

# Montana's Forest Products Industry and Timber Harvest, 2018

## Report Highlights

- A total of 93 facilities were identified as operating in Montana during 2018:
  - 25 lumber facilities
  - 1 plywood plant
  - 27 house log manufactures
  - 23 bark product, fuel pellet, cedar product, pulp-chip conversion, and energy plants
  - 2 residue board facilities
  - 10 post and pole plants
  - 5 log furniture manufacturers
- Montana's 2018 timber harvest was 376 million board feet (MMBF) Scribner, down from 412 MMBF in 2014. Douglas Fir became the leading species harvested, accounting for 42 percent of the harvest. Sawlogs and veneer logs were the main products harvested, accounting for 93 percent of the harvest volume.
- Public lands supplied 57 percent of the harvest in 2018. This is a significant change as the majority of harvest has come from private lands since the early 1970s.
- National Forest lands provided about 41 percent (143 MMBF Scribner) of the timber used by Montana mills in 2018. About 16 percent (57 MMBF Scribner) came from State lands. Private and Tribal lands accounted for 39 percent (132 MMBF Scribner) of timber received by Montana mills. The remaining 4 percent (15 MMBF Scribner) of timber received came from other public land, out of state, Canada and unspecified sources.
- Eighty-eight percent of Montana's timber harvest was processed in-state during 2018, down from ninety-six percent in 2014. Almost 45 MMBF Scribner of timber was shipped out of the state, while 15 MMBF of timber was brought into Montana from other states and Canada.
- Between 2014 and 2018 one large mill, one plywood plant and numerous small mills in Montana closed permanently. Timber processing capacity dropped from 635 MMBF in 2014 to 492 MMBF in 2018. Capacity utilization which historically exceeds 70 percent dropped to 60 percent in 2018.
- Montana lumber production dropped from 611 MMBF in 2014 to 483 MMBF in 2018. Panel production (plywood, particle board and MDF) in Montana in 2018 was 479 MMSF (million square feet), down from 487 MMSF in 2014.
- Forest industry employment was 7,981 during 2018, with earnings of \$364 million. Both earnings and employment were up from 2014.
- Sales from Montana's forest products industry were \$553 million in 2018. Lumber and plywood accounted for 54 percent, followed by residue related products with 40 percent. Sales from log home manufacturers were \$16 million, accounting for 3 percent of total sales. The North Central states region, with 29 percent of total sales, was the largest market area for Montana's forest products

**Table 1**--Montana nonreserved timberland by ownership class  
(source: Interior West Forest Inventory and Analysis, 2018, BBER est.).

| <b>Ownership class</b>    | <b>Thousand acres</b> | <b>Percentage of nonreserved timberland</b> |
|---------------------------|-----------------------|---|
| National Forest           | 12,097                | 61.2  |
| Non-industrial private    | 5,060                 | 25.6  |
| State                     | 890                   | 4.5   |
| Industrial                | 867                   | 4.4   |
| Bureau of Land Management | 844                   | 4.3   |
| Other public              | 22                    | 0.1   |
| All owners <sup>a</sup>   | 19,780                | 100   |

<sup>a</sup>Percentage detail may not sum to 100% due to rounding.

To be updated from other collaborator

**Table 2**—Montana timber harvest by ownership class, selected years (sources: Keegan 1980; Keegan and others 1983, 1990, 1995, 2001; Spoelma and others 2008; McIver and others 2013; Hayes and Morgan 2017).

| <b>Ownership class</b>                           | <b>1981</b>    | <b>1988</b>    | <b>1993</b>    | <b>1998</b>    | <b>2004</b>    | <b>2009</b>    | <b>2014</b>    | <b>2018</b>    |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| <i>----- Thousand Board Feet, Scribner -----</i> |                |                |                |                |                |                |                |                |
| <b>Private</b>                                   | <b>583,413</b> | <b>689,986</b> | <b>694,160</b> | <b>640,709</b> | <b>602,043</b> | <b>211,210</b> | <b>265,597</b> | <b>162,024</b> |
| Industrial                                       | 351,744        | 397,853        | 304,854        | 354,430        | 285,324        | 115,590        | 94,943         | 39,990         |
| Non-industrial private and Tribal <sup>a</sup>   | 231,669        | 292,133        | 389,306        | 286,279        | 316,719        | 95,619         | 170,654        | 122,034        |
| <b>Public</b>                                    | <b>451,664</b> | <b>546,308</b> | <b>307,069</b> | <b>228,699</b> | <b>182,915</b> | <b>162,329</b> | <b>145,998</b> | <b>214,231</b> |
| National Forest                                  | 412,867        | 496,803        | 282,324        | 190,870        | 116,965        | 93,580         | 83,148         | 144,405        |
| State  | c              | c              | c              | 36,006         | 59,458         | 63,093         | 57,893         | 58,389         |
| Other public <sup>b</sup>                        | 38,797         | 49,505         | 24,745         | 1,823          | 6,492          | 5,656          | 4,957          | 11,437         |
| All owners                                       | 1,035,077      | 1,236,294      | 1,001,229      | 869,408        | 784,958        | 373,538        | 411,595        | 376,255        |
| <i>----- Percentage of harvest -----</i>         |                |                |                |                |                |                |                |                |
| <b>Private</b>                                   | <b>56.4</b>    | <b>55.8</b>    | <b>69.3</b>    | <b>73.7</b>    | <b>77.0</b>    | <b>56.5</b>    | <b>64.5</b>    | <b>43.1</b>    |
| Industrial                                       | 34.0           | 32.2           | 30.4           | 40.8           | 36.0           | 30.9           | 23.1           | 10.6           |
| Non-industrial private and Tribal <sup>a</sup>   | 22.4           | 23.6           | 38.9           | 32.9           | 41.0           | 25.6           | 41.5           | 32.4           |
| <b>Public</b>                                    | <b>43.6</b>    | <b>44.2</b>    | <b>30.7</b>    | <b>26.4</b>    | <b>23.4</b>    | <b>43.5</b>    | <b>35.5</b>    | <b>56.9</b>    |
| National Forest                                  | 39.9           | 40.2           | 28.2           | 22.0           | 15.0           | 25.1           | 20.2           | 38.4           |
| State  | c              | c              | c              | 4.1            | 7.6            | 16.9           | 14.1           | 15.5           |
| Other public <sup>b</sup>                        | 3.7            | 4.0            | 2.5            | 0.2            | 0.8            | 1.5            | 1.2            | 3.0            |
| All owners <sup>d</sup>                          | 100            | 100            | 100            | 100            | 100            | 100            | 100            | 100            |

<sup>a</sup>Non-industrial private and Tribal combined to prevent disclosure.

<sup>b</sup>Other public includes BLM.

<sup>c</sup>State included in Other public.

<sup>d</sup>Percentage detail may not sum to 100% due to rounding.

**Table 3**--Proportion of Montana timber harvest (MBF, Scribner) by species, selected years (sources: Keegan 1980; Keegan and others 1983, 1990, 1995, 2001; Spoelma and others 2008; McIver and others 2013; Hayes and Morgan 2017).

| <b>Species</b>                           | <b>1981</b> | <b>1988</b> | <b>1993</b> | <b>1998</b> | <b>2004</b> | <b>2009</b> | <b>2014</b> | <b>2018</b> |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <i>----- Percentage of harvest -----</i> |             |             |             |             |             |             |             |             |
| Douglas-fir                              | 27          | 27          | 29          | 34          | 38          | 31          | 41          | 42          |
| Lodgepole pine                           | 25          | 28          | 26          | 25          | 18          | 35          | 21          | 17          |
| Western larch                            | 16          | 14          | 12          | 10          | 12          | 7           | 7           | 12          |
| Ponderosa pine                           | 12          | 17          | 19          | 15          | 19          | 15          | 16          | 11          |
| Other species <sup>a</sup>               | 12          | 7           | 8           | 7           | 6           | 4           | 7           | 10          |
| Spruces                                  | 8           | 7           | 6           | 8           | 7           | 8           | 8           | 7           |
| All species <sup>b</sup>                 | 100         | 100         | 100         | 100         | 100         | 100         | 100         | 100         |

<sup>a</sup>Other species include: true firs, western white pine, western redcedar, western hemlock, Rocky Mountain juniper, aspen and cottonwood, and other softwoods.

<sup>b</sup>Percentage detail may not sum to 100% due to rounding.

**Table 4**--Proportion of Montana timber harvest (MBF, Scribner) by product, selected years (sources: Keegan 1980; Keegan and others 1983, 1990, 1995, 2001; Spoelma and others 2008; McIver and others 2013; Hayes and Morgan 2017).

| <b>Product</b>                           | <b>1981</b> | <b>1988</b> | <b>1993</b> | <b>1998</b> | <b>2004</b> | <b>2009</b> | <b>2014</b> | <b>2018</b> |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <i>----- Percentage of harvest -----</i> |             |             |             |             |             |             |             |             |
| Sawlogs                                  | 71          | 81          | 79          | 77          | 76          | 73          | 89          | 93          |
| Veneer logs                              | 22          | 17          | 17          | 18          | 16          | a           | a           | a           |
| Other timber products <sup>b</sup>       | 7           | 3           | 5           | 6           | 8           | 27          | 11          | 7           |
| All products <sup>c</sup>                | 100         | 100         | 100         | 100         | 100         | 100         | 100         | 100         |

<sup>a</sup>Harvest of veneer logs included in sawlog category to prevent disclosure.

<sup>b</sup>Other timber products include logs used for pulpwood, posts and poles, house logs, cedar products, log furniture, and industrial fuelwood.

<sup>c</sup>Percentage detail may not sum to 100% due to rounding.

**Table 5--Montana timber harvest (million board feet, Scribner) by county, selected years (sources: Keegan 1980; Keegan and others 1983, 1990, 1995, 2001; Spoelma and others 2008; McIver and others 2013; Hayes and Morgan 2017).**

