

# Wisconsin's Forest Industry





**Of Wisconsin's land base, 16 million acres (46%) are productive forest land**



# Forest Industry's Impact in Wisconsin

- The forest industry built Wisconsin's cities in the 1800s
- The forest industry is critical to Wisconsin's economy today





# Forest Industry Impact in Wisconsin

- Why should we care?
  - \$17.9 billion annually
  - add another \$10 billion annually with secondary impacts
  - Employs 60,899
  - \$2.7 billion in employee compensation
- The health of Wisconsin's economy depends upon the health of our industry
- The health of Wisconsin's forests depend upon the health of our industry



# Forest Industry 2009

## **Paper Industry 2009**

- Value of Shipments  
\$13,042,346,000
- Number of employees 32,305

## **Sawmills, Veneer, other 2009**

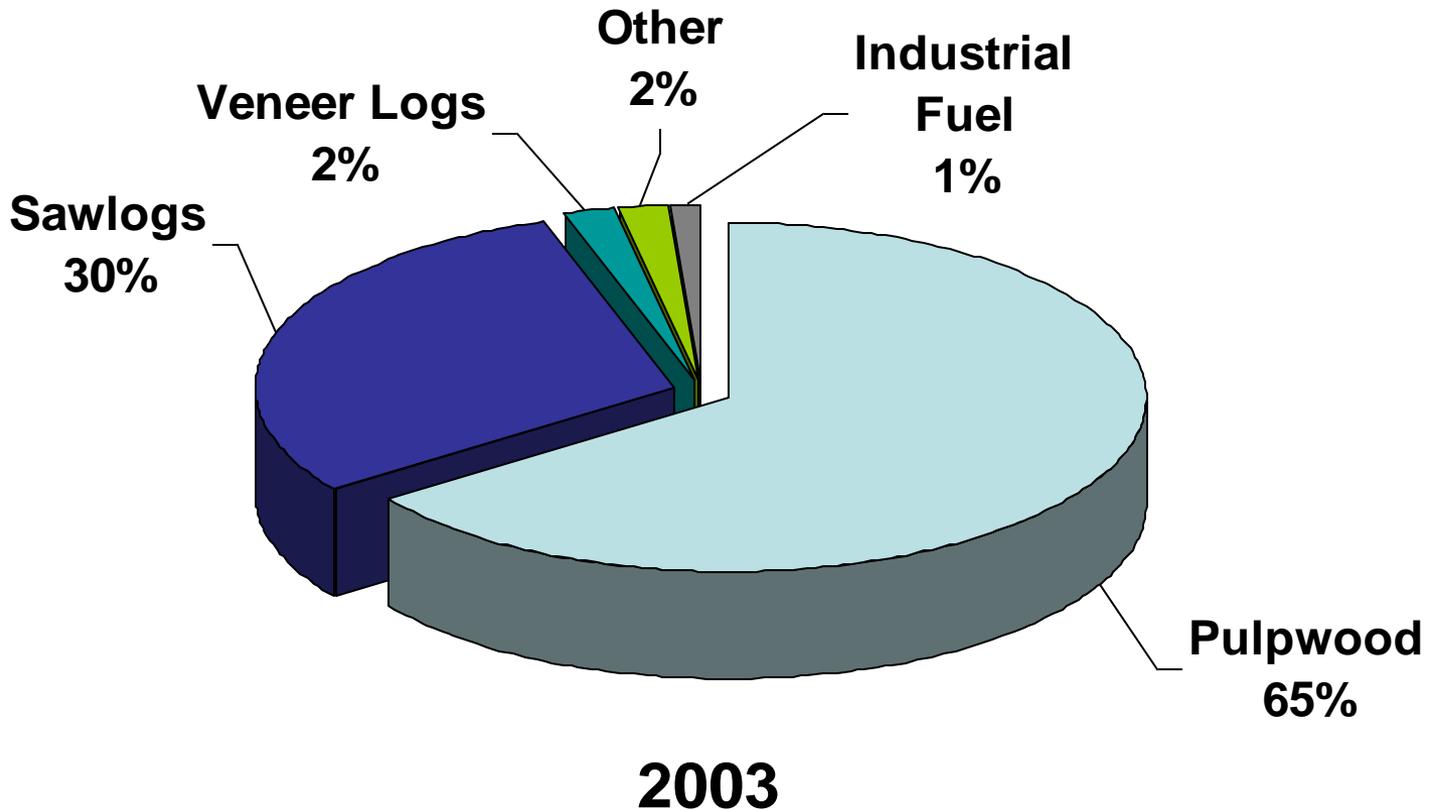
- Value of Shipments \$3,158,995,000
- Number of employees 17,597

