	1,752	67,547

[a] Other timber products include logs used for house logs, log furniture, and industrial fuelwood.
[b] Other public includes State and BLM lands.

National forests provided the majority of timber for each of the product types. In total, public lands provided 66 percent (44.5 MMBF) of the timber harvest in 2014. Non-industrial private and tribal owners provided the remaining 34 percent (23 MMBF).

Harvest by Geographic Source

The geographic sources of Wyoming's timber harvest have been divided into five resource areas: northeast, north central, northwest, southeast, and southwest (fig. 3). The Southeast Resource Area experienced the largest shift, increasing from only 9.5 percent of the total State harvest in 2010 to 34.7 percent in 2014.

Harvest within the North Central Resource Area declined from 14.4 percent of State timber harvests in 2010 to 12.7 percent in 2014, even though the volume harvested within the region nearly doubled to 8.6 MMBF during this time. The Northwest and Southwest resource areas experienced declines in both the volume harvested within these regions as well as their shares of Statewide harvest. The Northwest Resource Area harvested only 5.8 MMBF in 2014 compared to 6.4 MMBF in 2010, while the Southwest declined from 7.4 MMBF to 5.9 MMBF.

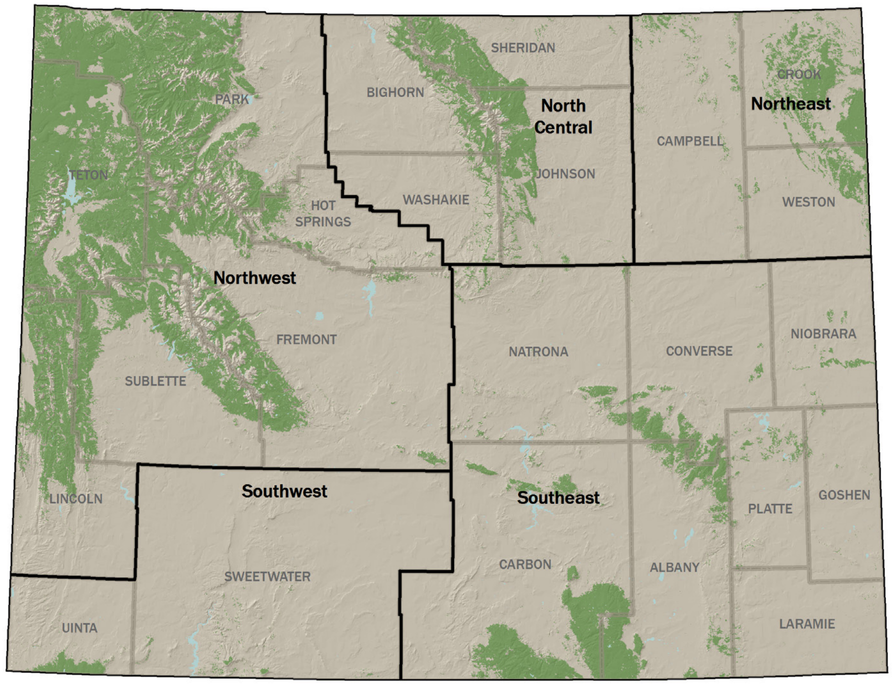

Figure 3—Wyoming resource areas.

The other region that experienced a significant increase in its timber harvest was the Northeast. The resource area's share of the State timber harvest remained relatively stable at 35 percent, while the volume of timber harvested more than doubled to 23.8 MMBF in 2014.

Overall, the geographic source of timber in 2014 shifted away from the western half of the State and was heavily concentrated in the eastern half, where the majority of milling infrastructure and capacity resides.

Harvest by Species

The species composition of Wyoming's timber harvest has historically been dominated by ponderosa pine (47 to 69 percent annually). In 2014, lodgepole pine became the dominant species harvested, accounting for 43 percent of the harvest that year (table 2). Between 2010 and 2014 the harvest of ponderosa pine increased slightly while the harvest of lodgepole pine doubled. The sharp increase in lodgepole pine harvest can be explained in part by increased efforts to mitigate the effects of the mountain pine beetle combined with the re-opening of three idle mills (Wyoming State Forestry Division 2015). The harvest of Engelmann and Black Hills spruce increased from 5.4 MMBF to 7.7 MMBF while its share decreased from 13 percent to 11 percent of the total harvest. Douglas-fir increased a proportion of the harvest from 3 percent to 10 percent, while true firs and other species stayed the same or declined.