|                             | 1981              |                     | 1988              |                     | 1993              |                     | 1998              |                     | 2004              |                     | 2009              |                     | 2014              |                     | 2018              |                     |
|-----------------------------|-------------------|---------------------|-------------------|---------------------|-------------------|---------------------|-------------------|---------------------|-------------------|---------------------|-------------------|---------------------|-------------------|---------------------|-------------------|---------------------|
| County                      | MMBF,<br>Scribner | Percent<br>of Total | MMBF,<br>Scribner | Percent<br>of Total | MMBF,<br>Scribner | Percent<br>of Total | MMBF,<br>Scribner | Percent<br>of Total | MMBF,<br>Scribner | Percent<br>of Total | MMBF,<br>Scribner | Percent<br>of Total | MMBF,<br>Scribner | Percent<br>of Total | MMBF,<br>Scribner | Percent<br>of Total |
| <b>Northwest Montana</b>    | <b>633</b>        | <b>61</b>           | <b>725</b>        | <b>59</b>           | <b>519</b>        | <b>52</b>           | <b>415</b>        | <b>48</b>           | <b>383</b>        | <b>49</b>           | <b>171</b>        | <b>45.9</b>         | <b>222</b>        | <b>54</b>           | <b>217</b>        | <b>58</b>           |
| Flathead                    | 245               | 24                  | 255               | 21                  | 150               | 15                  | 148               | 17                  | 156               | 20                  | 79                | 21                  | 91                | 22                  | 64                | 17                  |
| Lake                        | 28                | 3                   | 53                | 4                   | 53                | 5                   | 38                | 4                   | 33                | 4                   | 23                | 6                   | 31                | 8                   | 17                | 5                   |
| Lincoln                     | 267               | 26                  | 324               | 26                  | 208               | 21                  | 153               | 18                  | 119               | 15                  | 43                | 12                  | 60                | 15                  | 80                | 21                  |
| Sanders                     | 93                | 9                   | 93                | 8                   | 107               | 11                  | 76                | 9                   | 75                | 10                  | 26                | 7                   | 40                | 10                  | 56                | 15                  |
| <b>Western Montana</b>      | <b>229</b>        | <b>22</b>           | <b>246</b>        | <b>20</b>           | <b>229</b>        | <b>23</b>           | <b>203</b>        | <b>23</b>           | <b>189</b>        | <b>24</b>           | <b>79</b>         | <b>21</b>           | <b>70</b>         | <b>17</b>           | <b>66</b>         | <b>18</b>           |
| Granite                     | 23                | 2                   | 29                | 2                   | 21                | 2                   | 31                | 4                   | 25                | 3                   | 6                 | 2                   | 7                 | 2                   | 14                | 4                   |
| Mineral                     | 45                | 4                   | 40                | 3                   | 32                | 3                   | 20                | 2                   | 41                | 5                   | 13                | 3                   | 16                | 4                   | 7                 | 2                   |
| Missoula                    | 120               | 12                  | 141               | 11                  | 136               | 14                  | 129               | 15                  | 109               | 14                  | 56                | 15                  | 43                | 11                  | 31                | 8                   |
| Ravalli                     | 41                | 4                   | 36                | 3                   | 40                | 4                   | 23                | 3                   | 13                | 2                   | 4                 | 1                   | 4                 | 1                   | 14                | 4                   |
| <b>Southwest Montana</b>    | <b>68</b>         | <b>7</b>            | <b>88</b>         | <b>7</b>            | <b>72</b>         | <b>7</b>            | <b>32</b>         | <b>4</b>            | <b>37</b>         | <b>5</b>            | <b>32</b>         | <b>9</b>            | <b>28</b>         | <b>7</b>            | <b>24</b>         | <b>6</b>            |
| Beaverhead                  | 10                | 1                   | 16                | 1                   | 5                 | 1                   | 2                 | 0                   | 6                 | 1                   | 11                | 3                   | 5                 | 1                   | 8                 | 2                   |
| Deer Lodge                  | 8                 | 1                   | 6                 | 1                   | 11                | 1                   | 8                 | 1                   | 4                 | 1                   | 7                 | 2                   | 2                 | 0                   | 1 <sup>a</sup>    | 0                   |
| Gallatin                    | 36                | 4                   | 29                | 2                   | 30                | 3                   | 4                 | 1                   | 8                 | 1                   | 2                 | 1                   | 8                 | 2                   | 7                 | 2                   |
| Madison                     | 3                 | 0                   | 18                | 1                   | 9                 | 1                   | 11                | 1                   | 5                 | 1                   | 3                 | 1                   | 9                 | 2                   | 5                 | 1                   |
| Park                        | 8                 | 1                   | 16                | 1                   | 11                | 1                   | 6                 | 1                   | 8                 | 1                   | 6                 | 2                   | 4                 | 1                   | 2                 | 1                   |
| Silver Bow                  | 3                 | 0                   | 3                 | 0                   | 5                 | 1                   | 1                 | 0                   | 5                 | 1                   | 3                 | 1                   | 1                 | 0                   | 1                 | 0                   |
| <b>West-Central Montana</b> | <b>80</b>         | <b>8</b>            | <b>105</b>        | <b>9</b>            | <b>80</b>         | <b>8</b>            | <b>136</b>        | <b>16</b>           | <b>92</b>         | <b>12</b>           | <b>70</b>         | <b>19</b>           | <b>73</b>         | <b>18</b>           | <b>59</b>         | <b>16</b>           |
| Broadwater                  | 7                 | 1                   | 2                 | 0                   | 4                 | 0                   | 4                 | 1                   | 2                 | 0                   | 8                 | 2                   | 1                 | 0                   | 1 <sup>a</sup>    | 0                   |
| Cascade                     | 1                 | 0                   | 5                 | 0                   | 1                 | 0                   | 10                | 1                   | 3                 | 0                   | 1                 | 0                   | 2                 | 1                   | 1 <sup>a</sup>    | 0                   |
| Jefferson                   | 8                 | 1                   | 8                 | 1                   | 3                 | 0                   | 6                 | 1                   | 12                | 2                   | 6                 | 2                   | 5                 | 1                   | 4                 | 1                   |
| Judith Basin                | 1                 | 0                   | -                 | 0                   | 3                 | 0                   | 5                 | 1                   | 0                 | 0                   | 0                 | 0                   | -                 | -                   | 1                 | 0                   |
| Lewis & Clark               | 26                | 3                   | 17                | 1                   | 13                | 1                   | 30                | 4                   | 21                | 3                   | 24                | 6                   | 31                | 8                   | 11                | 3                   |
| Meagher                     | 17                | 2                   | 15                | 1                   | 12                | 1                   | 27                | 3                   | 6                 | 1                   | 3                 | 1                   | 11                | 3                   | 18                | 5                   |
| Powell                      | 20                | 2                   | 56                | 5                   | 43                | 4                   | 50                | 6                   | 46                | 6                   | 27                | 7                   | 14                | 3                   | 25                | 7                   |
| Wheatland                   | -                 | 0                   | 1                 | 0                   | 1                 | 0                   | 4                 | 1                   | -                 | 0                   | 1                 | 0                   | 2                 | 1                   | -                 | 0                   |
| Other counties              |                   |                     |                   |                     |                   |                     |                   |                     |                   |                     |                   |                     | 7                 | 2                   | -                 | 0                   |
| <b>Eastern Montana</b>      | <b>26</b>         | <b>2</b>            | <b>73</b>         | <b>6</b>            | <b>102</b>        | <b>10</b>           | <b>73</b>         | <b>8</b>            | <b>84</b>         | <b>11</b>           | <b>20</b>         | <b>5</b>            | <b>18</b>         | <b>4</b>            | <b>10</b>         | <b>3</b>            |
| Big Horn                    | 3                 | 0                   | 12                | 1                   | 13                | 1                   | 12                | 1                   | 16                | 2                   | 3                 | 1                   | 1                 | 0                   | 1 <sup>a</sup>    | 0                   |
| Fergus                      | 9                 | 1                   | 11                | 1                   | 24                | 2                   | 9                 | 1                   | 15                | 2                   | 3                 | 1                   | 3                 | 1                   | 6                 | 2                   |
| Musselshell                 | 2                 | 0                   | 4                 | 0                   | 13                | 1                   | 6                 | 1                   | 1                 | 0                   | 1                 | 0                   | 2                 | 0                   | 1 <sup>a</sup>    | 0                   |
| Powder River                | 1                 | 0                   | 15                | 1                   | 11                | 1                   | 8                 | 1                   | 18                | 2                   | -                 | -                   | 1                 | 0                   | 1 <sup>a</sup>    | 0                   |
| Rosebud                     | 6                 | 1                   | 12                | 1                   | 8                 | 1                   | 11                | 1                   | 6                 | 1                   | -                 | -                   | 1                 | 0                   | -                 | 0                   |
| Other counties              | 4                 | 0                   | 19                | 2                   | 34                | 3                   | 26                | 3                   | 28                | 4                   | 14                | 4                   | 11                | 3                   | 2                 | 1                   |
| <b>Unspecified</b>          | <b>-</b>          | <b>0</b>            | <b>-</b>          | <b>0</b>            | <b>-</b>          | <b>0</b>            | <b>10</b>         | <b>1</b>            | <b>-</b>          | <b>0</b>            | <b>1</b>          | <b>0</b>            | <b>-</b>          | <b>-</b>            | <b>-</b>          | <b>0</b>            |
| All counties <sup>b</sup>   | 1,035             | 100                 | 1,236             | 100                 | 1,001             | 100                 | 869               | 100                 | 785               | 100                 | 373               | 100                 | 412               | 100                 | 376               | 100                 |

<sup>a</sup>Volume is less than 1 MMBF

<sup>b</sup>Percentage detail may not sum to 100% due to rounding.

**Table 6**--Montana timber harvest by ownership class and species, 2018.

| Ownership class                                | Douglas-fir   | Lodgepole pine | Ponderosa pine | Spruces       | Other species <sup>a</sup> | Western larch | All species    |
|--|---------------|----------------|----------------|---------------|----------------------------|---------------|----------------|
| ----- Thousand board feet, Scribner -----      |               |                |                |               |                            |               |                |
| <b>Private</b>                                 | <b>72,732</b> | <b>28,157</b>  | <b>17,374</b>  | <b>12,337</b> | <b>11,743</b>              | <b>19,681</b> | <b>162,024</b> |
| Industrial                                     | 19,204        | 5,007          | 2,992          | 2,672         | 4,371                      | 5,743         | 39,990         |
| Non-industrial private and Tribal <sup>b</sup> | 53,528        | 23,150         | 14,382         | 9,665         | 7,372                      | 13,937        | 122,034        |
| <b>Public</b>                                  | <b>84,683</b> | <b>36,864</b>  | <b>24,749</b>  | <b>15,688</b> | <b>26,291</b>              | <b>25,956</b> | <b>214,231</b> |
| National Forest                                | 57,000        | 27,370         | 15,685         | 11,182        | 17,256                     | 15,912        | 144,405        |
| State  | 21,628        | 7,205          | 7,324          | 3,869         | 8,867                      | 9,497         | 58,389         |
| Other public <sup>c</sup>                      | 6,055         | 2,290          | 1,740          | 637           | 168                        | 547           | 11,437         |
| All owners                                     | 157,415       | 65,021         | 42,123         | 28,025        | 38,034                     | 45,637        | 376,255        |
| ----- Percentage of harvest -----              |               |                |                |               |                            |               |                |
| <b>Private</b>                                 | <b>19.3</b>   | <b>7.5</b>     | <b>4.6</b>     | <b>3.3</b>    | <b>3.1</b>                 | <b>5.2</b>    | <b>43.1</b>    |
| Industrial                                     | 5.1           | 1.3            | 0.8            | 0.7           | 1.2                        | 1.5           | 10.6           |
| Non-industrial private and Tribal <sup>b</sup> | 14.2          | 6.2            | 3.8            | 2.6           | 2.0                        | 3.7           | 32.4           |
| <b>Public</b>                                  | <b>22.5</b>   | <b>9.8</b>     | <b>6.6</b>     | <b>4.2</b>    | <b>7.0</b>                 | <b>6.9</b>    | <b>56.9</b>    |
| National Forest                                | 15.1          | 7.3            | 4.2            | 3.0           | 4.6                        | 4.2           | 38.4           |
| State  | 5.7           | 1.9            | 1.9            | 1.0           | 2.4                        | 2.5           | 15.5           |
| Other public <sup>c</sup>                      | 1.6           | 0.6            | 0.5            | 0.2           | 0.0                        | 0.1           | 3.0            |
| All owners <sup>d</sup>                        | 41.8          | 17.3           | 11.2           | 7.4           | 10.1                       | 12.1          | 100            |

<sup>a</sup>Other species include: true firs, western white pine, western redcedar, western hemlock, Rocky Mountain juniper, aspen and cottonwood, and other softwoods.

<sup>b</sup>Non-industrial private and Tribal combined to prevent disclosure.

<sup>c</sup>Other public includes BLM.

<sup>d</sup>Percentage detail may not sum to 100% due to rounding.