## **Furniture est. 2009**

- Value of Shipments \$1,706,181,000
- Number of employees 10,997

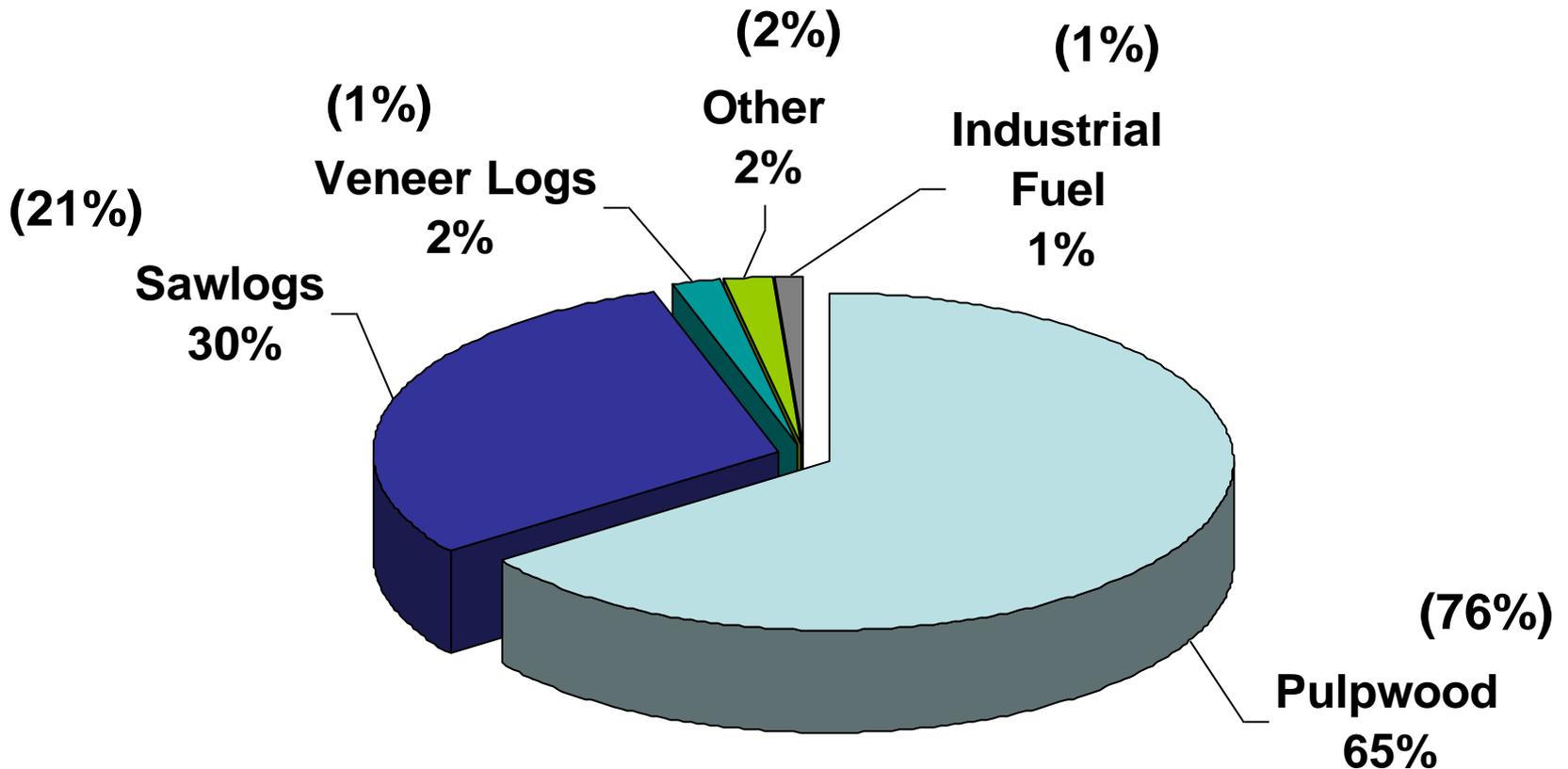
# Traditional Products

## Wisconsin's Wood Products



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(2011 estimates)



Subtle shift in consumption trend is  
deceiving:

Bottom line is a 36% decline in wood  
consumption from 2003!



