



Labovitz School
OF BUSINESS AND ECONOMICS

Bureau of Business and
Economic Research

Consulting Report

The Economic Impact of Minnesota's Forestry and Forestry-Related Industries

June 2010

For



Minnesota

Department of Natural Resources

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UMD Labovitz School of Business and Economics

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Preliminary

Executive Summary

Minnesota's forestry and wood-products industry constituted over \$x billion in output value in 2008, and provided nearly xxx jobs. While secondary wood manufacturing (e.g., cardboard-box production) provides the most employment opportunities, the primary wood-manufacturing sectors (e.g., saw mills and paper mills) have higher employment multipliers. [Primary wood-manufacturing sectors are, on average, higher than other average multipliers of industries in the state?]

Multipliers

Summary tables

Source: IMPLAN	<i>Direct Effect</i>	<i>Indirect Effect</i>	<i>Induced Effect</i>	<i>Total</i>
Value Added	\$4,953,374,000	\$2,968,811,000	\$3,102,449,000	\$11,024,630,000
Output	\$13,338,620,000	\$5,911,518,000	\$5,353,923,000	\$24,604,060,000
Employment	65,683.4	34,597.6	42,911.3	143,192.3

Project Description

Deliverable: "An economic impact analysis of forest products industries and related sectors in order to quantify the economic importance of these sectors in terms of employment, value of shipments, contribution to gross state product, and taxes paid."

DNR impact precedents for reporting this impact

This project assesses the economic impact of the forestry industry in the State of Minnesota. The Minnesota Department of Natural Resources (DNR) has asked the University of Minnesota Duluth Labovitz School Bureau of Business and Economic Research (BBER) to estimate this impact using state and county data for impact models for value added, employment, and output measures.¹ The DNR asked BBER for baseline primary and secondary forest industry sector modeling to assist with the DNR's update of their 2004 "Economic Impact of Forest Industries" report.

Study Region

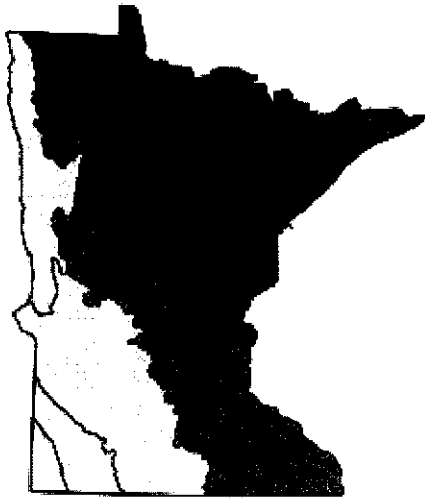
[regions, breakout?]

[sectors tend to be regionally concentrated: Timber Management and Harvesting in the xx region; Primary Wood Manufacturing in the xx region; and Secondary Wood Manufacturing in the xx region???.]

¹The BBER has previously studied and reported the economic impact of forestry construction and operations in such projects as *The Economic Impact of Declines in Forestry-Related Industries in Minnesota, Wisconsin, and a Three-State Region, 2006*; *East Central Minnesota: Social and Economic Trends and Implications, Forestry Analysis 2004*; and *Forestry Bottleneck Analysis 2002*. These reports and others of interest for this industry from the Labovitz School's research bureau are available at <https://lsbe.d.umn.edu/bber.php>.

Subsections are units within Sections that are defined using glacial deposition processes, surface bedrock formations, local climate, topographic relief, and the distribution of plants, especially trees. Minnesota has 26 subsections.

- Prairie parkland province
- Tall grass aspen parklands province
- Eastern broadleaf forest province
- Laurentian mixed forest province



<http://www.dnr.state.mn.us/ecs/index.html> 5/26/2010

Forestry and Forestry-Related Industries Definitions

Sectoring

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Primary and Secondary Sectors for Forest Related Industries

Primary Sectors

- 95 Sawmills and wood preservation
- 96 Veneer and plywood manufacturing
- 97 Engineered wood member and truss manufacturing
- 98 Reconstituted wood product manufacturing
- 99 Wood windows and doors and millwork manufacturing
- 100 Wood container and pallet manufacturing
- 102 Prefabricated wood building manufacturing
- 103 All other miscellaneous wood product manufacturing
- 104 Pulp mills
- 105 Paper mills
- 106 Paperboard Mills
- 107 Paperboard container manufacturing
- 108 Coated and laminated paper, packaging paper and plastics film manufacturing
- 109 All other paper bag and coated and treated paper manufacturing
- 110 Stationery product manufacturing
- 111 Sanitary paper product manufacturing
- 112 All other converted paper product manufacturing
- 355 truck transportation

Secondary Sectors

- 19 support activities
- 15 Forestry, forest products, and timber tract production
- 16 Commercial logging
- 295 kitchen cabinets
- 297 upholstered wood furniture
- 301 wood office furniture
- Secondary????