**Table 7--Montana timber harvest by ownership class and product, 2018.**

| Ownership class                                | Saw and<br>veneer logs                    | House logs   | Other products <sup>a</sup> | All products   |
|--|---|--------------|-----------------------------|----------------|
|  | ----- Thousand board feet, Scribner ----- |              |                             |                |
| <b>Private</b>                                 | <b>149,272</b>                            | <b>170</b>   | <b>12,582</b>               | <b>162,024</b> |
| Industrial                                     | 39,990                                    | 0            | 0                           | 39,990         |
| Non-industrial private and Tribal <sup>b</sup> | 109,282                                   | 170          | 12,582                      | 122,034        |
| <b>Public</b>                                  | <b>201,277</b>                            | <b>1,447</b> | <b>11,508</b>               | <b>214,231</b> |
| National Forest                                | 135,873                                   | 1,196        | 7,336                       | 144,405        |
| State  | 54,763                                    | 251          | 3,376                       | 58,389         |
| Other public <sup>c</sup>                      | 10,641                                    | 0            | 796                         | 11,437         |
| All owners                                     | 350,549                                   | 1,617        | 24,090                      | 376,255        |
|  | ----- Percentage of harvest -----         |              |                             |                |
| <b>Private</b>                                 | <b>39.7</b>                               | <b>0.0</b>   | <b>3.3</b>                  | <b>43.1</b>    |
| Industrial                                     | 10.6                                      | 0.0          | 0.0                         | 10.6           |
| Non-industrial private and Tribal <sup>b</sup> | 29.0                                      | 0.0          | 3.3                         | 32.4           |
| <b>Public</b>                                  | <b>53.5</b>                               | <b>0.4</b>   | <b>3.1</b>                  | <b>56.9</b>    |
| National Forest                                | 36.1                                      | 0.3          | 1.9                         | 38.4           |
| State  | 14.6                                      | 0.1          | 0.9                         | 15.5           |
| Other public <sup>c</sup>                      | 2.8                                       | 0.0          | 0.2                         | 3.0            |
| All owners <sup>d</sup>                        | 93.2                                      | 0.4          | 6.4                         | 100            |

<sup>a</sup>Other products include logs used for pulpwood, posts and poles, cedar products, log furniture, and industrial fuelwood.

<sup>b</sup> Non-industrial private and Tribal combined to prevent disclosure.

<sup>c</sup>Other public includes BLM.

<sup>d</sup>Percentage detail may not sum to 100% due to rounding.

**Table 8--Montana timber harvest by species and product, 2018.**

| <b>Species</b>                                   | <b>Saw and</b>     | <b>House logs</b> | <b>Other products<sup>a</sup></b> | <b>All products</b> |
|--|--------------------|-------------------|-----------------------------------|---------------------|
|  | <b>veneer logs</b> |                   |                                   |                     |
| <i>----- Thousand board feet, Scribner -----</i> |                    |                   |                                   |                     |
| Douglas-fir                                      | 150,865            | 317               | 6,234                             | 157,415             |
| Lodgepole pine                                   | 53,683             | 881               | 10,457                            | 65,021              |
| Western larch                                    | 43,713             | 246               | 1,679                             | 45,637              |
| Ponderosa pine                                   | 38,160             | -                 | 3,963                             | 42,123              |
| Other species <sup>b</sup>                       | 37,000             | 53                | 981                               | 38,034              |
| Spruces  | 27,128             | 121               | 776                               | 28,025              |
| All species                                      | 350,549            | 1,617             | 24,090                            | 376,255             |
| <i>----- Percentage of harvest -----</i>         |                    |                   |                                   |                     |
| Douglas-fir                                      | 40.1               | 0.1               | 1.7                               | 41.8                |
| Lodgepole pine                                   | 14.3               | 0.2               | 2.8                               | 17.3                |
| Western larch                                    | 11.6               | 0.1               | 0.4                               | 12.1                |
| Ponderosa pine                                   | 10.1               | 0.0               | 1.1                               | 11.2                |
| Other species <sup>b</sup>                       | 9.8                | 0.0               | 0.3                               | 10.1                |
| Spruces  | 7.2                | 0.0               | 0.2                               | 7.4                 |
| All species <sup>c</sup>                         | 93.2               | 0.4               | 6.4                               | 100                 |

<sup>a</sup>Other products include logs used for pulpwood, posts and poles, cedar products, log furniture, and industrial fuelwood.

<sup>b</sup>Other species include: true firs, western white pine, western redcedar, western hemlock, Rocky Mountain juniper, cottonwood and aspen, and other softwoods.

<sup>c</sup>Percentage detail may not sum to 100% due to rounding.

**Table 9--Timber flow into and out of Montana, 2018.**

| <b>Timber products</b>                           | <b>Log flow into<br/>Montana</b> | <b>Log flow out of<br/>Montana</b> | <b>Net inflow<br/>(net outflow)</b> |
|--|----------------------------------|------------------------------------|-------------------------------------|
| <i>----- Thousand board feet, Scribner -----</i> |                                  |                                    |                                     |
| Saw and veneer logs                              | 11,619                           | 44,557                             | (32,938)                            |
| House logs                                       | 3,102                            | -                                  | 3,102                               |
| Other products <sup>a</sup>                      | 119                              | -                                  | 119                                 |
| All products                                     | 14,840                           | 44,557                             | (29,717)                            |

<sup>a</sup>Other products include logs for pulpwood and posts and poles.

**Table 10**--Active Montana primary wood products facilities by county and product during 2014 and other years (sources: Keegan 1980; Keegan and others 1983, 1990, 1995, 2001; Spoelma and others 2008; McIver and others 2013; Hayes and Morgan 2017).

| County                      | Lumber    | Plywood  | Pulp and particle board | Post and poles | Log homes | Log furniture | Other products <sup>a</sup> | All products |
|-----------------------------|-----------|----------|-------------------------|----------------|-----------|---------------|-----------------------------|--------------|
| <b>Northwest Montana</b>    | <b>8</b>  | <b>1</b> | <b>1</b>                | <b>2</b>       | <b>5</b>  | <b>3</b>      | <b>8</b>                    | <b>28</b>    |
| Flathead                    | 4         | 1        | 1                       | -              | 4         | 2             | 4                           | 16           |
| Lake                        | 2         | -        | -                       | -              | -         | -             | -                           | 2            |
| Lincoln                     | 1         | -        | -                       | 2              | 1         | 1             | 2                           | 7            |
| Sanders                     | 1         | -        | -                       | -              | -         | -             | 2                           | 3            |
| <b>Western Montana</b>      | <b>7</b>  | <b>-</b> | <b>1</b>                | <b>4</b>       | <b>10</b> | <b>1</b>      | <b>7</b>                    | <b>30</b>    |
| Granite                     | -         | -        | -                       | 1              | -         | -             | 2                           | 3            |
| Mineral                     | 1         | -        | -                       | 1              | -         | -             | 2                           | 4            |
| Missoula                    | 2         | -        | 1                       | 1              | 4         | -             | 1                           | 9            |
| Ravalli                     | 4         | -        | -                       | 1              | 6         | 1             | 2                           | 14           |
| <b>Southwest Montana</b>    | <b>2</b>  | <b>-</b> | <b>-</b>                | <b>1</b>       | <b>6</b>  | <b>-</b>      | <b>4</b>                    | <b>13</b>    |
| Beaverhead                  | -         | -        | -                       | 1              | 1         | -             | 1                           | 3            |
| Deerlodge                   | -         | -        | -                       | -              | -         | -             | 1                           | 1            |
| Gallatin                    | -         | -        | -                       | -              | 3         | -             | 2                           | 5            |
| Madison                     | -         | -        | -                       | -              | 2         | -             | -                           | 2            |
| Park                        | 1         | -        | -                       | -              | -         | -             | -                           | 1            |
| Silver Bow                  | 1         | -        | -                       | -              | -         | -             | -                           | 1            |
| <b>West-Central Montana</b> | <b>5</b>  | <b>-</b> | <b>-</b>                | <b>1</b>       | <b>2</b>  | <b>1</b>      | <b>3</b>                    | <b>12</b>    |
| Broadwater                  | 1         | -        | -                       | -              | -         | -             | 1                           | 2            |
| Cascade                     | -         | -        | -                       | -              | 1         | -             | -                           | 1            |
| Jefferson                   | 1         | -        | -                       | 1              | -         | 1             | -                           | 3            |
| Lewis & Clark               | 2         | -        | -                       | -              | -         | -             | -                           | 2            |
| Powell                      | 1         | -        | -                       | -              | 1         | -             | 2                           | 4            |
| <b>Eastern Montana</b>      | <b>3</b>  | <b>-</b> | <b>-</b>                | <b>2</b>       | <b>4</b>  | <b>-</b>      | <b>1</b>                    | <b>10</b>    |
| Carbon                      | -         | -        | -                       | -              | 2         | -             | -                           | 2            |
| Custer                      | -         | -        | -                       | 1              | -         | -             | -                           | 1            |
| Fergus                      | 1         | -        | -                       | -              | -         | -             | -                           | 1            |
| Musselshell                 | 1         | -        | -                       | 1              | -         | -             | -                           | 2            |
| Stillwater                  | 1         | -        | -                       | -              | -         | -             | -                           | 1            |
| Sweet Grass                 | -         | -        | -                       | -              | 1         | -             | -                           | 1            |
| Yellowstone                 | -         | -        | -                       | -              | 1         | -             | 1                           | 2            |
| <b>2018 Total</b>           | <b>25</b> | <b>1</b> | <b>2</b>                | <b>10</b>      | <b>27</b> | <b>5</b>      | <b>23</b>                   | <b>93</b>    |
| 2014 Total                  | 32        | 2        | 2                       | 12             | 25        | 5             | 24                          | 102          |
| 2009 Total                  | 41        | 2        | 3                       | 14             | 33        | 14            | 20                          | 127          |
| 2004 Total                  | 57        | 3        | 3                       | 22             | 88        | 29            | 13                          | 215          |
| 1998 Total                  | 73        | 4        | 3                       | 29             | 75        | 25            | 11                          | 220          |
| 1993 Total                  | 86        | 4        | 3                       | 31             | 59        | 4             | 10                          | 197          |
| 1988 Total                  | 87        | 4        | 3                       | 37             | 35        | 2             | 15                          | 183          |
| 1981 Total                  | 142       | 4        | 3                       | 35             | 27        | 0             | 17                          | 228          |

<sup>a</sup>Other products include biomass energy, cedar shakes and shingles, decorative bark and mulch, roundwood pulp-chip conversion, and fuel pellets.

**Table 11**--Proportion of timber received by Montana facilities (MBF, Scribner) by ownership class, selected years (sources: Keegan 1980; Keegan and others 1983, 1990, 1995, 2001; Spoelma and others 2008; McIver and others 2013; Hayes and Morgan 2017).

| Ownership class                                  | 1981      | 1988      | 1993      | 1998      | 2004      | 2009      | 2014      | 2018      |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| ----- <i>Percentage of timber received</i> ----- |           |           |           |           |           |           |           |           |
| <b>Private</b>                                   | <b>56</b> | <b>56</b> | <b>67</b> | <b>73</b> | <b>75</b> | <b>55</b> | <b>60</b> | <b>39</b> |
| Industrial                                       | 34        | 34        | 31        | 43        | 39        | 31        | 20        | 6         |
| Non-industrial private and Tribal <sup>a</sup>   | 22        | 22        | 36        | 30        | 36        | 24        | 40        | 32        |
| <b>Public</b>                                    | <b>44</b> | <b>45</b> | <b>33</b> | <b>27</b> | <b>26</b> | <b>45</b> | <b>40</b> | <b>61</b> |
| National Forest                                  | 41        | 40        | 30        | 22        | 15        | 24        | 23        | 41        |
| State  | b         | b         | b         | 4         | 7         | 16        | 15        | 16        |
| Other public <sup>c</sup>                        | 4         | 5         | 2         | 1         | 3         | 5         | 2         | 4         |
| All owners <sup>d</sup>                          | 100       | 100       | 100       | 100       | 100       | 100       | 100       | 100       |

<sup>a</sup>Non-industrial private and Tribal combined to prevent disclosure.

<sup>b</sup>State included in Other public.

<sup>c</sup>Includes timber received from Canada and unspecified out-of-state sources.

<sup>d</sup>Percentage detail may not sum to 100% due to rounding.