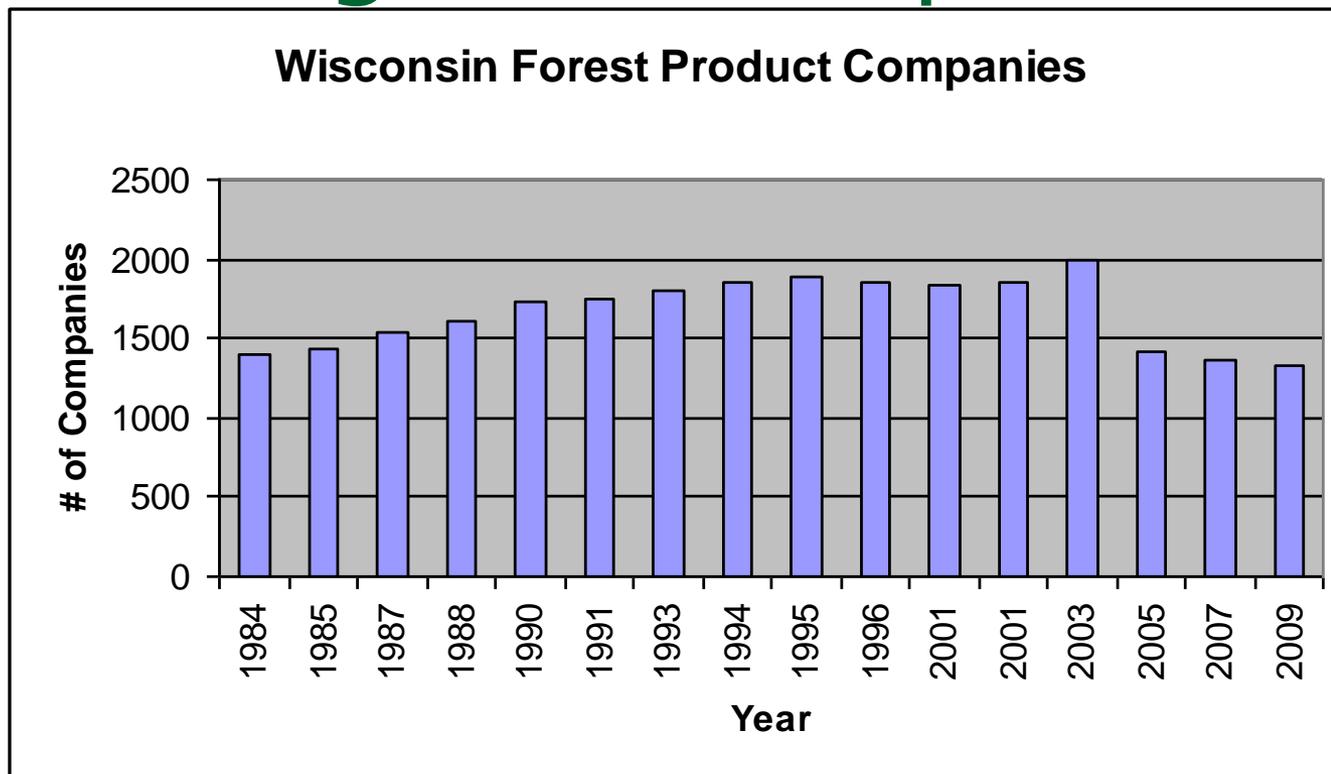
## Estimate of contribution by owner for 2008

Ownership Category	% of 2008 removals	Employees	Total value of shipments (\$1000)
National Forests	5.9%	3616	\$1,063,229
Tribal	4.7%	2871	\$844,121
State	7.8%	4779	\$1,405,337
County	25.5%	15543	\$4,570,425
Industrial	11.4%	6934	\$2,038,853
NIPF	44.6%	27157	\$7,985,556
WI TOTALS	100.0%	60899	\$17,907,522

