

Capacity and Capability of Mills in the Bitterroot 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

Prepared by:

Charles E. Keegan
Director, Forest Industry Research

Todd A. Morgan
Research Forester

Timothy P. Spoelma
Research Forester

Bureau of Business and Economic Research
The University of Montana – Missoula

March 3, 2004

Introduction

This report was prepared as a forest planning support document for the Bitterroot 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 volumes of timber processed, as well as timber-processing capacity and capability to use trees 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.

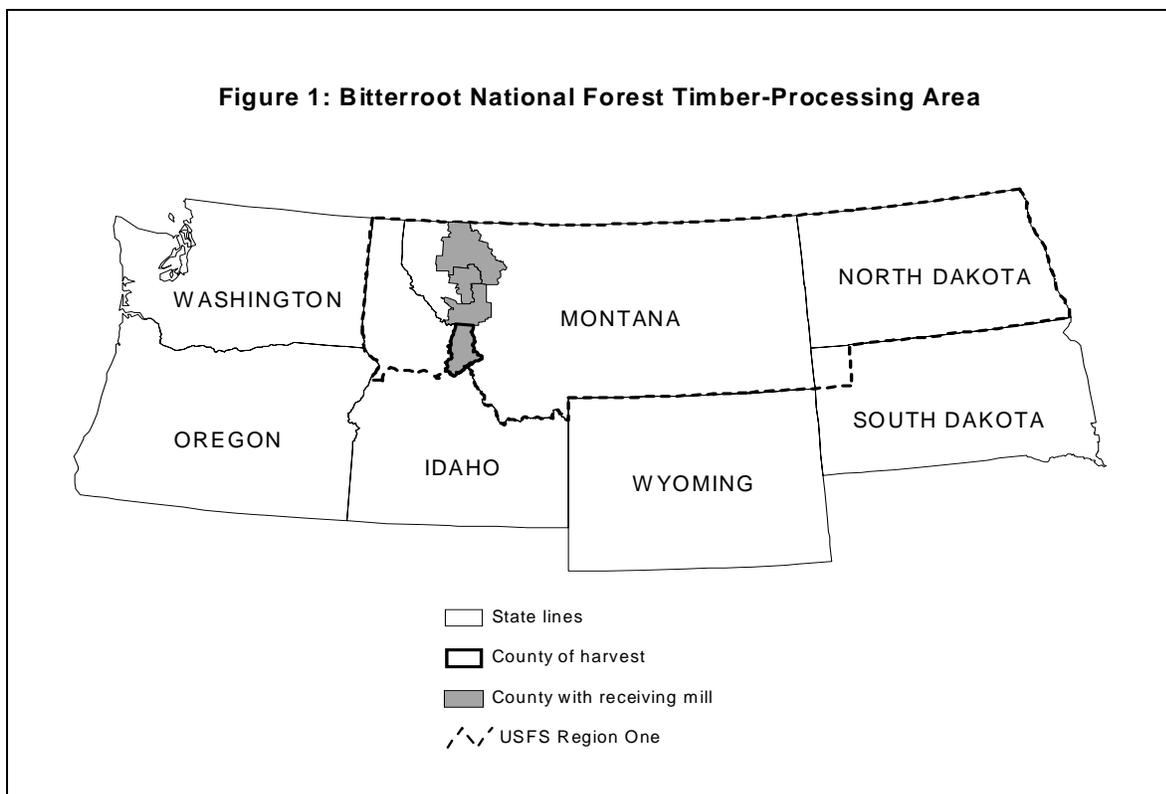
Timber-processing area

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

1. Counties containing Bitterroot 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 Bitterroot National Forest non-reserved timberland were identified.
4. The counties with the above mills were designated as the Bitterroot 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 such as house logs--were not included because these long-distance flows of timber have not occurred repeatedly or consistently.

Bitterroot National Forest non-reserved timberland is located in one Montana county--Ravalli (Figure 1). Slightly more than 54 percent of the recent (1998) timber harvest in Ravalli County originated from the Bitterroot National Forest. Most (75 percent) of the timber harvested consisted of green (live) trees. The species composition of the harvested volume in Ravalli County was: lodgepole pine 29 percent, ponderosa pine 28 percent, Douglas-fir 20 percent, and true firs 10 percent. Engelmann spruce accounted for about 7 percent, and western larch accounted for the remaining 6 percent of the 1998 harvest in Ravalli County. Sawmills received about 68 percent of the timber harvested from Ravalli County, while veneer/plywood manufacturers received about 6 percent. House logs, posts, and small poles combined accounted for about 4 percent of the timber harvest volume. Roundwood pulpwood accounted for about 22 percent and is dealt with in the Region One report.



The Bitterroot National Forest Timber Processing Area (TPA) is the four-county area with mills that receive timber from Ravalli County. The counties comprising the Bitterroot National Forest TPA are Flathead, Lake, Missoula, and Ravalli counties in Montana (Figure 1). Within the Bitterroot National Forest TPA there are 89 facilities currently operating: 38 log home manufacturers, 21 sawmills, 14 post and small pole plants, 13 log furniture manufacturers, and three veneer and plywood facilities. Additionally, a pulp mill and particleboard plant are located in Missoula County, and a medium density fiberboard plant is located in Flathead County. The use of roundwood is discussed in the Region One report.

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 Bitterroot National Forest TPA is 116,216 thousand cubic feet (MCF), with slightly more than 81 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	1,130	<7 in	1,130
7-9.9 in	11,547	7-9.9 in	44,340
10+ in	82,008	10+ in	384,119
Total	94,685	Total	429,589

Mills in the Bitterroot National Forest TPA are currently using about 94,685 MCF of timber annually (Table 1). Slightly less than 87 percent (82,008 MCF) of the volume processed in the TPA is composed of trees with diameter at breast height (dbh) $\geq 10''$. About 12 percent (12,677 MCF) of the volume processed comes from trees 7.0 - 9.9'' dbh, while slightly more than 1 percent (1,130 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 of the size classes. 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 ≥ 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 ≥ 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	4,449	<7 in	4,449
7-9.9 in	25,677	7-9.9 in	98,600
10+ in	86,090	10+ in	424,223
Total Capacity	116,216	Total Capacity	527,271

* 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 74 percent (86,090 MCF) of the 116,216 MCF of existing capacity in the Bitterroot National Forest TPA is not capable of efficiently utilizing trees < 10 ” dbh (Table 2). Slightly more than 30,000 MCF of timber-processing capacity is capable of utilizing trees < 10 ” dbh, and most 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 going unused. About 25 percent of capacity in the < 7 ” dbh category is currently utilized to process trees < 7 ” dbh, and slightly less than 45 percent of capacity in the 7 - 9.9” dbh category is being used to process trees 7 - 9.9” dbh. More than 12,600 MCF of capacity capable of using trees 7 - 9.9” dbh are used annually to process trees ≥ 10 ” dbh.