**Table 12**--Timber received by Montana facilities by ownership class and product, 2018.

| Ownership class                                | Saw and<br>veneer logs                           | House logs   | Other<br>products <sup>a</sup> | All products   |
|--|--|--------------|--------------------------------|----------------|
|  | ----- <i>Thousand board feet, Scribner</i> ----- |              |                                |                |
| <b>Private</b>                                 | <b>118,434</b>                                   | <b>882</b>   | <b>12,597</b>                  | <b>131,913</b> |
| Industrial                                     | 21,312   | 439          | 15                             | 21,766         |
| Non-industrial private and Tribal <sup>b</sup> | 97,122   | 442          | 12,582                         | 110,146        |
| <b>Public</b>                                  | <b>199,028</b>                                   | <b>2,067</b> | <b>11,507</b>                  | <b>212,602</b> |
| National Forest                                | 133,594  | 1,816        | 7,336                          | 142,746        |
| State  | 53,838   | 251          | 3,375                          | 57,464         |
| Other public                                   | 11,596   | 0            | 796                            | 12,392         |
| <b>Canadian and unspecified<sup>c</sup></b>    | <b>148</b>                                       | <b>1,771</b> | <b>104</b>                     | <b>2,023</b>   |
| All owners                                     | 317,611  | 4,720        | 24,208                         | 346,538        |

<sup>a</sup>Other products include logs used for pulpwood, posts and poles, log furniture, and industrial fuelwood.

<sup>b</sup>Non-industrial private and Tribal combined to prevent disclosure.

<sup>c</sup>Includes timber received from Canada and unspecified out-of-state owners.

**Table 13**--Proportion of timber received by Montana facilities (MBF, Scribner) by product, selected years (sources: Keegan 1980; Keegan and others 1983, 1990, 1995, 2001; Spoelma and others 2008; McIver and others 2013; Hayes and Morgan 2017).

| Product                                 | 1981 | 1988 | 1993 | 1998 | 2004 | 2009 | 2014 | 2018 |
|---|------|------|------|------|------|------|------|------|
| -----Percentage of timber received----- |      |      |      |      |      |      |      |      |
| Saw and veneer logs                     | 92   | 97   | 95   | 94   | 89   | 72   | 88   | 92   |
| Other timber products <sup>a</sup>      | 8    | 3    | 5    | 6    | 11   | 28   | 12   | 8    |
| All products                            | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  |

<sup>a</sup>Other timber products include logs used for posts and poles, house logs, pulpwood, log furniture, and industrial fuelwood.

**Table 14**--Timber received by Montana facilities by species and product, 2018.

| Species                                 | Saw and<br>veneer logs | House logs | Other<br>products <sup>a</sup> | All products |
|---|------------------------|------------|--------------------------------|--------------|
| -----Thousand board feet, Scribner----- |                        |            |                                |              |
| Douglas-fir                             | 133,262                | 860        | 6,234                          | 140,355      |
| Lodgepole pine                          | 47,720                 | 2,252      | 10,472                         | 60,445       |
| Western larch                           | 42,884                 | 492        | 1,679                          | 45,054       |
| Ponderosa pine                          | 28,678                 | -          | 3,963                          | 32,642       |
| Other species <sup>b</sup>              | 37,952                 | 513        | 1,084                          | 39,549       |
| Spruces                                 | 27,115                 | 602        | 776                            | 28,493       |
| All species                             | 317,610                | 4,720      | 24,208                         | 346,538      |
| -----Percentage of timber received----- |                        |            |                                |              |
| Douglas-fir                             | 38.5                   | 0.2        | 1.8                            | 40.5         |
| Lodgepole pine                          | 13.8                   | 0.6        | 3.0                            | 17.4         |
| Western larch                           | 12.4                   | 0.1        | 0.5                            | 13.0         |
| Ponderosa pine                          | 8.3                    | -          | 1.1                            | 9.4          |
| Other species <sup>b</sup>              | 11.0                   | -          | 0.3                            | 11.3         |
| Spruces                                 | 7.8                    | 0.2        | 0.2                            | 8.2          |
| All species <sup>c</sup>                | 91.7                   | 1.2        | 7.0                            | 100          |

<sup>a</sup>Other products include logs used for pulpwood, posts and poles, log furniture, and industrial fuelwood.

<sup>b</sup>Other species include: true firs, western white pine, western redcedar, western hemlock, Rocky Mountain juniper, cottonwood and poplar, and other softwoods.

<sup>c</sup>Percentage detail may not sum to 100% due to rounding.

**Table 15**--Timber received by Montana facilities by ownership class and species, 2018.

| Ownership class                                | Douglas-fir   | Lodgepole pine | Ponderosa pine | Spruces       | Other species <sup>a</sup> | Western larch | All species    |
|--|---------------|----------------|----------------|---------------|----------------------------|---------------|----------------|
| ----- Thousand board feet, Scribner -----      |               |                |                |               |                            |               |                |
| <b>Private</b>                                 | <b>57,444</b> | <b>23,229</b>  | <b>11,291</b>  | <b>11,418</b> | <b>10,099</b>              | <b>18,431</b> | <b>131,913</b> |
| Industrial                                     | 9,539         | 2,950          | 736            | 1,725         | 2,362                      | 4,455         | 21,766         |
| Non-industrial private and Tribal <sup>b</sup> | 47,904        | 20,280         | 10,555         | 9,694         | 7,737                      | 13,977        | 110,146        |
| <b>Public</b>                                  | <b>82,539</b> | <b>36,381</b>  | <b>21,347</b>  | <b>16,724</b> | <b>29,225</b>              | <b>26,387</b> | <b>212,602</b> |
| National Forest                                | 55,437        | 27,063         | 12,846         | 12,206        | 19,031                     | 16,164        | 142,746        |
| State  | 21,047        | 6,961          | 6,665          | 3,871         | 9,348                      | 9,572         | 57,464         |
| Other public                                   | 6,055         | 2,357          | 1,835          | 647           | 846                        | 652           | 12,392         |
| <b>Canadian and unspecified<sup>c</sup></b>    | <b>373</b>    | <b>835</b>     | <b>4</b>       | <b>351</b>    | <b>225</b>                 | <b>235</b>    | <b>2,023</b>   |
| All owners                                     | 140,355       | 60,445         | 32,642         | 28,493        | 39,549                     | 45,054        | 346,538        |
| ----- Percentage of timber received -----      |               |                |                |               |                            |               |                |
| <b>Private</b>                                 | <b>16.6</b>   | <b>6.7</b>     | <b>3.3</b>     | <b>3.3</b>    | <b>2.9</b>                 | <b>5.3</b>    | <b>38.1</b>    |
| Industrial                                     | 2.8           | 0.9            | 0.2            | 0.5           | 0.7                        | 1.3           | 6.3            |
| Non-industrial private and Tribal <sup>b</sup> | 13.8          | 5.9            | 3.0            | 2.8           | 2.2                        | 4.0           | 31.8           |
| <b>Public</b>                                  | <b>23.8</b>   | <b>10.5</b>    | <b>6.2</b>     | <b>4.8</b>    | <b>8.4</b>                 | <b>7.6</b>    | <b>61.4</b>    |
| National Forest                                | 16.0          | 7.8            | 3.7            | 3.5           | 5.5                        | 4.7           | 41.2           |
| State  | 6.1           | 2.0            | 1.9            | 1.1           | 2.7                        | 2.8           | 16.6           |
| Other public                                   | 1.7           | 0.7            | 0.5            | 0.2           | 0.2                        | 0.2           | 3.6            |
| <b>Canadian and unspecified<sup>c</sup></b>    | <b>0.1</b>    | <b>0.2</b>     | <b>0.0</b>     | <b>0.1</b>    | <b>0.1</b>                 | <b>0.1</b>    | <b>0.6</b>     |
| All owners <sup>d</sup>                        | 40.5          | 17.4           | 9.4            | 8.2           | 11.4                       | 13.0          | 100.0          |

<sup>a</sup>Other species include: true firs, western white pine, western redcedar, western hemlock, rocky mountain juniper, cottonwood and aspen, and other softwood species.

<sup>b</sup>Non-industrial and Tribal combined to prevent disclosure.

<sup>c</sup>Includes timber receipts from Canada and unspecified out-of-state owners.

<sup>d</sup>Percentage detail may not sum to 100% due to rounding.

**Table 16**--Montana lumber overrun and lumber recovery factor (LRF), selected years (sources: Keegan 1980; Keegan and others 1983, 1990, 1995, 2001; Spoelma and others 2008; McIver and others 2013; Hayes and Morgan 2017).

| Year        | Timber<br>processed                        | Lumber<br>produced                             | Overrun | LRF <sup>b</sup> |
|-------------|--|--|---------|------------------|
|             | <i>MMBF<sup>a</sup></i><br><i>Scribner</i> | <i>MMBF<sup>a</sup></i><br><i>Lumber tally</i> |         |                  |
| <b>2018</b> | 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             |

<sup>a</sup>MMBF = million board feet.

<sup>b</sup>LRF = board feet of lumber per cubic foot of log input.

**Table 17**--Number of Montana sawmills by annual lumber production, selected years (sources: Schweitzer and others 1975; Setzer and Wilson 1970; Keegan 1980; Keegan and others 1983, 1990, 1995, 2001; Spoelma and others 2008; McIver and others 2013; Hayes and Morgan 2017).

| Year        | Annual lumber production                       |   |  | Total mills |
|-------------|--|---|--|-------------|
|             | <i>Less than</i><br><i>10 MMBF<sup>a</sup></i> | <i>10 MMBF<sup>a</sup> to</i><br><i>50 MMBF</i> | <i>More than</i><br><i>50 MMBF<sup>a</sup></i> |             |
| <b>2018</b> | 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         |

<sup>a</sup>MMBF = million board feet, lumber tally.

<sup>b</sup>Mills with production over 50 MMBF are included in the 10 MMBF to 50

**Table 18**--Proportion of Montana lumber production by sawmill size class, selected years (sources: Schweitzer and others 1975; Setzer and Wilson 1970; Keegan 1980; Keegan and others 1983, 1990, 1995, 2001; Spoelma and others 2008; McIver and others 2013; Hayes and Morgan 2017).

| <b>Year</b> | <b>Less than<br/>10 MMBF<sup>a</sup></b> | <b>More than<br/>10 MMBF<sup>a</sup></b> | <b>Total lumber<br/>production</b> | <b>Average production<br/>per mill</b> |
|-------------|--|--|------------------------------------|--|
|             | <i>Percentage of production</i>          |  | <i>Million board feet</i>          |  |
| <b>2018</b> | <b>3</b>                                 | <b>97</b>                                | <b>483</b>                         | <b>19.31</b>                           |
| 2014        | 2  | 98                                       | 611                                | 19.09                                  |
| 2009        | 2  | 98                                       | 449                                | 10.96                                  |
| 2004        | 3  | 97                                       | 1,040                              | 18.24                                  |
| 1998        | 2  | 98                                       | 1,287                              | 17.63                                  |
| 1993        | 4  | 96                                       | 1,367                              | 15.90                                  |
| 1988        | 4  | 96                                       | 1,558                              | 17.91                                  |
| 1981        | 8  | 92                                       | 1,071                              | 7.54                                   |
| 1976        | 4  | 96                                       | 1,176                              | 12.00                                  |
| 1966        | 10                                       | 90                                       | 1,375                              | 11.96                                  |
| 1962        | 13                                       | 87                                       | 1,259                              | 8.51                                   |
| 1956        | 33                                       | 67                                       | 979                                | 2.97                                   |

<sup>a</sup>MMBF = million board feet, lumber tally.

**Table 19**--Lumber production by Montana sawmills, 2018.

| <b>Lumber production<br/>size class</b> | <b>Number of<br/>mills</b> | <b>Percentage<br/>of production</b> | <b>Lumber<br/>production</b> | <b>Average production<br/>per mill</b> |
|---|----------------------------|-------------------------------------|------------------------------|--|
|   |                            |                                     | <i>Million board feet</i>    |  |
| More than 50 MMBF <sup>a</sup>          | 4                          | 58.3                                | 297                          | 74.16                                  |
| 10 to 50 MMBF                           | 4                          | 38.3                                | 172                          | 42.97                                  |
| 1 to 10 MMBF                            | 7                          | 2.9                                 | 13                           | 1.80                                   |
| Less than 1 MMBF                        | 10                         | 0.5                                 | 2                            | 0.15                                   |
| Total                                   | 25                         | 100.0                               | 483                          | 19.31                                  |

<sup>a</sup>MMBF = million board feet, lumber tally.