Wisconsin has more than 1,323 forest product companies



The number of firms have declined due to consolidation and global competition

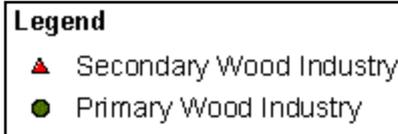
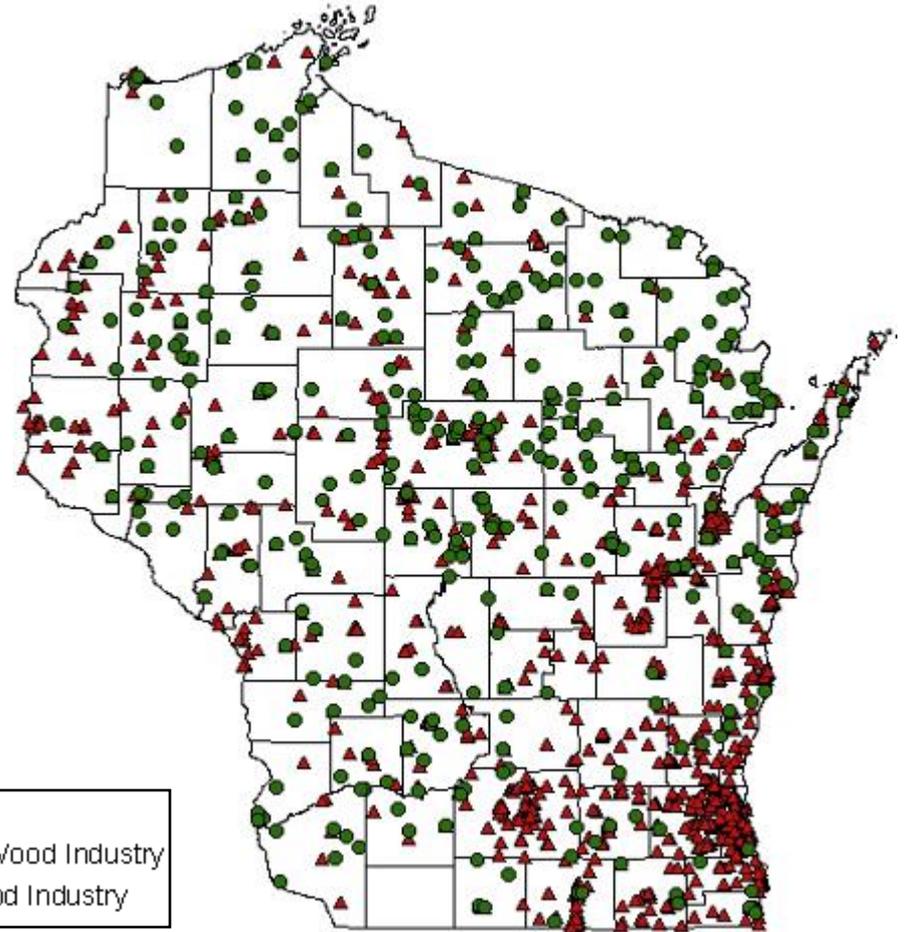




