

# **Capacity and Capability of Mills in the Beaverhead-Deerlodge National Forest Timber-Processing Area**

**Addendum to:**

Timber Use, Processing Capacity, and Capability to Utilize Small-Diameter Timber  
Within USDA Forest Service, Region One Timber-processing Area

**Submitted to:**

USDA Forest Service, Region One  
and  
Inventory and Monitoring Institute  
Challenge Cost-share Agreement #03-CS-1132463-241

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**January 30, 2004**

## **Introduction**

This report was prepared as a forest planning support document for the Beaverhead-Deerlodge National Forest as part of Challenge Cost-share Agreement #03-CS-1132463-241, between the USDA Forest Service, Inventory and Monitoring Institute and The University of Montana's Bureau of Business and Economic Research (BBER).

In this report, "capacity" refers to the total volume of timber (excluding pulpwood) that existing mills could utilize annually, and "capability" refers to the volume of trees of a certain size class that existing mills can efficiently process annually. The major sources of information used to estimate timber flow, timber-processing capacity, and volumes of timber processed were periodic censuses and annual surveys of the forest products industry (see attached Region One report). These censuses and surveys are performed on a regular basis by the BBER, the University of Idaho's Department of Forest Products, and the Department of Natural Resource Science at Washington State University. Follow-up telephone interviews with mill managers, conducted between May and August 2003, were used to update published volumes of timber processed, as well as timber-processing capacity and capability to use timber of various sizes. Volumes of timber reported as harvested or processed include timber used to produce manufactured wood products (e.g., lumber, veneer, plywood, posts, utility poles, log homes, and log furniture). The roundwood pulpwood and industrial fuelwood components of the harvest are dealt with separately in the Region One report.

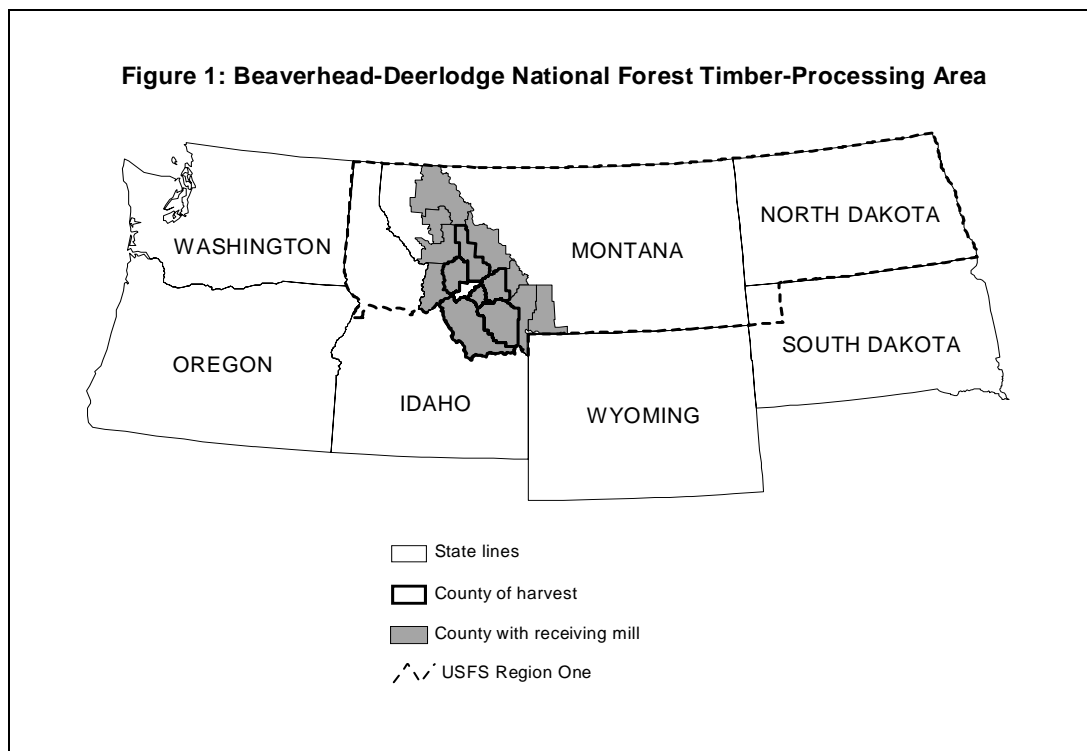
## **Timber-processing area**

The following steps were taken to determine the timber-processing area for the Beaverhead-Deerlodge National Forest:

1. Counties containing Beaverhead-Deerlodge National Forest non-reserved timberland were identified.
2. Using BBER databases, timber harvest and flow was analyzed for all ownerships within the above counties.
3. Based on this timber harvest and flow analysis, all mills receiving timber harvested from those counties that contain Beaverhead-Deerlodge National Forest non-reserved timberland were identified.
4. The counties with the above mills were designated as the Beaverhead-Deerlodge National Forest Timber-Processing Area.

Destinations of small volumes (< 50 thousand cubic feet) of timber that moved extraordinarily long distances were not included in the final delineation of the timber processing area. The mills and associated counties receiving these volumes--often for specialty products like house logs--were not included because these long-distance flows of timber have not occurred repeatedly or consistently.

