

# Impacts of the 2000 wildfires on Montana's forest industry employment

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## Abstract

The wildfires of 2000 impacted about 600,000 acres of Montana's forests, destroyed homes, and disrupted lives, yet overall impacts on forest industry employment were minimal. Declining production and sales of wood products were primarily due to weaker U.S. and global economies, high electricity prices, and weak markets, rather than wildfires. Forest closures during the fire season halted timber harvesting and recreational activities. However, many workers remained employed in fire suppression or related activities. Despite minimal impacts on industry employment in 2000, extensive threats remain until existing hazard is addressed at a strategic level.

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During the 2000 wildfire season, more than 4,000 separate fires burned 1.1 million acres in the northern Rocky Mountains. In Montana, fires burned 597,907 acres that year, with fires in and around the Bitterroot National Forest accounting for 49 percent of that total (NIFC 2002). Fires began in early June and continued through mid-September. Depending on location and conditions, forests were closed to all uses for 4 to 6 weeks during the summer of 2000. Restrictions were lifted after rains quelled the largest of the fires in September.

Immediate effects of the 2000 wildfires included the destruction of homes and cabins, evacuation of people from their homes, cancellation of recreational activities and losses to the tourism industry, postponement or cancellation of timber sales, and health impacts (Bitterroot National Forest 2000). Among the multitude of longer-term ef-

fects of the fires were massive mudslides and flooding; road, trail, and soil erosion; fish and wildlife kills; changes in forest and grassland community structures; invasion by non-native plants; and loss of commercial timber and agricultural infrastructure.

Potentially positive effects of the fires included temporary employment of people involved with firefighting and rehabilitation efforts, availability of timber through salvage operations on various

ownerships, and natural forest fuel reduction in areas experiencing lower-severity burns.

To better understand the effects of the fires, the University of Montana's Bureau of Business and Economic Research estimated the 2000 fire season's impacts on Montana's forest industry sales and employment.

## Montana's forest products industry and fire impacts

Montana's forest products industry is a combination of activities, including harvesting, hauling, and processing timber, and associated forest management activities. Based on a census conducted in 1999, there were about 220 timber-processing or primary forest products plants operating in Montana, in addition to several hundred logging contractors. Processors included: 75 house log and log home plants, 73 sawmills, 29 post-and-pole plants, 25 log furniture manufacturers, 4 plywood plants, 2 cedar products plants, 1 medium-density fiberboard plant, 1

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particleboard plant, 1 pulp and paper mill, and 9 other facilities (Keegan et al. 2001b).

In 1999, immediately preceding the severe fire season of 2000, these plants manufactured products valued at \$1.3 billion free on board (f.o.b) the producing mill (Keegan et al. 2001a). Wood markets in 1999 and early 2000 were generally high, with a strong U.S. and global economy. However, wood products prices began to decline in March 2000, reached very low levels by the beginning of the fire season, and remained low for the rest of the year (Fig. 1). Declining prices were due to the weaker U.S. and global economy, high worldwide production, and a strong U.S. dollar. Dramatic increases in electric rates for mills purchasing electrical power on the spot market also contributed to production curtailments (Keegan et al. 2001a). Other factors – weak markets, high electricity prices, and the closure of a large sawmill – rather than fire impacts, were responsible for a decline of \$200 million in total sales from Montana producers in 2000 (down to \$1.1 billion). These other factors also had a greater impact on most sectors of the forest products industry than did the fires.

### **Statewide impacts of 2000 wildfires on employment**

To estimate employment and labor income in the forest products industries, we examined three industrial groups that closely correspond to the forest products industry. These classifications, as defined by the U.S. Office of Management and Budget, are forestry and forestry services, lumber and wood products, and paper and allied products. Based on these three classifications, Montana's forest products industry actually showed an increase in employment and labor income from 1999 to 2000. Employment in forestry and forestry services, lumber and wood products, and paper and allied products increased from 10,600 workers in 1999 to 10,740 workers in 2000. Worker earnings increased from \$337 million in 1999 to \$352 million in 2000. This represents a 4.5 percent increase in workers' earnings. Inflation in 2000 was about 2.0 percent.

One sector, forestry services, seems to have benefited from the wildfires of 2000. Employment increased by nearly 240 workers, from 912 workers in 1999 to 1,150 workers in 2000, and income to

workers was up – from \$5.7 million to \$7.4 million. A significant proportion of this increase was very likely associated with fire suppression and restoration work. According to the Bitterroot National Forest (2000), "... the Forest Service and rehabilitation efforts employed hundreds of local individuals, many of them small contractors, during and after the fires."

Paper, which consists primarily but not entirely of a linerboard facility in Missoula County, employed about 800 workers in both 1999 and 2000, with no measurable impact from the fires. The linerboard (pulp and paper) plant did curtail operations beginning in late 2000, but that was due primarily to extremely high electricity prices.

The negative impacts of the wildfires were concentrated in the lumber and wood products segments. This is the largest of the three segments in Montana and includes activities such as logging, processing of timber into products like lumber and plywood, and further processing of lumber and other primary products into secondary wood products (e.g., trusses or door and window parts). This segment employed 8,880 workers in 1999 and 8,786 in 2000.

### **Logging**

Because logging consists of a large number of small operators and a large number of self-employed workers it was necessary to use a number of sources to describe total employment and impacts on logging employment and workers compensation. A comparison of total employment from several databases indicates approximately 2,000 self-employed lumber and wood products workers in Montana in 1999 and 2000 (FIDACS 2002, MMIS 2002, REIS 2002, State of Montana 2002). Approximately 200 of these self-employed workers were in timber processing and 1,800 were in logging. In 1999, there were 1,220 wage and salary workers in logging. Including the self-employed, there were an estimated 3,000 workers in Montana's logging industry.