Modeling

IMPLAN

[IMPLAN began as a forestry modeling concept]

Inputs to the Model

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Minnesota timber harvest

“WHO BENEFITS FROM PUBLIC TIMBER SALES?”

- These public timber sales have a significant economic impact on local, regional and state economies. Over the past decade, these programs have: generated timber sales revenues of over \$85,000,000; generated \$450,000,000 of economic activity; and provided over 7,950 jobs.

In the case of state Permanent School Trust Fund lands, the profits from timber sales are deposited into a trust and used to help fund our schools.”

<http://www.minnesotaforests.com/resources/pdfs/publictimbersales.pdf>

Preliminary

Impact Findings

Source: IMPLAN	<i>Direct Effect</i>	<i>Indirect Effect</i>	<i>Induced Effect</i>	<i>Total</i>
Value Added	\$4,953,374,000	\$2,968,811,000	\$3,102,449,000	\$11,024,630,000
Output	\$13,338,620,000	\$5,911,518,000	\$5,353,923,000	\$24,604,060,000
Employment	65,683.4	34,597.6	42,911.3	143,192.3

Employment

<i>Industry</i>	<i>Direct</i>	<i>Indirect</i>	<i>Induced</i>	<i>Total</i>
Transport by truck	38,479.6	2,502.0	356.1	41,337.6
Wood windows and doors and millwork manufacturing	9,427.5	787.4	12.5	10,227.4
Food services and drinking places	0.0	990.3	4,491.9	5,482.2
Employment services	0.0	3,909.0	805.7	4,714.7
Wholesale trade businesses	0.0	3,386.9	1,309.4	4,696.2
Paperboard container manufacturing	4,319.5	165.6	16.0	4,501.1
Paper mills	3,128.1	220.8	5.8	3,354.8
Real estate establishments	0.0	981.6	1,892.2	2,873.7
Couriers and messengers	0.0	2,387.8	184.5	2,572.3
Private hospitals	0.0	0.0	2,041.7	2,041.8
Offices of physicians, dentists, and other health practitioners	0.0	0.0	2,011.6	2,011.6
Commercial logging	0.0	1,956.1	3.4	1,959.5

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Services to buildings and dwellings	0.0	1,231.0	474.9	1,705.8
Nursing and residential care facilities	0.0	0.0	1,663.2	1,663.2
Retail Stores - General merchandise	0.0	116.3	1,482.9	1,599.2
Wood container and pallet manufacturing	1,328.3	185.6	9.7	1,523.6
US Postal Service	0.0	1,308.0	203.7	1,511.7
Retail Stores - Food and beverage	0.0	105.3	1,396.5	1,501.9
Coated and laminated paper, packaging paper and plastics film manufacturing	1,368.6	23.1	4.3	1,396.1
Engineered wood member and truss manufacturing	1,365.3	9.4	3.0	1,377.7
Stationery product manufacturing	1,269.8	5.4	1.9	1,277.2
Management of companies and enterprises	0.0	1,071.0	194.9	1,265.8
Civic, social, professional, and similar organizations	0.0	383.7	826.0	1,209.6
Retail Nonstores - Direct and electronic sales	0.0	130.9	1,073.2	1,204.2
Transport by truck	38,479.6	2,502.0	356.1	41,337.6
<i>As well as additional part-time jobs in another xx various sectors of the economy ...</i>				
Total				

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Conclusions

the economic importance of these sectors
relative importance compared to other sectors
trend data?

Preliminary

References

Minnesota Forest Industries.