**Table 20**--Sawtimber processing capacity and utilization, selected years (sources: Keegan 1980; Keegan and others 1983, 1990, 1995, 2001; Spoelma and others 2008; McIver and others 2013; Hayes and Morgan 2017).

| <b>Plant Type</b>                               | <b>Processing capacity</b> | <b>Volume processed</b> | <b>Percentage of capacity utilized</b> |
|---|----------------------------|-------------------------|--|
| <i>----- Million Board Feet, Scribner -----</i> |                            |                         |  |
| <b>2018</b>                                     |                            |                         |  |
| Sawmills  | 419                        | 245                     | 58%                                    |
| Other sawtimber users <sup>a</sup>              | 73                         | 49                      | 67%                                    |
| Total   | 492                        | 294                     | 60%                                    |
| <b>2014</b>                                     |                            |                         |  |
| Sawmills  | 546                        | 337                     | 62%                                    |
| Other sawtimber users <sup>a</sup>              | 89                         | 57                      | 64%                                    |
| Total   | 635                        | 394                     | 62%                                    |
| <b>2009<sup>b</sup></b>                         |                            |                         |  |
| Sawmills  | 554                        | 237                     | 43%                                    |
| Other sawtimber users <sup>a</sup>              | 106                        | 66                      | 62%                                    |
| Total   | 660                        | 303                     | 46%                                    |
| <b>2004</b>                                     |                            |                         |  |
| Sawmills  | 743                        | 521                     | 70%                                    |
| Other sawtimber users <sup>a</sup>              | 191                        | 135                     | 71%                                    |
| Total   | 934                        | 656                     | 70%                                    |
| <b>1998</b>                                     |                            |                         |  |
| Sawmills  | 844                        | 725                     | 86%                                    |
| Other sawtimber users <sup>a</sup>              | 247                        | 221                     | 89%                                    |
| Total   | 1,091                      | 946                     | 87%                                    |
| <b>1993</b>                                     |                            |                         |  |
| Sawmills  | 964                        | 782                     | 81%                                    |
| Other sawtimber users <sup>a</sup>              | 287                        | 234                     | 82%                                    |
| Total   | 1,251                      | 1,016                   | 81%                                    |
| <b>1988</b>                                     |                            |                         |  |
| Sawmills  | 1,237                      | 985                     | 80%                                    |
| Other sawtimber users <sup>a</sup>              | 324                        | 241                     | 74%                                    |
| Total   | 1,561                      | 1,226                   | 79%                                    |
| <b>1981</b>                                     |                            |                         |  |
| Sawmills  | 1,207                      | 739                     | 61%                                    |
| Other sawtimber users <sup>a</sup>              | 276                        | 241                     | 87%                                    |
| Total   | 1,483                      | 980                     | 66%                                    |

<sup>a</sup>Other sawtimber users include plywood and veneer plants, house log manufacturers, and utility pole plants.

<sup>b</sup>2009 numbers revised from McIver et al. 2013.

**Table 21**--Montana sawmill residue factors, selected years (sources: Keegan 1980; Keegan and others 1983, 1990, 1995, 2001; Spoelma and others 2008; McIver and others 2013; Hayes and Morgan 2017).

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

<sup>a</sup>Bone-dry unit (BDU = 2,400 lb of oven-dry wood) of residue generated for every 1,000 board feet of lumber manufactured.

**Table 22--Production and disposition of residues from Montana sawmills and plywood plants, 2018.**

| <b>Residue type</b>                                  | <b>Total utilized</b> | <b>Pulp and<br/>particle<br/>board</b> | <b>Energy</b> | <b>Mulch or<br/>animal bedding</b> | <b>Unspecified<br/>use</b> | <b>Unutilized</b> | <b>Total produced</b> |
|--|-----------------------|--|---------------|------------------------------------|----------------------------|-------------------|-----------------------|
| <i>----- Bone dry units <sup>a</sup> -----</i>       |                       |  |               |                                    |                            |                   |                       |
| Coarse   | 222,789               | 208,124                                | 11,602        | -                                  | 3,063                      | 45                | 222,834               |
| Fine   | 164,434               | 161,313                                | 1,174         | 1,859                              | 88                         | 276               | 164,710               |
| <i>Sawdust</i>                                       | 110,032               | 108,005                                | 748           | 1,278                              | -                          | 188               | 110,220               |
| <i>Planer shavings</i>                               | 54,402                | 53,308                                 | 426           | 581                                | 88                         | 88                | 54,490                |
| Bark   | 76,271                | -                                      | 53,105        | 23,166                             | -                          | 828               | 77,099                |
| All residues   | 463,494               | 369,437                                | 65,881        | 25,024                             | 3,151                      | 1,149             | 464,643               |
| <i>----- Percentage of residue use by type -----</i> |                       |  |               |                                    |                            |                   |                       |
| Coarse   | 100.0                 | 93.4                                   | 5.2           | -                                  | 1.4                        | 0.0               | 100                   |
| Fine   | 99.8                  | 97.9                                   | 0.7           | 1.1                                | 0.1                        | 0.2               | 100                   |
| <i>Sawdust</i>                                       | 99.8                  | 98.0                                   | 0.7           | 1.2                                | -                          | 0.2               | 100                   |
| <i>Planer shavings</i>                               | 99.8                  | 97.8                                   | 0.8           | 1.1                                | 0.2                        | 0.2               | 100                   |
| Bark   | 98.9                  | -                                      | 68.9          | 30.0                               | -                          | 1.1               | 100                   |
| All residues   | 99.8                  | 79.5                                   | 14.2          | 5.4                                | 0.7                        | 0.2               | 100                   |

<sup>a</sup>Bone dry unit= 2,400 lb oven-dry wood.

**Table 23--Production and disposition of residues from Montana's primary wood products sectors, 2018.**

| Sector  | Total utilized | Pulp and particle board | Energy | Mulch or animal bedding | Unspecified use | Unutilized | Total produced |
|---|----------------|-------------------------|--------|-------------------------|-----------------|------------|----------------|
| <i>----- Bone dry units <sup>a</sup> -----</i>                            |                |                         |        |                         |                 |            |                |
| Lumber, plywood and other sawn products                                   | 463,494        | 369,437                 | 65,881 | 25,024                  | 3,151           | 1,149      | 464,643        |
| House logs and log homes  | 3,561          | -                       | 2,969  | 252                     | 340             | 802        | 4,363          |
| Posts and poles   | 12,516         | 949                     | 5,840  | 2,366                   | 3,361           | 1,700      | 14,215         |
| Other sectors <sup>b</sup>  | 5,414          | -                       | 5,215  | 190                     | 9               | 118        | 5,532          |
| All sectors   | 484,985        | 370,386                 | 79,905 | 27,833                  | 6,861           | 3,769      | 488,753        |
| <i>----- Percentage of residue use production and use by sector -----</i> |                |                         |        |                         |                 |            |                |
| Sawmill and plywood   | 99.8           | 79.5                    | 14.2   | 5.4                     | 0.7             | 0.2        | 100            |
| House log and log home  | 81.6           | -                       | 68.0   | 5.8                     | 7.8             | 18.4       | 100            |
| Post and pole   | 88.0           | 6.7                     | 41.1   | 16.6                    | 23.6            | 12.0       | 100            |
| Other sectors <sup>b</sup>  | 97.9           | -                       | 94.3   | 3.4                     | 0.2             | 2.1        | 100            |
| All sectors   | 99.2           | 75.8                    | 16.3   | 5.7                     | 1.4             | 0.8        | 100            |

<sup>a</sup>Bone dry unit= 2,400 lb oven-dry wood.<sup>b</sup>Other sectors include firewood, pulp chipping and log furniture.**Table 24--Proportion of finished product sales of Montana's primary wood products sectors, selected years (sources: Keegan 1980; Keegan and others 1983, 1990, 1995, 2001; Spoelma and others 2008; McIver and others 2013; Hayes and Morgan 2017).**

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

<sup>a</sup>Other products include: posts and poles, log furniture, and energy products.<sup>b</sup>Percentage detail may not sum to 100% due to rounding.

**Table 25**--Destination and sales value of Montana's primary wood products, 2018.

| Product                                  | North                |                       |                    |         | Rockies <sup>d</sup> | Northeast <sup>e</sup> | Other countries <sup>f</sup> | Total   |
|--|----------------------|-----------------------|--------------------|---------|----------------------|------------------------|------------------------------|---------|
|  | Central <sup>a</sup> | Far West <sup>b</sup> | South <sup>c</sup> | Montana |                      |                        |                              |         |
| ----- Thousand 2018 dollars -----        |                      |                       |                    |         |                      |                        |                              |         |
| Lumber, plywood, and other sawn products | 90,664               | 11,840                | 61,301             | 62,081  | 54,253               | 14,529                 | 1,933                        | 296,601 |
| Residue-related products <sup>g</sup>    | 70,830               | 66,129                | 21,548             | 6,676   | 26,912               | 2,894                  | 27,452                       | 222,441 |
| House logs and log homes                 | 959                  | 3,050                 | 1,182              | 6,612   | 2,481                | 967                    | 1,035                        | 16,286  |
| Other finished products                  | 654                  | 2,944                 | 329                | 10,656  | 2,577                | 679                    | 172                          | 18,011  |
| All products and residues                | 163,107              | 83,963                | 84,360             | 86,024  | 86,223               | 19,069                 | 30,592                       | 553,339 |
| ----- Percentage of sales -----          |                      |                       |                    |         |                      |                        |                              |         |
| Lumber, plywood, and other sawn products | 16                   | 2                     | 11                 | 11      | 10                   | 3                      | 0                            | 54      |
| Residue-related products <sup>g</sup>    | 13                   | 12                    | 4                  | 1       | 5                    | 1                      | 5                            | 40      |
| House logs and log homes                 | 0                    | 1                     | 0                  | 1       | 0                    | 0                      | 0                            | 3       |
| Other finished products                  | 0                    | 1                     | 0                  | 2       | 0                    | 0                      | 0                            | 3       |
| All products and residues <sup>h</sup>   | 29                   | 15                    | 15                 | 16      | 16                   | 3                      | 6                            | 100     |

<sup>a</sup>North Central includes Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

<sup>b</sup>Far West includes Alaska, California, Hawaii, Oregon, and Washington

<sup>c</sup>South includes Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas,

<sup>d</sup>Rocky Mountains includes Arizona, Colorado, Idaho, Nevada, New Mexico, Utah, and Wyoming.

<sup>e</sup>Northeast includes Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, Pennsylvania, Rhode Island, and Vermont.

<sup>f</sup>Other countries include Canada, Pacific Rim countries, and other countries.

<sup>g</sup>Residue-related products include pulp chips, MDF and particleboard, fuel pellets, and bark products.

<sup>h</sup>Percentage detail may not sum to 100% due to rounding.

**Table 26**--Proportion of Montana primary wood product sales by market region, selected years (sources: Keegan 1980; Keegan and others 1983, 1990, 1995, 2001; Spoelma and others 2008; McIver and others 2013; Hayes and Morgan 2017).

| Market area                   | 1981 | 1988 | 1993 | 1998 | 2004 <sup>a</sup> | 2009 <sup>a</sup> | 2014 <sup>a</sup> | 2018 <sup>a</sup> |
|-------------------------------|------|------|------|------|-------------------|-------------------|-------------------|-------------------|
| -----Percentage of sales----- |      |      |      |      |                   |                   |                   |                   |
| North Central                 | 34   | 40   | 37   | 28   | 28                | 27                | 31                | 29                |
| Montana                       | 7    | 5    | 10   | 12   | 12                | 12                | 14                | 16                |
| Rocky Mountains               | 14   | 11   | 15   | 13   | 10                | 11                | 14                | 16                |
| Far West                      | 22   | 17   | 15   | 19   | 17                | 18                | 17                | 15                |
| South                         | 10   | 10   | 11   | 16   | 15                | 13                | 15                | 15                |
| Other countries <sup>b</sup>  | 3    | 9    | 6    | 4    | 6                 | 10                | 6                 | 6                 |
| Northeast                     | 6    | 7    | 6    | 9    | 12                | 8                 | 4                 | 3                 |
| Unknown                       | 4    | 1    | 0    | 0    | 0                 | 0                 | 0                 | 0                 |
| All areas <sup>c</sup>        | 100  | 100  | 100  | 100  | 100               | 100               | 100               | 100               |

<sup>a</sup>Includes mill residue sales; previous years do not include residue sales.

