Marketing and Utilization of Ash in Minnesota

Black Ash Symposium

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Presentation Overview

- Importance of ash utilization
- Brief Minnesota forest resources overview
- Ash resource overview (supply)
- Current ash markets (demand)
  - -Wood industry overview
  - -Ash markets
- Takeaway messages

Why is Utilization of Ash Important?

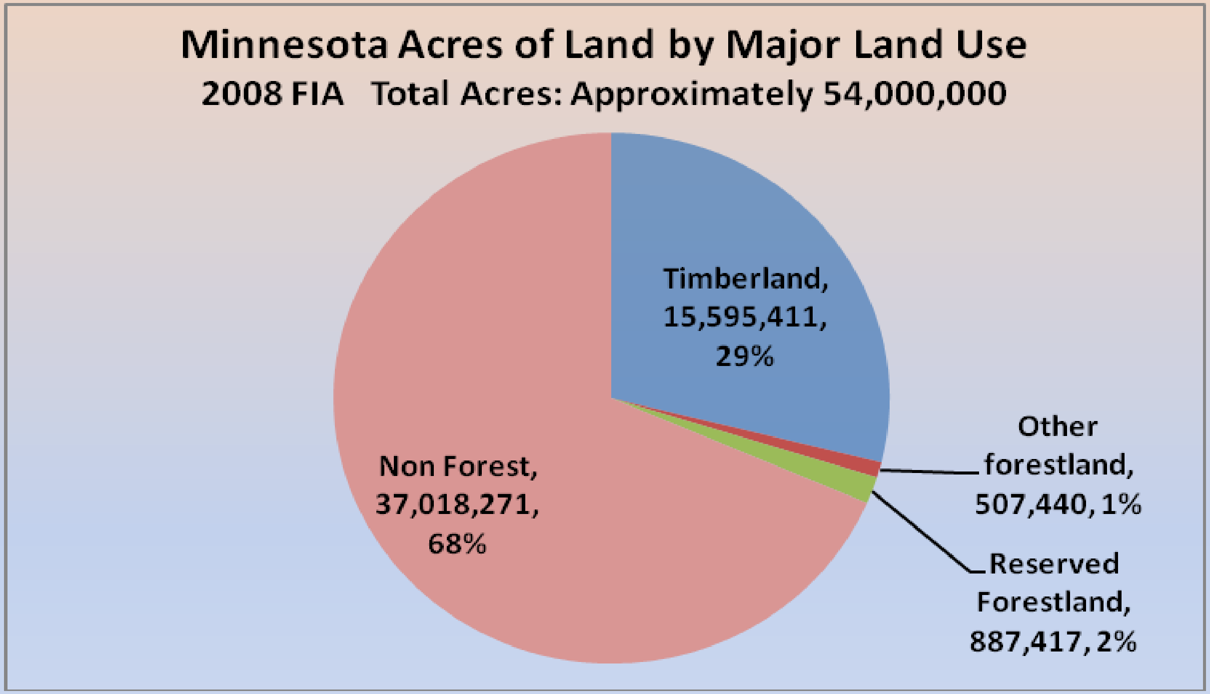
-Markets and utilization can provide a cost-effective means to accomplish management and mitigation work.

-Additional markets with higher end values can enable greater investments in management.

-Economic and employment benefits.

<u>Reminder</u>: A key objective: Limit spread by human transport. The bug can't travel very far each year on its own.