<http://www.minnesotaforests.com/informationcenter/statisticsandresearch/>

U.S.D.A. Forest Service, Northern Research Station. <http://www.nrs.fs.fed.us/>

Minnesota Forest Resources Council. <http://www.frc.state.mn.us/>

Forestry Bottleneck Analysis: Summary and Technical Report September 2002 UMD,
http://www.frc.state.mn.us/resources_documents_research.html

Minnesota's Forest Resources, December 2008 , Department of Natural Resources
Division of Forestry. http://files.dnr.state.mn.us/forestry/um/forestresourcesreport_08.pdf

Appendix

Compare: "Value-Added Economic Impacts of Timber" from the DNR
<http://www.dnr.state.mn.us/forestry/um/index.html>

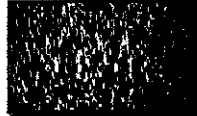
For more information, contact the Minnesota Department of Natural Resources, 500 Minnesota Street, St. Paul, MN 55103. Phone: 612-297-2100. Fax: 612-297-2101. E-mail: dnr@state.mn.us. Website: www.dnr.state.mn.us. The Minnesota Department of Natural Resources is an Equal Opportunity Employer. Minorities and women are encouraged to apply.

Value-Added Economic Impact of Timber Harvested in Minnesota



Minnesota Department of Natural Resources

Value of Timber Production and Forest Management



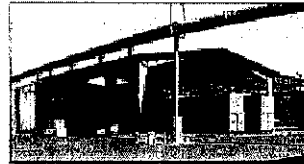
Good forest management is important in all Minnesota. Wood is a renewable resource and harvesting is one important management tool used by foresters as part of the process of maintaining forest health. From the early to regenerate young, vigorous forests, wildlife can benefit from sustainable timber harvest and forest management too.

One of the numerous timber harvest and forest management are important, however,



is the tremendous positive impact they have on the state's economy. Wood products manufacturing is a major contributor to the state's wealth, and much of the raw material driving the industry is from Minnesota.

To better evaluate the impact of forest management and timber production on the state's economy, the Minnesota Department of Employment and Economic Development (DEED) and Natural Resources (DNR)



recently completed a study. This study found that each dollar of timber sold generates approximately \$41.60 of value-added economic activity in the state's economy. Included in the \$41.60 figure is \$2.72 in income and sales taxes generated.

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Value-Added Economic Impacts of Timber

Economic Activity Generated by \$1 of Timber Sold

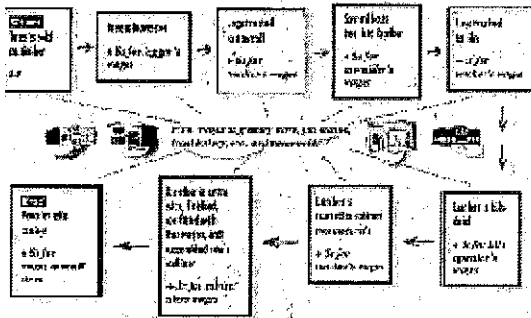
The dollar value is multiplied by the ratio of value added to economic activity supported by \$1 of timber sold. A transformation of the end product is a value added activity. The value added is the value of the product minus the value of the materials used to produce it.

The total value added is the sum of the value added in each of the stages of production. These "value added" impacts are added to the value added in the other sectors of the economy supported by the timber products industry. The value added in the other sectors is the value added in the rest of the economy.

Adding the value added contribution of the value added in each of the stages of production and the value added in the other sectors of the economy generates the total value added contribution to Minnesota's economy supported by \$1 of timber sold.

The impact of the TOTAL value added products, value added by products, is \$41.00 per dollar of timber sold. Clearly, the long-term benefits of the timber products industry are significant. The value added in the other sectors of the economy supported by the timber products industry is \$40.00 per dollar of timber sold.

NOTE: Total value added by the timber products industry is \$41.00 per dollar of timber sold.



Why is the Wood Products Industry so Important to Minnesota's Economy?

Forest Product Manufacturing is a Wealth-Building Industry

The importance of maintaining a manufacturing base for the state's economy cannot be overstated. The value added impact of service industries such as tourism, while important, is much smaller than the impact from manufacturing.