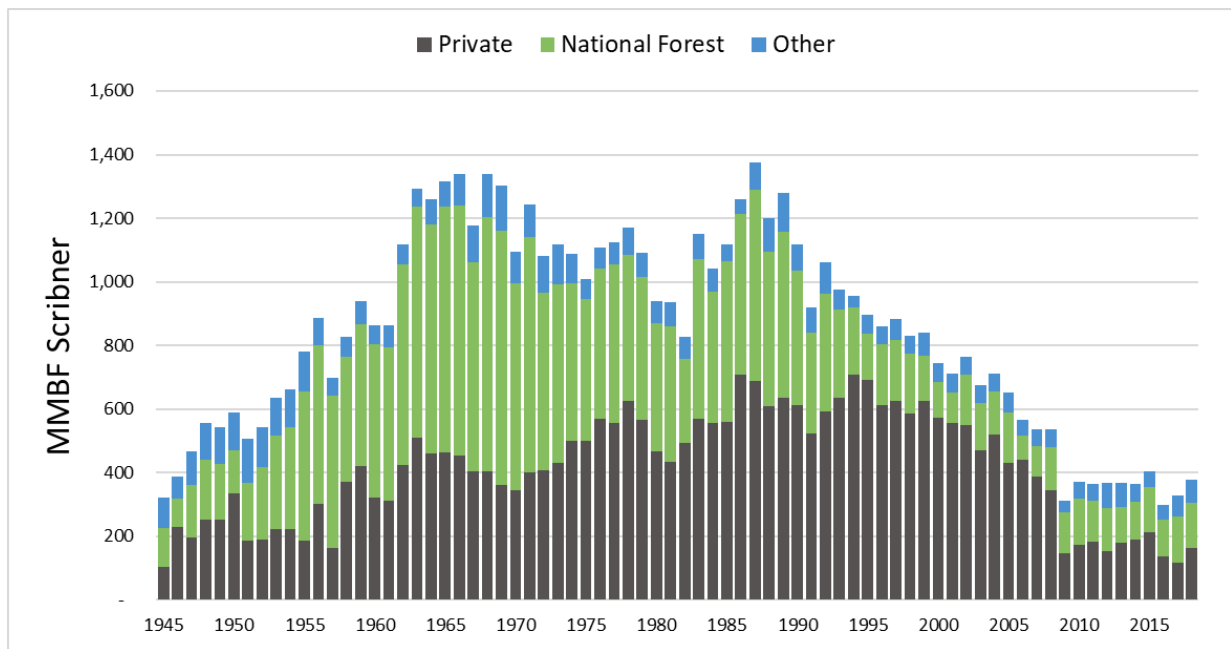
<sup>b</sup>Other countries include Canada, Pacific Rim countries, and other countries.

<sup>c</sup>Percentage detail may not sum to 100% due to rounding.

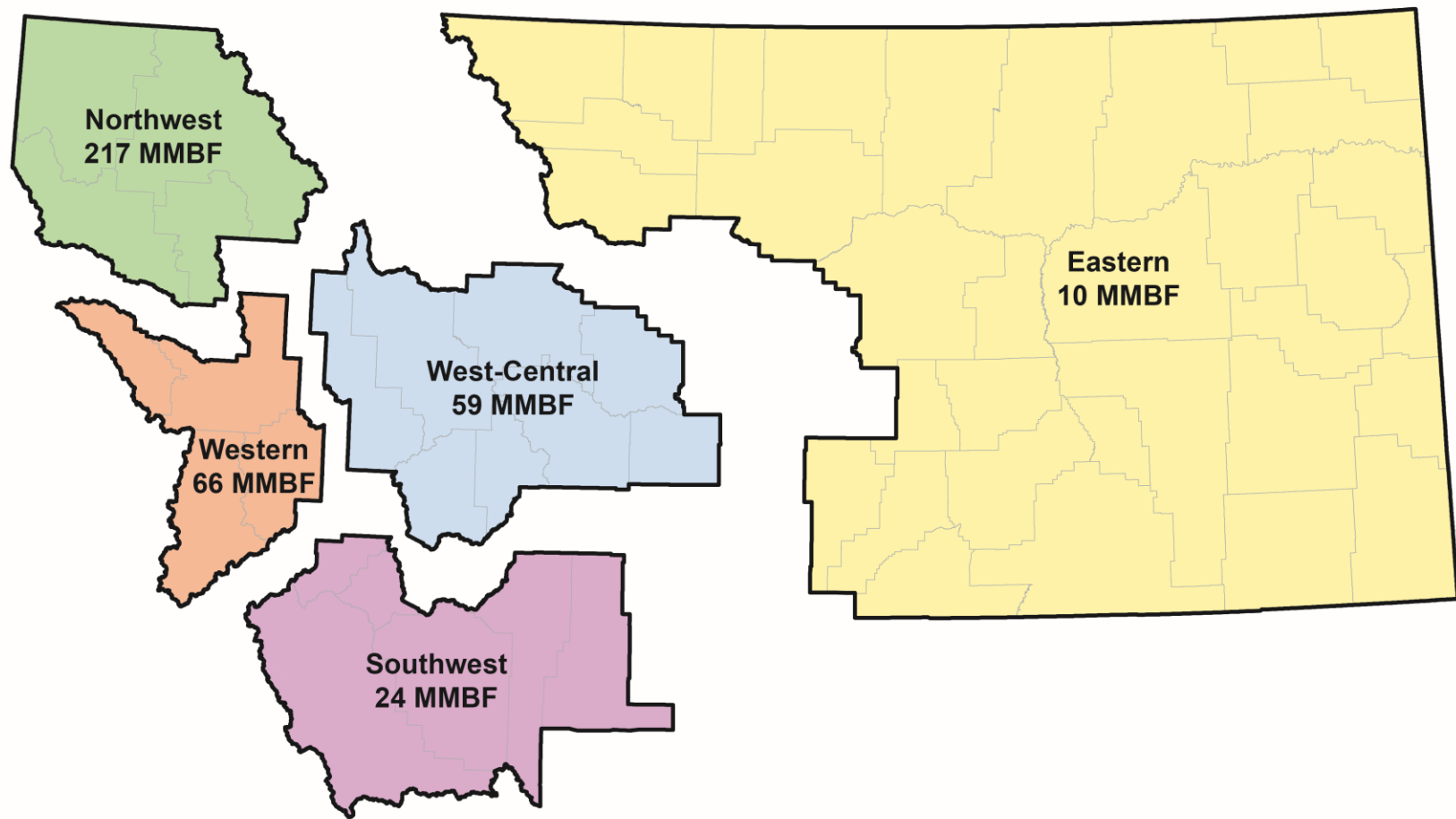
**Table 27- Annual employment and labor income contributions of Montana's forest industry, 2018**

| Sector                               | Direct Employment | Indirect and Induced Employment | Total Employment Contribution <sup>a</sup> | Direct Labor Income | Indirect and Induced Labor Income | Total Labor Income Contribution <sup>a</sup> |
|--------------------------------------|-------------------|---------------------------------|--|---------------------|-----------------------------------|--|
| -----thousand 2018 dollars-----      |                   |                                 |  |                     |                                   |  |
| Wood Product Manufacturing           | 3,107             | 5,029                           | 8,136                                      | \$ 158,434.00       | \$ 295,305.00                     | \$ 453,739.00                                |
| Primary Wood Product Manufacturing   | 1,940             | 4,453                           | 6,393                                      | \$ 96,934.00        | \$ 249,295.00                     | \$ 346,229.00                                |
| Secondary Wood Product Manufacturing | 1,167             | 1,099                           | 2,266                                      | \$ 61,500.00        | \$ 71,094.00                      | \$ 132,594.00                                |
| Forestry and Logging                 | 1,351             | 1,549                           | 2,900                                      | \$ 70,271.00        | \$ 68,648.00                      | \$ 138,919.00                                |
| Forest Support Activities            | 3,498             | 1,137                           | 4,635                                      | \$ 128,217.00       | \$ 54,774.00                      | \$ 182,991.00                                |
| Pulp and Paper Manufacturing         | 20                | 20                              | 40   | \$ 1,000.00         | \$ 760.00                         | \$ 1,760.00                                  |
| <b>Total Forest Industry</b>         | <b>7,976</b>      | <b>a</b>                        | <b>a</b>                                   | <b>\$357,922.00</b> | <b>a</b>                          | <b>a</b>                                     |

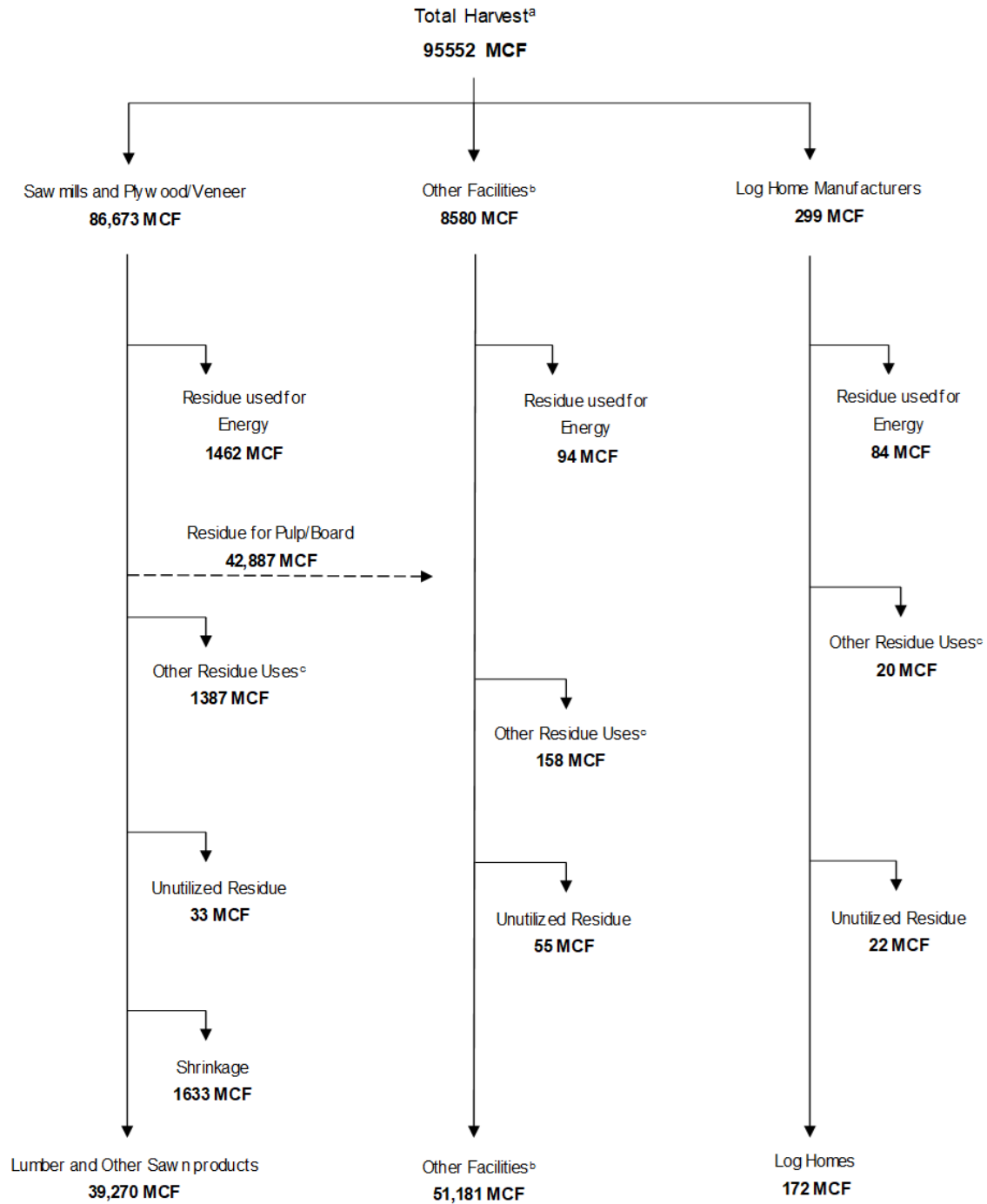
<sup>a</sup>Indirect and induced employment and labor income should not be summed for multiple sectors due to some employment and income showing up as both direct contributions to their sector and indirect contributions to other sectors.