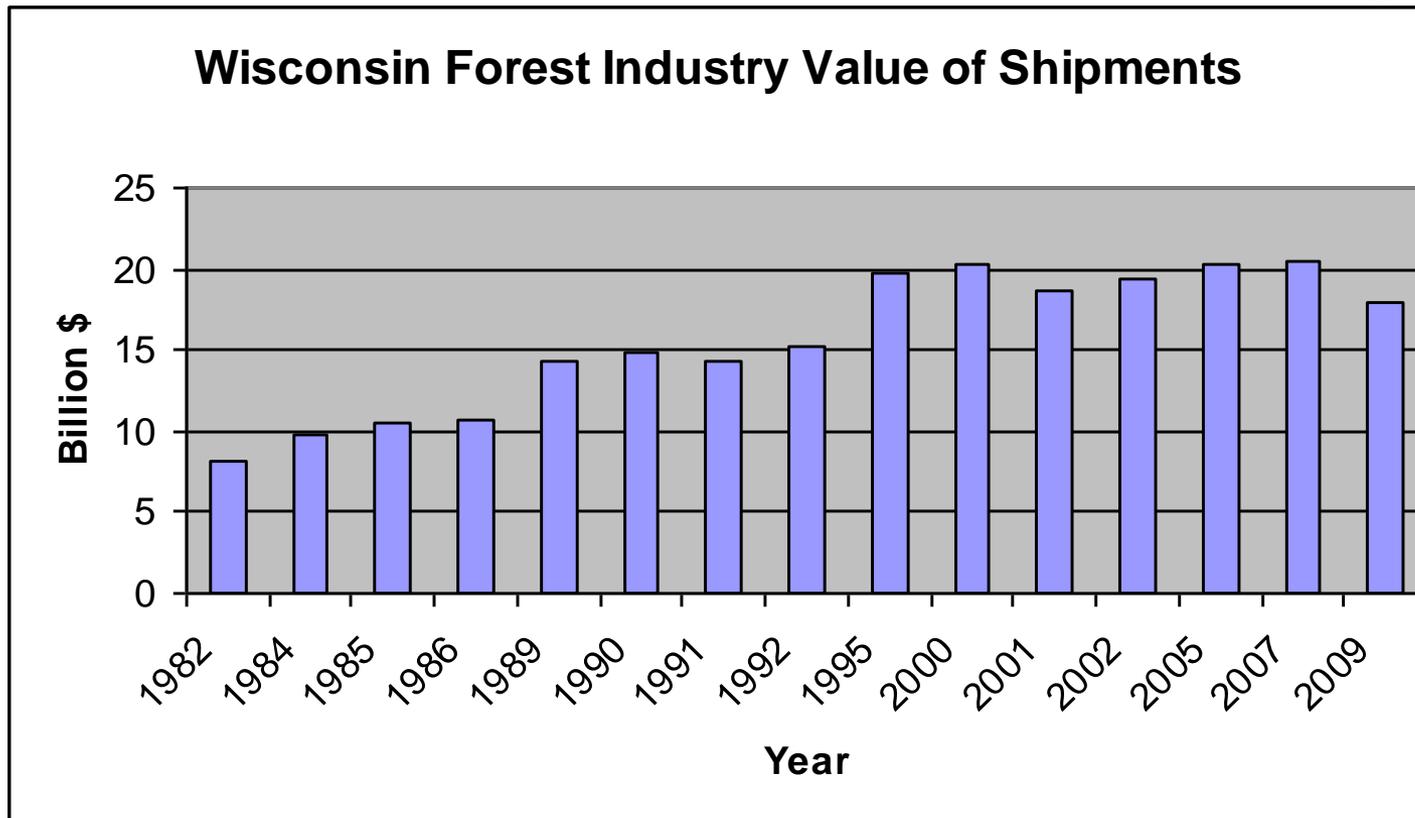
# Timber Trade Patterns

- 92% of the wood harvested in Wisconsin is used by Wisconsin manufacturers
- 6% of the wood harvested goes to Michigan
- Remainder goes to Minnesota and other states