Wood Products Are an Economic Foundation for Many Rural Communities

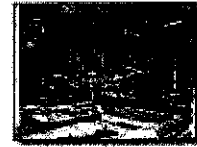
Many rural communities in Minnesota such as the local grocery store, hardware store, bank, insurance agent, and auto repair shop all depend on the support of the wood products industry. Much of the state's rural infrastructure has been built or upgraded because of the forest products industry. The infrastructure benefits are the roads and other important facilities as well. The wood products industry helps to provide higher wage jobs to many other non-manufacturing occupations.

Wood Drives Other Sectors of the Economy

Many other important industries depend on wood to set them up in employment figures for the wood industry. Examples include the printing and book-binding industries.

The Investments in Forest Management Pay Off

Forest management and timber production investment (such as landfilled reforestation) tend to be long-term by their very nature. For example, it takes a minimum of 20 years for a red pine plantation to reach a high producing, much valuable timber. It is clear from the study, however, that if investments in forest management will yield a significant long-term economic payoff to Minnesota's citizens as well as environmental benefits. In addition to the other benefits, a gain from the state's forests, like tourism, fishing and recreational activities and communities dependent on the economic benefits they provide. The question you see timber being harvested, think about the \$3-1.00 in economic activity supported by each dollar's worth of wood grown in Minnesota.



Minnesota Wood Industry At A Glance – 2008

Annual Economic Impact

- Value of Forest Products Manufacturing Shipments 2007: 6.02-7.2 Billion (estimated)**
- 4th Largest Manufacturing Industry in Minnesota Based on Employment (#1 Computer & Electronic Equipment, # 2 Fabricated Metal Products, #3 Food Manufacturing)*
- Generates 11% of dollars of all manufacturing shipments*
- Value-Added impact attributable to Minnesota timber = \$41.60 per dollar of timber sold, and 4.3 billion dollars total that stays in Minnesota *

Employment

- 37,850 Employees (Primary Processing [including logging] = approximately 17,440; Secondary Manufacturing = approximately 20,410).** Indicators suggest a 9% decrease in 2008 employment.
- \$1.6 Billion in wages paid** Indicators suggest an estimated 16% decrease in 2008.
- Important Industries Include:** Pulp & paper, OSB, Cabinets and Cabinet Parts, Window & Door Components (MN # 2 in U.S.), Store Fixtures, Office & Residential Furniture, Pallets, Crating & Pallet Parts, Millwork, Wood Shavings (for poultry industry).
- Non-Traditional Industries Dependent on Forestry:** Balsam Boughs for Wreath Industry (annual sales of \$23 Million+), Wood "flour" energy for taconite industry, 6 co-generation facilities utilizing wood for energy production.

Industry

- 5 Pulp and Paper Mills
- 3 Recycled Pulp & Paper
- 3 Hardboard & Specialty
- 2 Oriented Strand/Structural Board
- 500+ Sawmills
- 150 Associated Specialty Businesses
- Over 800 Secondary Manufacturers

Annual Volume of Timber Harvested

- Pulpwood = 2.44 Million (2006)
- Sawlogs & Specialty = 272 Million Board Feet (2004). Included in this total are specialty items:

-Veneer = 8.0 Million Board Feet (domestic) = .9 Million Board Feet (exported) -Chips = 8,000 Cords (fuel & mulch) -Shavings = 11,000 Cords (animal bedding) -Posts & Poles = 12,000 Cords

- Fuelwood = 149,000 Cords live trees from timberland. (2002-03)

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*Minnesota Department of Employment & Economic Development analysis **Minnesota Forest Industries estimates based on 2007 data 1.92.53.544.96.277.57.87.776.56.16.976.96.6012345678\$ (Billions)'80'82'84'86'88'90'92'94'96'98'00'02'03'04 (est.)'05 (est.)'06 (est.)'07 (est.)YearValue of Forest Products Manufactured in Minnesota



“Forest products annual economic impact: \$6-7 billion”
<http://www.dnr.state.mn.us/faq/mnfacts/forests.html>

“WHO BENEFITS FROM PUBLIC TIMBER SALES?”

- These public timber sales have a significant economic impact on local, regional and state economies. Over the past decade, these programs have: generated timber sales revenues of over \$85,000,000; generated \$450,000,000 of economic activity; and provided over 7,950 jobs.

In the case of state Permanent School Trust Fund lands, the profits from timber sales are deposited into a trust and used to help fund our schools.”