End Uses of Wyoming's Timber Harvest

Wyoming's 2014 timber harvest was approximately 15.6 MMCF (excluding bark) that went to timber processors within and outside the State (fig. 4). Of this volume, 88 percent (13.8 MMCF) went to sawmills, 7 percent (1 MMCF) went to post and pole manufacturers, 2 percent (0.3 MMCF) went to log home and log furniture manufacturers and the remaining 3.6 percent (0.5 MMCF) was used for fuelwood, wood pellets and shavings

Of the 13.8 MMCF of timber received by sawmills, 5.3 MMCF (38 percent) became

Table 2—Wyoming timber harvest volume by species, selected years.

Species	2000	2005	2010[a]	2014
	-------*Thousand board feet, Scribner*-------			
Lodgepole pine	18,824	9,853	13,383	29,024
Ponderosa pine	42,121	44,156	19,538	23,702
Engelmann/Black Hills spruce	4,112	3,640	5,410	7,699
Douglas-fir	3,562	5,785	1,107	6,775
True firs	1,661	597	107	178
Other species[b]	214	7	1,048	169
All species	70,494	64,038	40,593	67,547

[a] Revised volume.
[b] Other species include western larch, limber pine, western white pine, red alder and aspen.

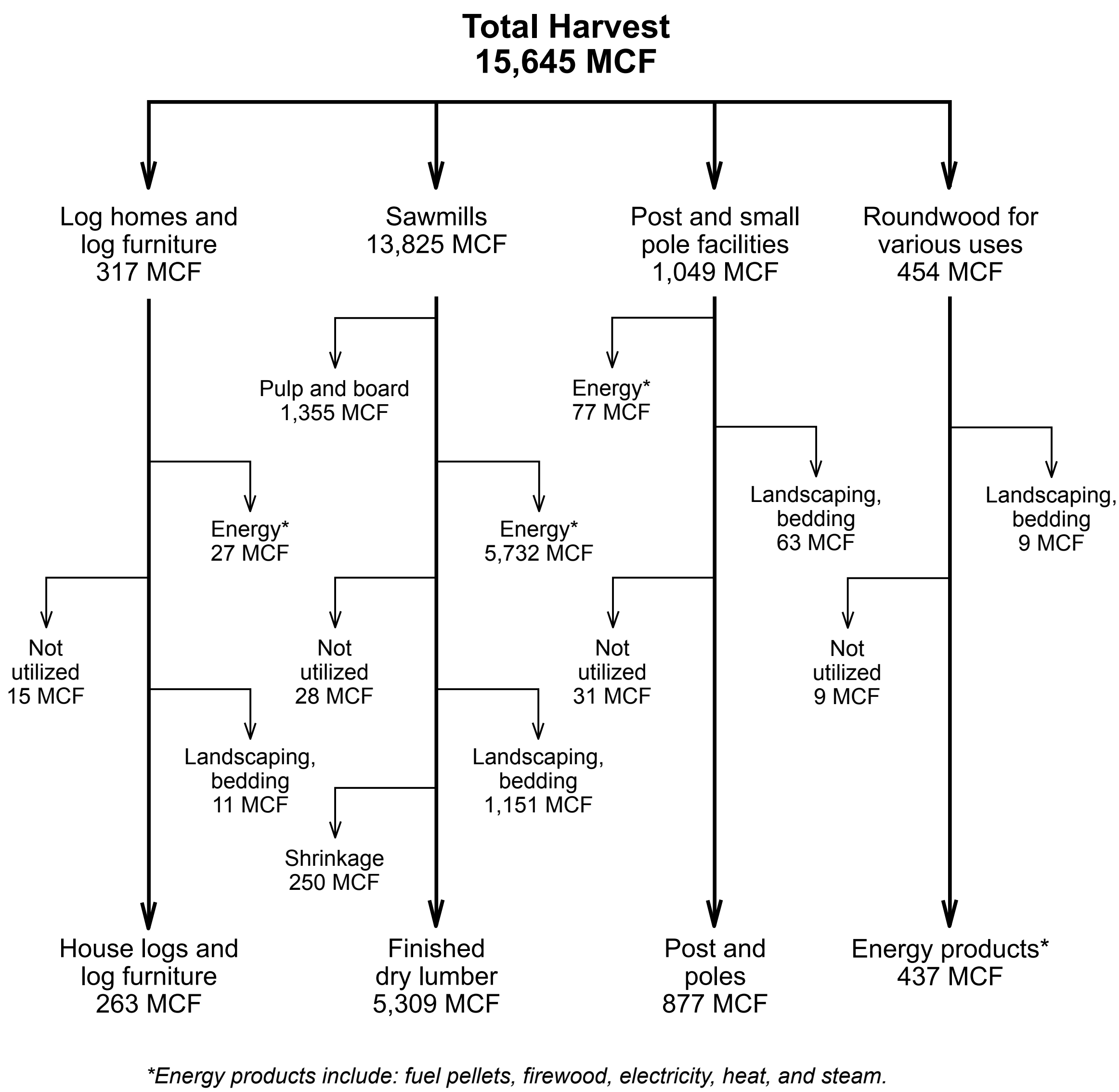

***Figure 4**—Wyoming’s 2014 timber harvest by product and final disposition.*

finished dry lumber, while 41 percent (5.8 MMCF) became mill residue that was used for energy or heat production in the form of biomass fuel, fuel pellets or firewood. An additional 1.4 MMCF of residue from the sawmill sector flowed to pulp and board plants in other States, 1.2 MMCF was sold as landscaping mulch or animal bedding products, while 0.25 MMCF was lost to shrinkage.

Timber Flow

Wyoming continues to experience proportionately larger log flows into and out of the State than other western States, in part because most of its timber resource and mills are located along its borders. In 2014, Wyoming mills brought in 49.3 MMBF of timber from other States while 25.4 MMBF of Wyoming timber was processed out-of-State, making the State a net importer of 23.9 MMBF of timber (table 3). Nearly 75 MMBF crossed Wyoming State lines in 2014, a volume equivalent to 110 percent of the State's timber harvest.