Examining the wage and salary component of logging employment, there was an increase of 35 workers from 1999 to 2000, from 1,220 to 1,255 (State of Montana 2002). However, the increase was due to additional logging activity early in the year when lumber prices were relatively high. Forest closures led to restrictions on logging in

various parts of the state for 4 to 6 weeks during the summer, and during part of that time there was a total cessation of logging. This means that for at least several weeks of 2000, the entire logging workforce was not actively logging in Montana. Employment data indicate that even though logging was not taking place, the majority of the logging workforce remained employed, most likely in firefighting or in non-harvesting activities like equipment maintenance.

Compared to 1999 wage and salary data, the year 2000 showed a small employment decline in July (25 workers) and more substantial declines in August (83 workers) and September (223 workers). Assuming the self-employed segment of the logging industry was impacted to the same degree as the wage and salary sector, total declines in the fire-impacted months would be 60, 254, and 530 workers, respectively. Expressing these temporary declines as logging workers for a full year, the decline would be approximately 70 workers, and losses in workers' earnings would be approximately \$2.2 million.

While not to minimize these declines or the real impacts on workers and businesses in the logging industry, it is clear that most loggers were able to remain employed in some capacity during the fires. The decline is approximately 2 percent of Montana's logging workforce. It is possible that some of the declines in logging in 2000 were due to poor market conditions. However, July through December is a period when logging activity is typically high. Even in years of weak markets, there has historically been little decline in logging activity during these months (State of Montana 2002). It was therefore assumed that the decline was attributable to disruptions caused by fires.

### **Timber processing**

Estimates of statewide impacts of the 2000 fires on Montana's timber processors were developed primarily from survey data and follow-up interviews with mill operators and managers. Quarterly surveys done by the Bureau of Business and Economic Research collect month-to-month information on production, number of production workers employed, and wages paid to production employees from mills that account for more than 95 percent of the timber processed in Montana (CURFOR 2002).

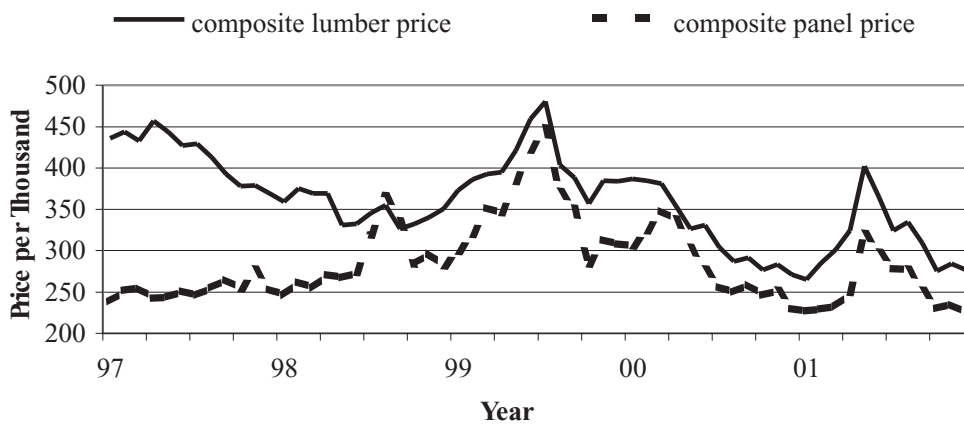


Figure 1. — Composite lumber and construction panel prices, 1997 to 2001 (Random Lengths 2001).

Minor changes were evident in all sectors of the wood products industry, but the most noticeable differences between 1999 and 2000 were in the lumber and plywood sectors, which process more than 95 percent of the state's timber.

The last half of 2000, when markets were bad and the wildfires occurred, was a tough period for Montana's wood processors. The major factor affecting the statewide industry, however, was the market situation, not wildfires (Fig. 1). Few mills indicated curtailments due specifically to the wildfires; most attributed declines primarily to market conditions. Although impacting as many as 700 production workers for several days, the total number of worker-days lost at Montana mills due to the fires of 2000 was relatively small. When adjusted to full-time equivalent (FTE) employees (240 worker-days per year), these curtailments equal only 15 to 20 FTEs. Those 15 to 20 workers represent a decline in annual worker earnings of approximately \$600,000. Put into perspective, these curtailments and declines equal less than 1 percent of employment and worker earnings in Montana's timber-processing industry.

### Conclusions

The wildfires of 2000, while quite destructive, had relatively minor negative impacts on Montana's wood products industry. Low wood products prices and high electricity rates affected the industry more strongly during and following the 2000 fire season. However, the slight

declines in Montana's wood products sales, employment, and worker earnings caused by the 2000 wildfires belie the substantial fire hazard that still exists in the state.

Increasingly, severe fire seasons threaten to detrimentally impact the forest products industry as well as other sectors of Montana's economy, like recreation and tourism. If catastrophic fires become larger and more frequent, industrial and private timberlands, which provide the majority of Montana's timber (Keegan et al. 2001b), could be impacted, thus reducing short and long-term timber inventory. Federal agencies, which provide substantial recreation opportunities and about 15 percent of the state's timber, could face not only loss of commercial timber and increasing fire suppression and rehabilitation costs but also growing public dissatisfaction, as more acres are closed because of fires or damage related to fires.

On the other hand, dealing with Montana's fire hazard in an ecologically sound manner has the potential to create economic benefits for Montana's wood products industry, forestland owners, and other Montanans who rely on the forests for recreation and tourism-related income. Forest management regimes that recover some merchantable timber have the potential to sustain both Montana's forests and the wood products industry, while reducing the threat of another fire season like 2000 (Keegan et al. 2004).

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