**Figure 1** - Montana timber harvest by ownership, 1945-2018.



**Figure 2** – Map of Montana timber harvest by region.

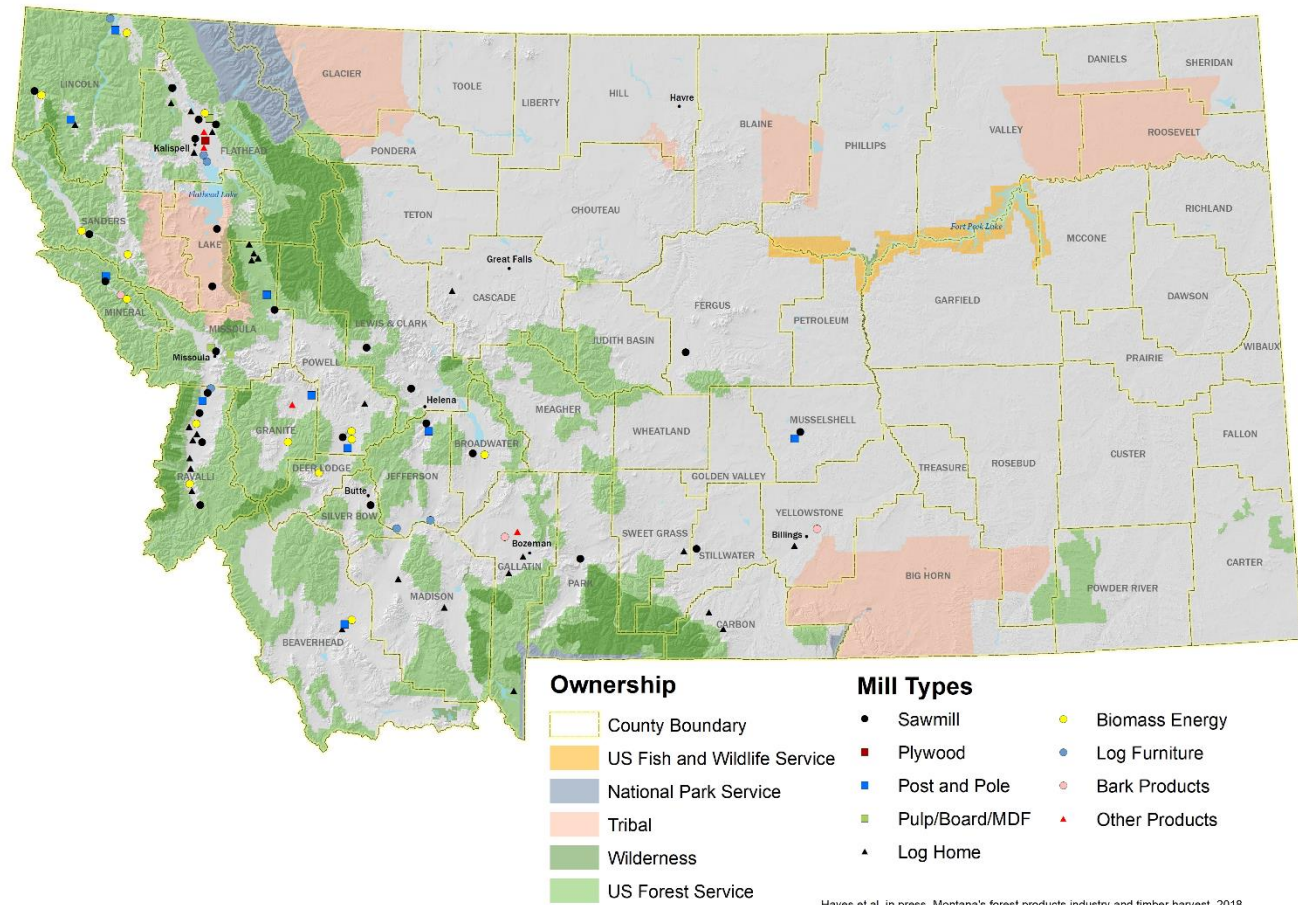


<sup>a</sup> Harvest volume does not include bark.

<sup>b</sup> Other facilities include producers of posts, poles, utility poles, log furniture, energy, energy products, other products.

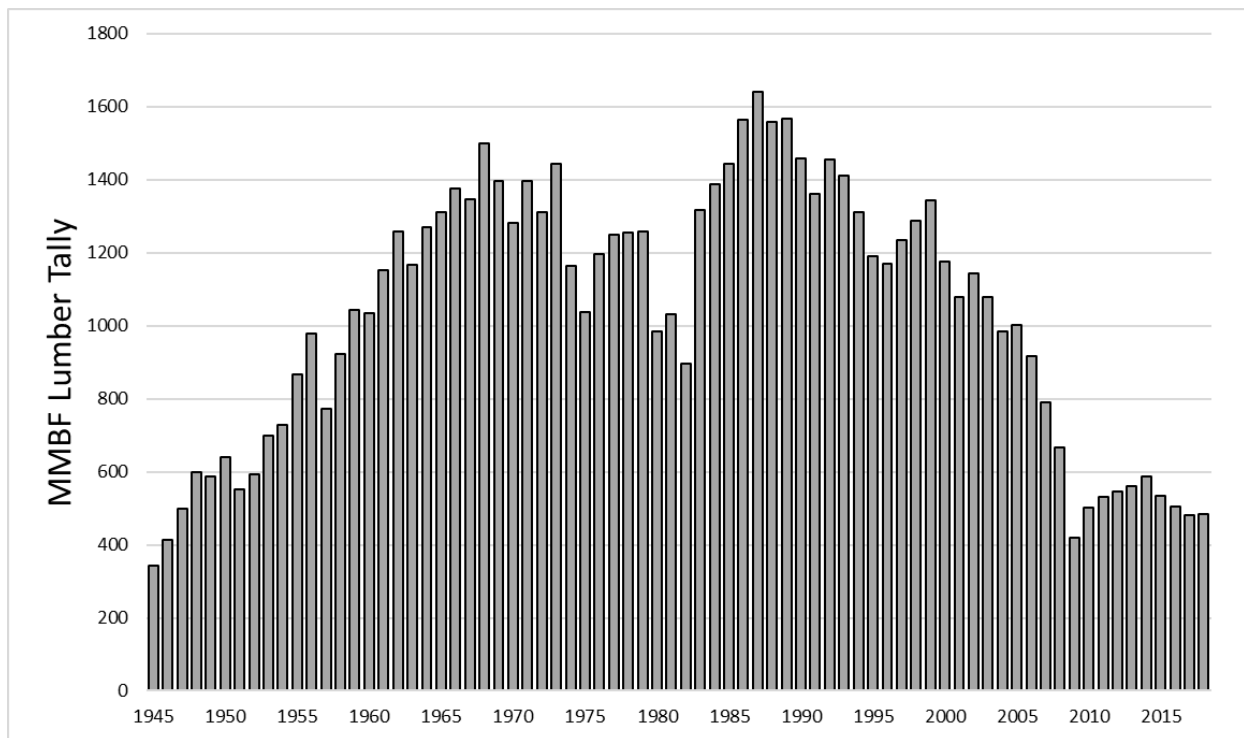
<sup>c</sup> Other uses include landscape, mulch, and animal bedding.

**Figure 3 – Montana timber harvest and flow, 2018.**

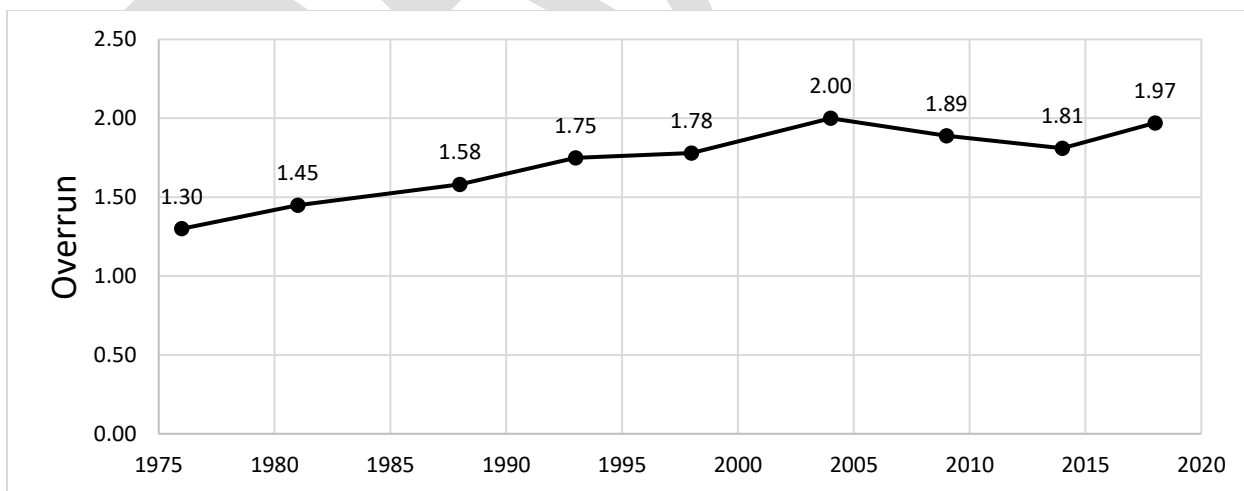


Hayes et al. in press. Montana's forest products industry and timber harvest, 2018.  
Missoula, MT: University of Montana, Bureau of Business and Economic Research (2020).

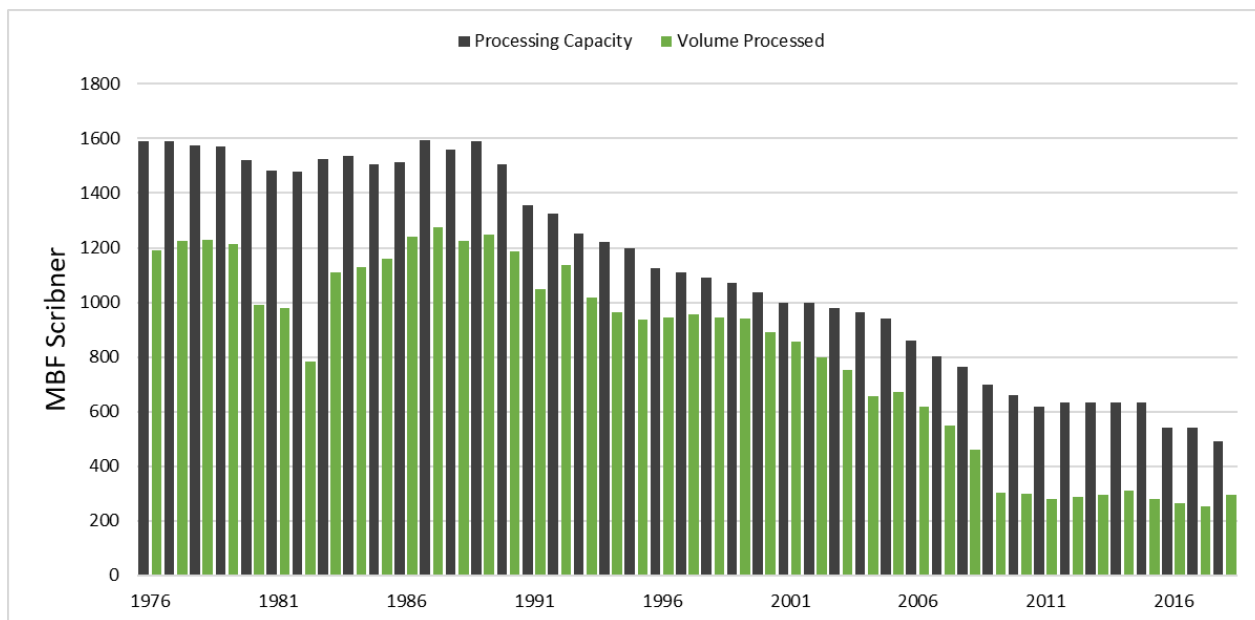
**Figure 4** - Map of active Montana primary processing facilities by type.