Of the nearly 50 MMBF imported into Wyoming, the majority (90 percent) was equally split between Colorado and South Dakota. Most of the remaining timber (4.7 MMBF) came from Utah, with very small volumes from Montana, Idaho, and Washington. This pattern mimics that of 2005 when Colorado, South Dakota, and Montana provided 87 percent of the timber imported into the State. Utah and Montana both provided a larger share of the timber imported into the State in 2010 than in 2014.

Just over a third (38 percent) of Wyoming's 2014 timber harvest was processed by mills in other States. The majority (24 MMBF) was equally split between Montana and South Dakota mills, and the remainder (1.4 MMBF) went to Idaho and Colorado.

Wyoming mills processed 62 percent (42.1 MMBF) of the timber harvested in the State plus an additional 49.3 MMBF from other States. Of the Wyoming timber processed in-State, 60 percent was processed in the resource area in which it was harvested. The proportion of timber harvested and processed in the same resource area decreased from 80 percent in 2010. Better markets for lumber in 2014 likely allowed timber to travel farther and still be economical.

See also, Part II: Industry Sectors, Capacity and Outputs (RMRS-RB-27-2), Part III: Sales, Employment and Economic Contribution (RMRS-RB-27-3), and Part IV, Supplemental Tables (RMRS-RB-27-4).

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Table 3—Wyoming's timber flow by resource area, 2014.

	Geographic source of timber						
Destination	**North Central**	**Northeast**	**Northwest**	**Southeast**	**Southwest**	**Out-of-State**	**Total timber received**
	Thousand board feet, Scribner						
North Central	508	0	0	0	0	0	508
Northeast	0	11,969	0	0	0	22,178	34,147
Northwest	0	0	937	0	0	29	966
Southeast	0	0	0	22,863	2,200	22,312	47,375
Southwest	0	0	0	0	3,665	4,739	8,404
Shipped out of WY	8,101	11,873	4,826	566	40	0	
Total Wyoming timber received							91,400
							Total Wyoming timber harvest
Total Wyoming timber harvest by resource area	8,609	23,842	5,763	23,429	5,905		67,548

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