A Brief Minnesota Forest Resources Overview

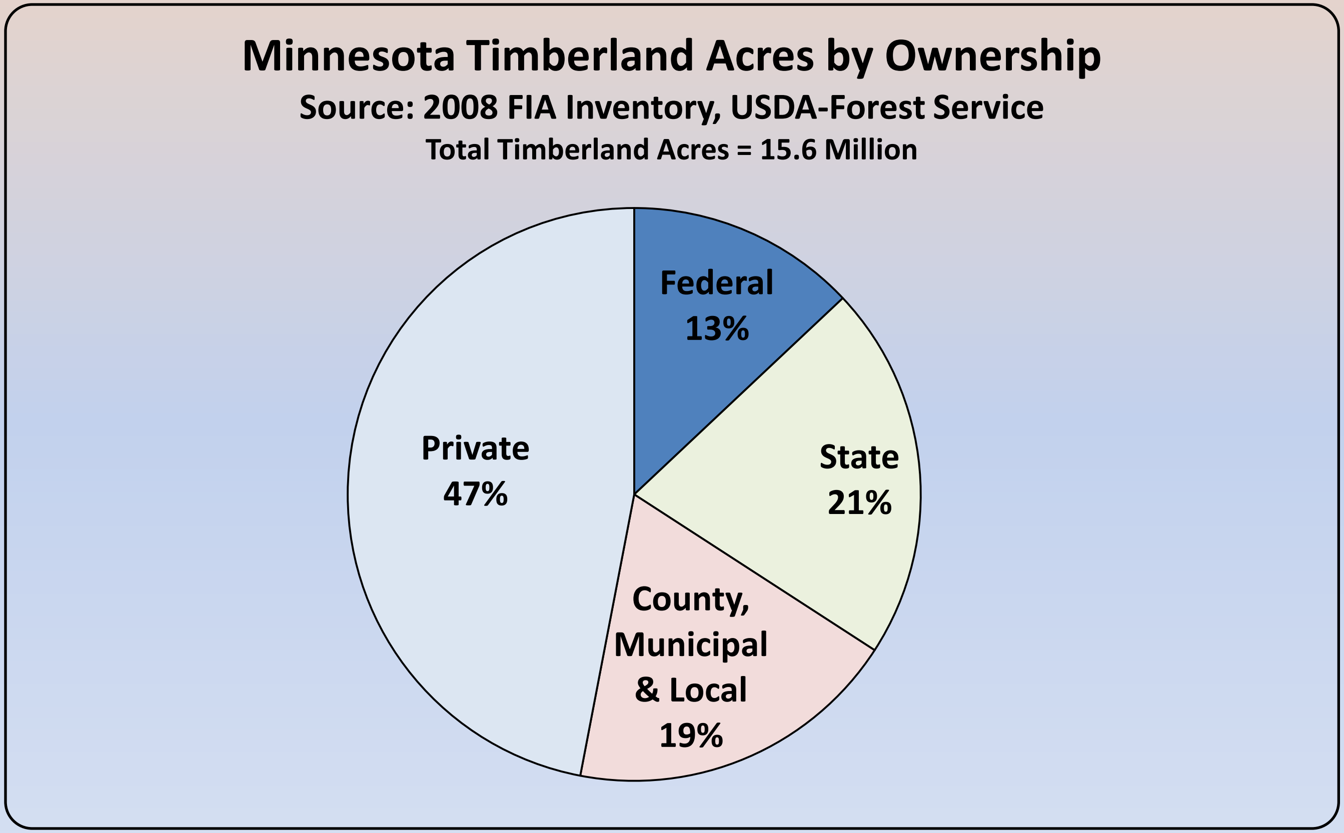


Source: 2008 FIA Database Provided by USFS Northern Research Station

-Nearly 17 million acres of forestland in Minnesota

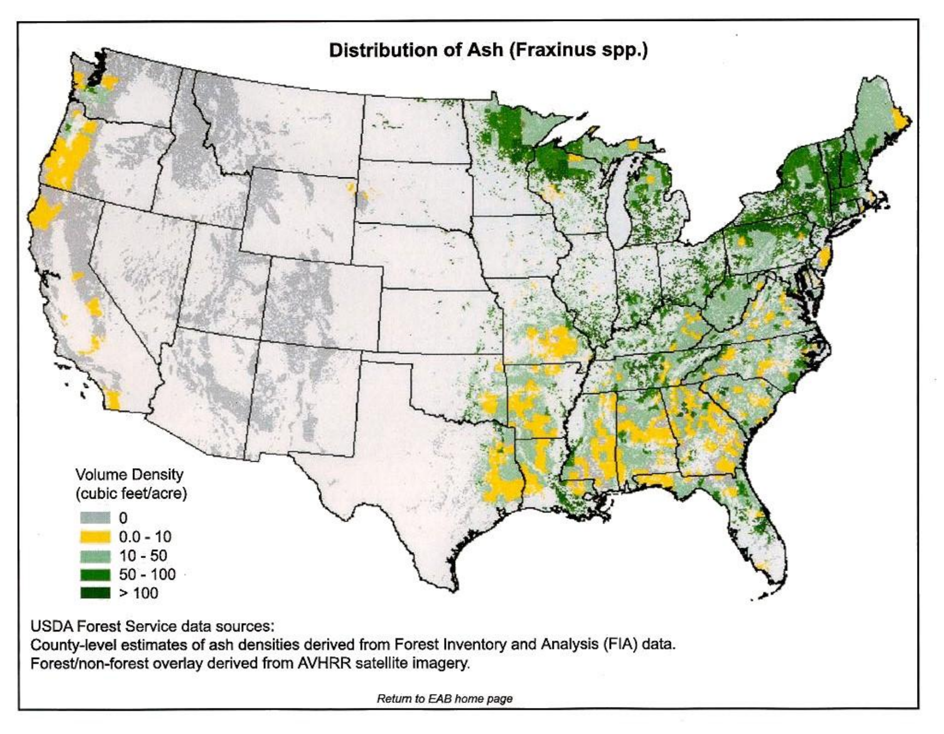
-About 15.6 million acres of forest land that is classified as "timberland" (forest land that is productive enough to produce a commercial crop of trees and is not reserved from harvesting by policy or law).