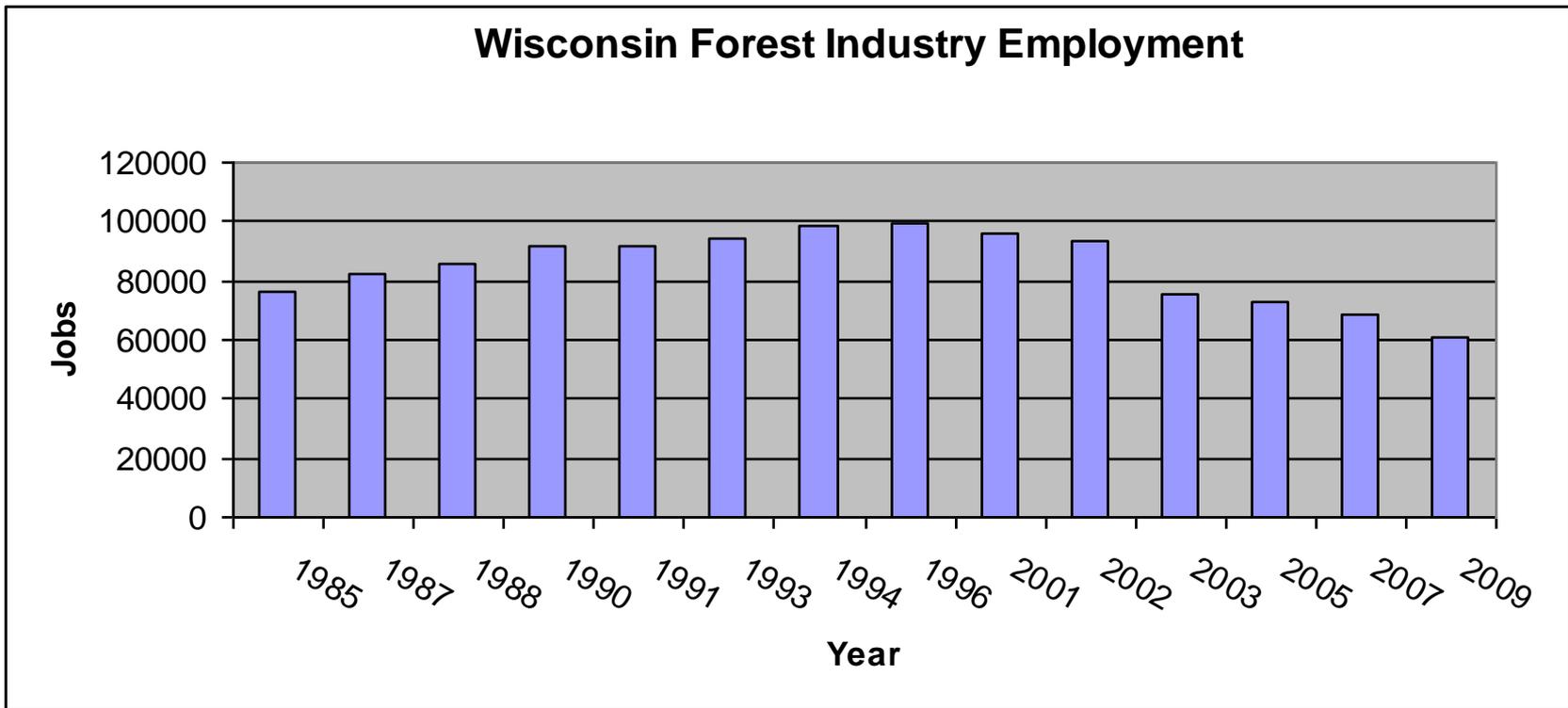
# Forest Product Industry Locations



Value of shipments for Wisconsin forest product companies had started to decline but is now increasing.



# Wisconsin forest industry employment increased until about 2009 and then began declining.

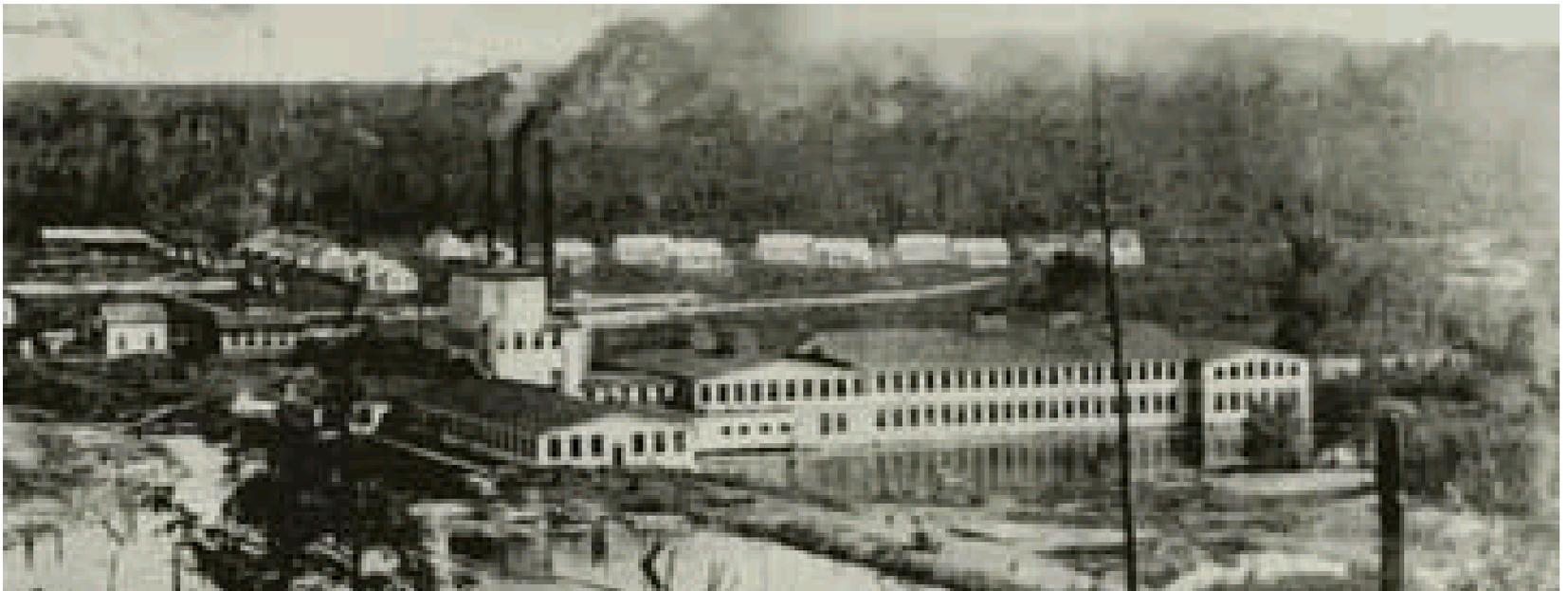


This figure is from County business pattern data prepared by WI DOC and WEDI.