The Beaverhead-Deerlodge National Forest has non-reserved timberland in seven Montana counties: Beaverhead, Deer Lodge, Granite, Jefferson, Madison, Silver Bow, and Powell (Figure 1). Less than 15 percent of the recent (1998) timber harvest in this seven-county area was from the Beaverhead-Deerlodge National Forest. Most (93 percent) of the timber harvested from these counties was from green (live) trees. The species composition of the harvested volume in this seven-county area was: Douglas-fir about 40 percent, lodgepole pine 27 percent, and spruce 12 percent. Ponderosa pine accounted for 10 percent, while western larch and true firs combined accounted for about 10 percent of timber volume. Almost 90 percent of the timber harvested from these counties was used for lumber production, about 5 percent for veneer/plywood, 3 percent for house logs, and the remainder was used by post and pole and roundwood furniture manufacturers. Roundwood pulpwood is dealt with in the Region One report.



The Beaverhead-Deerlodge National Forest Timber Processing Area (TPA) is the 14-county area with mills that receive timber from Beaverhead, Deer Lodge, Granite, Jefferson, Madison, Silver Bow, and Powell counties. The counties comprising the Beaverhead-Deerlodge National Forest TPA are Beaverhead, Broadwater, Flathead, Gallatin, Granite, Jefferson, Lake, Lewis and Clark, Madison, Missoula, Park, Powell, Ravalli, and Silver Bow (Figure 1). Within the Beaverhead-Deerlodge National Forest TPA there are 148 timber-processing facilities currently operating: 64 log home manufacturers, 38 sawmills, 25 post and pole plants, 18 log furniture manufacturers, and three plywood facilities.

### Current conditions and capacity

Across Region One, about 80 percent of annual timber-processing capacity is being utilized (see attached Region One report). Capacity to process timber in the Beaverhead-Deerlodge National Forest TPA is 164,325 thousand cubic feet (MCF), with slightly less than 79 percent of capacity being used annually.

Thousand Cubic Feet of Timber		Thousand Board Feet Scribner of Timber	
Tree dbh	Volume Used	Tree dbh	Volume Used
<7 in	2,431	<7 in	2,431
7-9.9 in	14,099	7-9.9 in	54,140
10+ in	112,850	10+ in	508,891
Total	129,380	Total	565,462

Adjusting for recent closures and expansion, mills in the Beaverhead-Deerlodge National Forest TPA are currently using about 129,380 MCF of timber annually (Table 1). Slightly more than 87 percent (112,850 MCF) of the volume processed in the TPA is composed of trees with diameter at breast height (dbh)  $\geq 10''$ . Nearly 11 percent (14,099 MCF) of the volume processed comes from trees 7.0 - 9.9" dbh, while about 2 percent (2,431 MCF) of processed volume comes from trees  $< 7''$  dbh.

Most facilities are designed to operate using trees of a given size class (e.g., veneer/plywood plants, which typically use trees  $\geq 10''$  dbh, or post manufacturers, which use trees  $< 7''$  dbh). Capacity at these facilities was readily classified as being capable of processing timber

of just one size class. This was true for some sawmills, but sawmills vary greatly in equipment, product output, and ability to process timber of various sizes.

Mills often process trees that are larger than the smallest tree sizes they are capable of processing. In other words, most mills capable of efficiently processing trees 7 – 9.9” dbh are also capable of processing trees  $\geq 10$ ” dbh, and indeed these mills do process substantial volumes of these larger trees. However, some mills that process larger trees are not capable of processing smaller-diameter trees. For this reason, this report presents capability to process trees  $\geq 10$ ” dbh as the proportion of total capacity not capable of efficiently using trees  $< 10$ ” dbh. Whereas, capability to process trees  $< 7$ ” dbh and 7 – 9.9” dbh are presented as maximum volumes of trees of these size classes that can be processed efficiently.

Financial feasibility analyses, involving repeated simulations of processing logs of a range of sizes through different sawmill configurations (see attached Region One report), were used to estimate the potential for individual sawmills to use trees in each size class. In some cases, particularly where a mill has both small- and large-log capability, expert opinion was employed to estimate the proportion of smaller trees the mill is capable of using.

Thousand Cubic Feet of Timber		Thousand Board Feet Scribner of Timber	
Tree dbh	Capability	Tree dbh	Capability
<7 in	7,505	<7 in	7,505
7-9.9 in	53,751	7-9.9 in	206,402
10+ in	103,070	10+ in	504,284
Total Capacity	164,325	Total Capacity	718,191

\* Note: Capability in <7 and 7-9.9 in. classes is maximum volume capable of being used efficiently; capability in 10+ in. class is portion of total capacity NOT capable of efficiently using trees with dbh<10 in.

About 63 percent (103,070 MCF) of existing capacity in the Beaverhead-Deerlodge National Forest TPA is not capable of efficiently utilizing trees  $< 10$ ” dbh (Table 2). Approximately 60,000 MCF of timber-processing capacity is capable of utilizing trees  $< 10$ ” dbh, and nearly all of this is in the 7 - 9.9” dbh class. A substantial amount of the capacity capable of utilizing smaller diameter trees is being used to process larger trees or is going unused. One-third (32 percent) of capacity in the  $< 7$ ” dbh category is currently utilized to process trees  $< 7$ ” dbh, and just 26 percent of capacity in the 7 - 9.9” dbh class is being used to

process trees 7 - 9.9" dbh. More than 30,000 MCF of capacity capable of using trees 7 - 9.9" dbh are used annually to process trees  $\geq 10$ " dbh.