Minnesota Forest Resources Overview



Ownership impacts management. Owners have different management goals

Ash Forest Resource Overview



According to Forest Inventory & Analysis (FIA) data, Minnesota has the highest ash population of any state in the U.S.

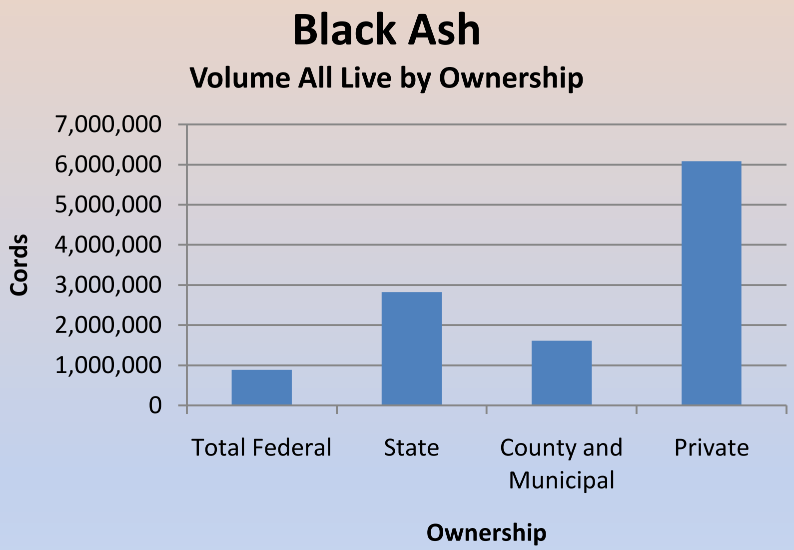
3 Species of Ash are found in Minnesota: Black, Green & White.

Ash Forest Resource Overview

- Ash volumes significant.
- Black ash more volume in MN than green or white, by a wide margin.

Ash Species Volumes	Cords	% of Total Volume of All Species
white ash	251,923	0.12%
black ash	**11,487,432**	5.39%
green ash	5,140,280	2.41%
Ash Species Total	**16,879,635**	**7.92%**
All Species Total	213,256,092	100.00%

Ash Forest Resource Overview (continued)