# Pulp and Paper Industry

Wisconsin is the number one paper making state in the nation and has been for 50 years.



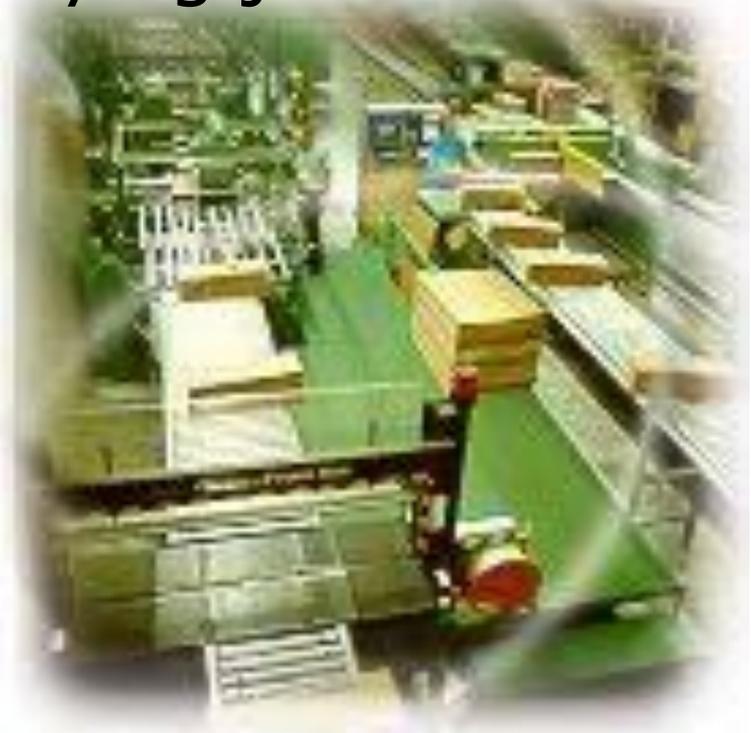


## Pulp and Paper Industry (con't.)

- Annually produce 5.3 million tons of paper and more than 1.1 million tons of cardboard.
- Employs approximately 32,305 people
- The average papermill worker earns \$50,000 annually, compared to an average state wage of about \$34,400

# Pulp and Paper Industry (con't.)

Approximately 4,000 jobs have been lost in the pulp, papermaking and related industries since 2006. The industry is still providing 32,305 good paying jobs in Wisconsin.





# Pulp and Paper Industry (con't.)

- Efforts are being made to help Wisconsin pulp and paper industry improve its competitive edge.
- One example is the help that is being provided to assist the pulp mills to develop bio refining technology which will producing ethanol, hydrogen, and other chemicals.
- This has the potential to double the income for the company.



# **Pulp Mill Conversion to Bio-Refinery**

- Flambeau paper and NewPage each received \$30 million in federal grants to do bio-refining
- Flambeau paper has starting entering into contracts in preparation of construction
- Flambeau still looking for investors

# Global Impact



The secondary forest products market has been hit hardest by globalization.



## Global Impact con't.

- A company in China can purchase US lumber, manufacture furniture and ship it back to the US for **20-30% LESS** than manufacturing it in the US.
- What does the consumer buy?  
Higher priced US furniture or low priced foreign.



# Secondary Wood Using Industry

- In 2002 there were 20,000 people employed in the secondary wood using industry in Wisconsin.
- By 2009 this number had dropped to 11,000 people employed in this industry.
- The companies that are thriving are those that provide service, quality and customization.



# Primary Wood Using Industry

- In 2009 there were 16,000 people employed in the primary wood using industry in Wisconsin.
- The primary wood using industries have been able to find markets globally to make up for the lost domestic markets.
- The companies are striving to remain competitive by investing in technology that improve quality and efficiency.



# Niche Markets

- The nature of existing forest products markets, particularly markets for specialty products, are changing.
- Competition and consumer demand have changed the manner in which firms must invest and market their products to compete within specific market segments.
- Forest product niche markets are increasing to meet that demand.



# Biomass

- At the federal and state level biomass is a high priority for developing transportation fuels.
- UW Madison has received a 130 million dollar grant to develop a center for the development of ethanol from cellulose.
- The interest in forest residues is increasing.
- Soon maybe the 2.4 million dry tons of material left in the woods after timber harvesting will be used for the production of transportation fuels, heat or energy.