<http://www.minnesotaforests.com/resources/pdfs/publictimbersales.pdf>

Minnesota Forest Products Industry Statistics --2008

Number of Employees		
Pulp, Paper, Board		4,145
Converted Paper Products		8,288
Lumber and Wood Products		12,157
Wooden Furniture and Fixtures		9,121
Logging		2,500
Total Employees in Minnesota		36,211
Wages Paid to Forest Industry Employees		
Pulp, Paper, Board Plants		\$294,588,219
Total Wages Paid (All)	\$1.674 billion	
Value of Forest Products		
Pulp and Paper		\$2,066,460,520
Board		132,938,211
Trusses, Veneer, Other Reconstituted		357,057,442
Wood Products		
Sawmills (Lumber, Post, Poles,		57,520,241

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Pilings)	
Wood Preservation	86,826,153
Pulpwood Shipped Out of State	3,750,000
Fuelwood	20,000,000
Christmas Trees	30,000,000
Mill By-Products	12,398,763
Converted Paper Products	2,588,074,245
Wooden Furniture and Fixtures	1,274,293,916
Pallets, Containers, Millwork, Other	1,981,762,110
Misc Wood Products Total	
	\$8,611,081,601

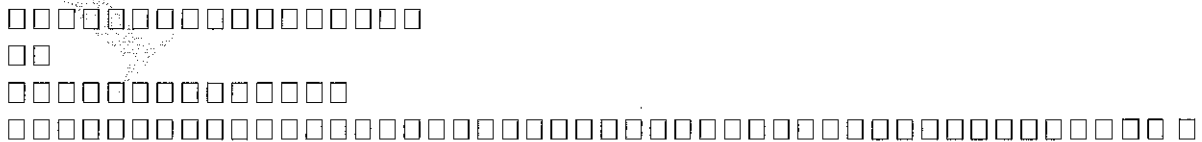
<http://www.minnesotaforests.com/resources/pdfs/factbook.pdf>
 U.S. Forest Service and MN DNR

“Minnesota Forest Industries’ member companies are located throughout Minnesota, as shown on the facing page. But the industry’s \$8.6 billion economic impact stretches even further, because from Aitkin to Zumbro Falls, nearly 300 Minnesota cities are home to businesses from which the forest products industry purchases goods and services.

Recreation

More than 90% of forest road use in Minnesota is by people wanting to visit and enjoy the forest. That’s an added benefit the forest products industry is pleased to provide, because forest roads are really created to help improve the harvest and transport of trees, while also providing advantages for fire fighting.

The more than 36,000 people in Minnesota’s forest products industry make paper for books, magazines, brochures, computer printers and more. We make lumber, siding panels and engineered wood products for building homes, including oriented strand board. We also make industrial packaging for many commercial applications. You’re literally surrounded by fine products from Minnesota’s forests, including everything in this photo!



It’s no coincidence that Minnesota’s forests are healthy and vibrant. They are carefully managed to ensure the proper balance of harvesting, regrowth and habitat maintenance by forest

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professionals who make decisions based on experience and science. Minnesota leads the nation in sustainable forestry. Wood that's harvested following stringent guidelines is formally certified by independent third parties as sustainable. This means that our state forestlands are being carefully managed to balance the perpetual growing and harvesting of trees with the long-term protection of wildlife, plants, soil and water quality. In 2005, the State of Minnesota became the largest public land manager in the U.S. to certify its lands under the Sustainable Forestry Initiative® Program (sfiprogram.org), a comprehensive system of objectives and performance measures that guides responsible forest management. There are more than 7.1 million acres in Minnesota certified under the SFI® Program. Expert loggers. Nearly all of the wood harvested in Minnesota is done by loggers trained in the Minnesota Logger Education Program (mlep.org), who continually enhance their expertise related to technologies, safety, environmental regulations, wildlife and more. The woodland professionals combine proven techniques with modern equipment to take care of the forest. Providing consumers the assurances they want. As more people and companies demand that their forest products come from sustainably managed forests, our state will remain a national leader. Minnesota will continue to prove that maintaining a viable forest products industry and doing the right thing by the environment complement one another.

Cords of wood grown each year: 8.6 million Cords of Wood harvested each year: 3 million. Minnesota grows more than twice as much as is harvested. Source: U.S. Forest Service and Minnesota DNR.”