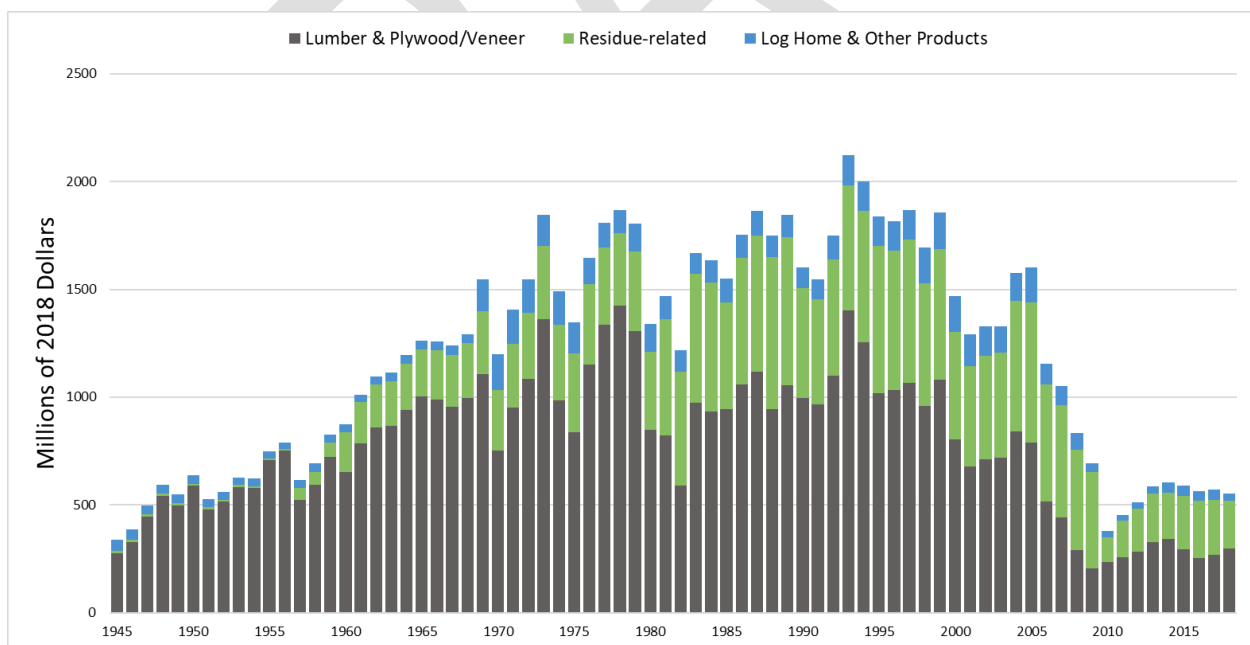
**Figure 5** - Montana lumber production, 1945-2018.



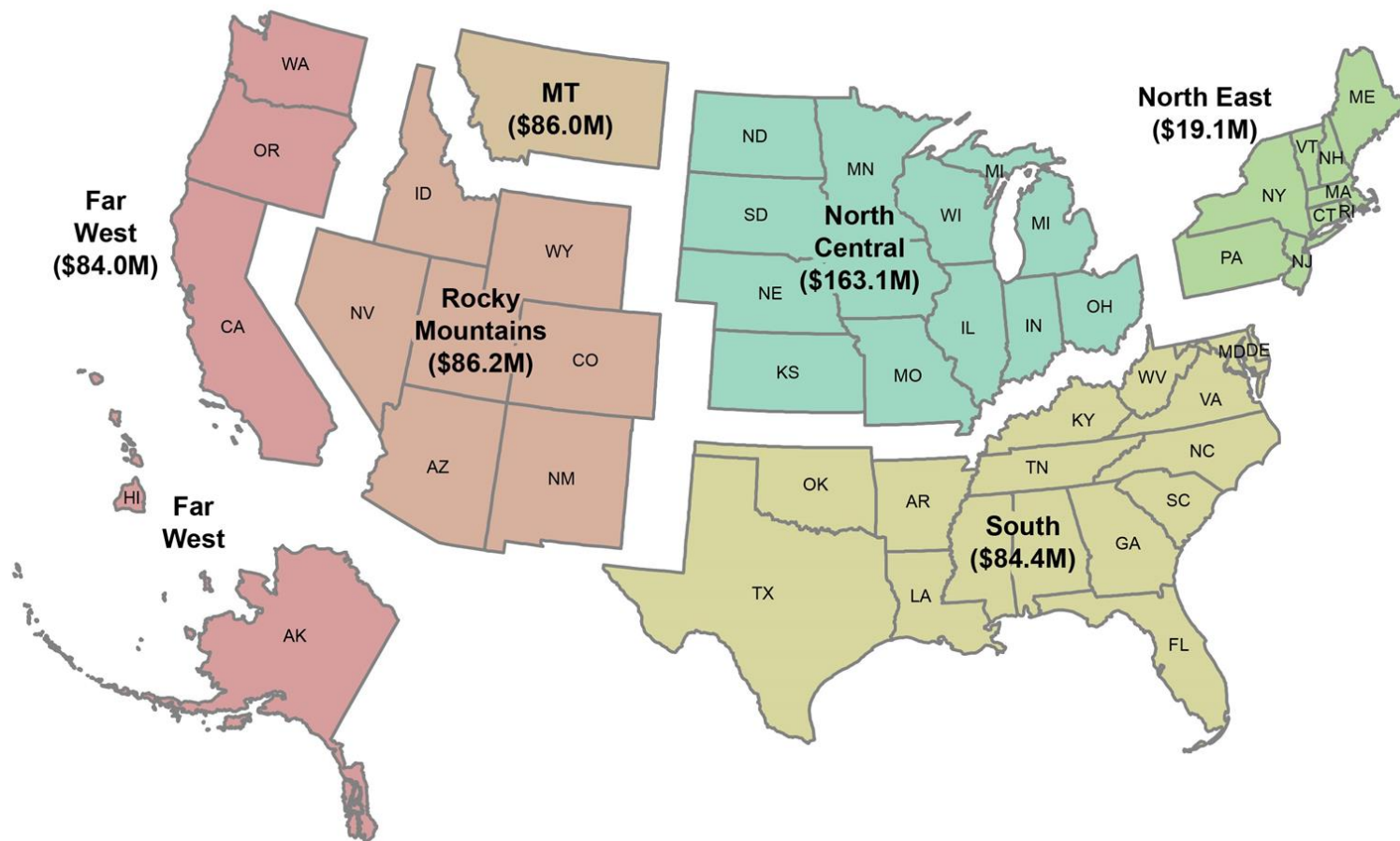
**Figure 6** - Average overrun for Montana sawmills, selected years.



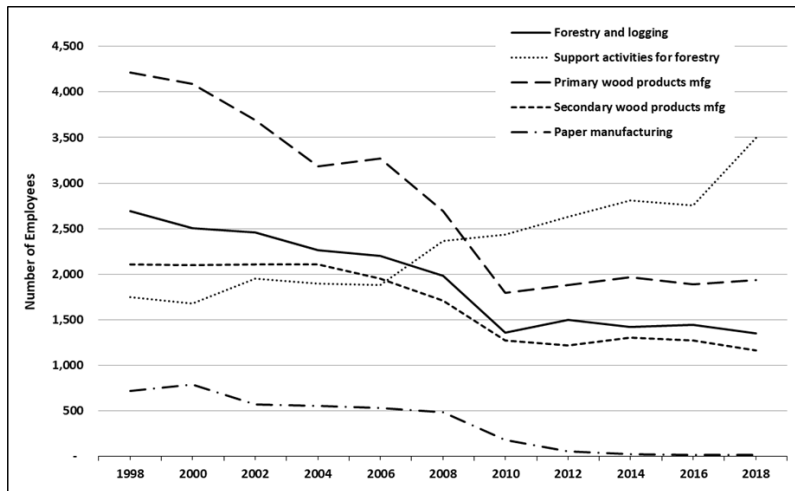
**Figure 7 - Montana timber-processing capacity and utilization, 1976-2018**



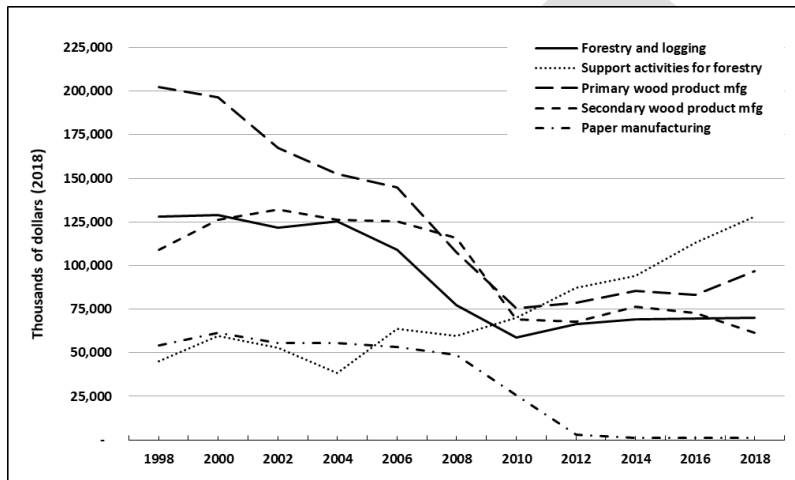
**Figure 8 - Sales value of Montana's primary forest products, 1945-2018**



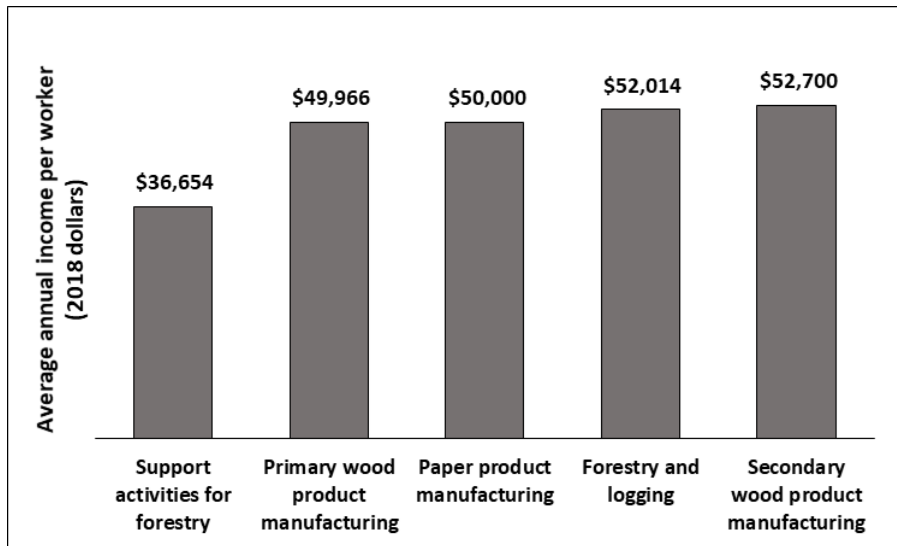
**Figure 9** - Destination and sales value of Montana's primary wood products, 2018.



**Figure 10.** Montana forest industry employment, 1998-2018.



**Figure 11.** Montana forest industry labor income, 1998-2018.



**Figure 12.** Annual labor income per worker, by sector (2018).