# University Wisconsin System

- UW Madison plan to convert it's Charter Street plant to biomass has been cancelled.
- UW Stevens Point is planning a small biomass boiler 16,000 dry tons.
- UW Oshkosh is planning a small gasification system 16,000 dry tons.
- UW Superior is planning a small biomass boiler 10,000 dry tons.



# Proposed Electrical Generation

- Domtar – WE Energies have proposed a 50 megawatt power plant for Rothschild. This would be a combined heat and power plant. With Domtar buying about ½ the steam produced (exhaust from turbine). Procurement of the biomass would be done by Domtar. They are initially talking 500,000 green tons of fuel. Application has been submitted to Public Service Commission.



# Proposed Electrical Generation

- Xcel energy has been approved by the Wisconsin Public Service Commission to convert their Bay Front power plant in Ashland Wisconsin. Currently Bay Front is using 125,000 dry tons of biomass and when the conversion is complete they will be using 250,000 dry tons of biomass. This will be a total of about 40 megawatts. (Source: Xcel energy press releases ) **This project was canceled due cost overrun.**



# Proposed Electrical Generation

- DTE Energy Services Inc. has purchased E.J. Stoneman power plant in Cassville Wisconsin coal fired power plant and is converting it to a 40 megawatts biomass power plant. Using about 340,000 dry tons of biomass. Dairyland Power Cooperative has agreed to purchase all of the power. They are operational.



## More demand

- Verso Paper in Quinnesec, MI has announced it will build a biomass boiler using about 350,000 dry tons per year. A significant portion of the biomass will probably come from Wisconsin.



# **Forest County Potawatomi Tribe**

- The Forest County Potawatomi Tribe proposes renewable energy installations will include: a 1.25 MW biomass combined heat and power facility that will provide heating, cooling and electricity and a biomass consumption of approximately 25,000 green tons.

# Biomass Markets

- In the DNR air quality database there are 2,024 boilers. Included in this number are:
  - ✓ 1,500 natural gas boilers
  - ✓ 120 coal fired boilers
  - ✓ 294 diesel fired boilers
  - ✓ 104 biomass fired boilers





# Wood Pellets

- Pellets need to have a feed stock MC of 10%
- Residential pellets can only contain 1% wood ash, which limits bark content in the feed stock.
- Markets could become saturated as more plants go online.
- Pellets sell domestically for \$140 to \$150 premium bagged a ton.
- Pellets premium bulk \$120 to \$130.
- Pellet industrial grade \$110 to \$130. (if you can sell it)
- Export markets can have prices over \$220 delivered. The cost to deliver is about \$100 per ton.
- Most successful industrial plants make pellets from mill residues which keeps raw material costs low.



# Pellets Plants

Bay Lakes Companies, Oconto Falls

Dejino's, Kenosha and Antigo

Elkhorn Industries, Superior

Green Friendly Pellets LLC, Balsam Lake

Marth Wood Shaving Supply, Marathon and Peshtigo

PJ Murphy, Ladysmith

Performance Wood, Seymour

Agrecol, Evansville (ag pellets)

Great lakes Renewable Energy, Hayward

Indeck Ladysmith LLC, Ladysmith

Gunville, Niagara

Badger Pellet, Sheboygan

Wood Residue Solutions, Montello



# Wood Pellets

- Currently manufacturers in Wisconsin have a production capacity of 379,000 tons of pellets annually from wood residues and paper.



# Conclusion

- Biomass is and will be an increasing product from our forests.
- How long development takes is anyone's guess.
- The general perception of what levels of biomass forests can provide are not the same as reality.
- As this market develops there will be additional new markets that we have not even thought of. (i.e. Using wood pellets as animal bedding.)



# Technical Assistance

- Wisconsin has a strong technical assistance program for the forest industry.
- The DNR Division of forestry, forest product specialists provide direct assistance along with the two UW Extension forest products specialist.
- Help is also available from the USDA-FPL Technology Marketing Unit.



# Technical Assistance (con't.)

- Financial analysis spreadsheets have been developed for primary wood processors to help them make better decisions.
- Industry directories are maintained.
- Custom technical assistance is offered to companies.
- Resource assessment.
- Work shops, etc.



# Summary

- Overall WI is doing better than many other states in retaining forest industries.
- Challenges facing the forest industry.
  - Global competition
  - Slump in the economy
  - Consolidations
- One company closing can devastate a town
- Look for new niche markets



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<http://www.woodindustry.forest.wisc.edu>

<http://dnr.wi.gov/forestry/Publications/#usesof>

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