Ownership of Black Ash

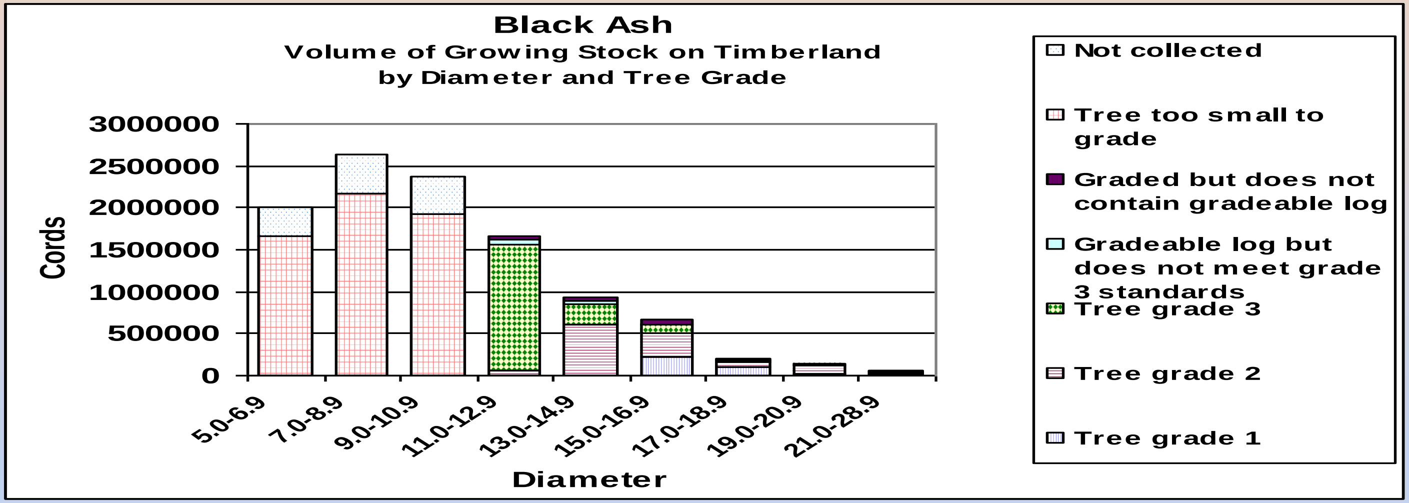
- Most of the black ash resource is on private and state owned lands

Net Growth

- Based on 2008 FIA data, estimated net annual black ash growth: 311,000 cords

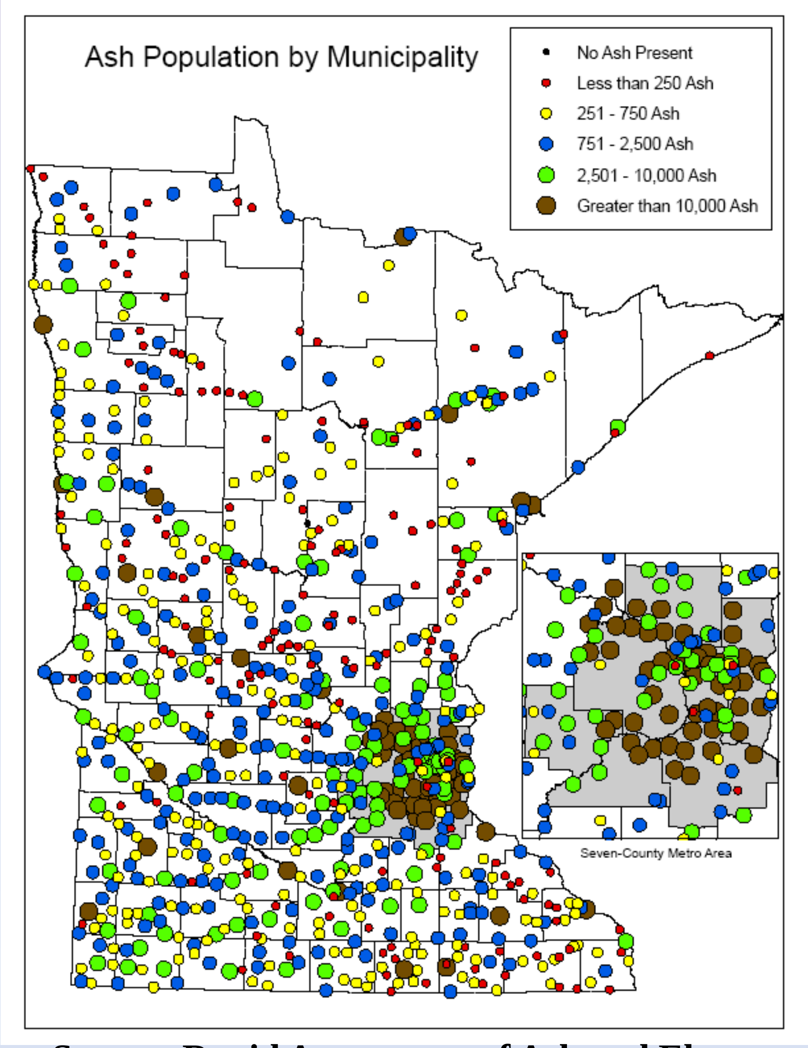
Ash Forest Resource Overview (Continued)

Volume, Size & Condition of Trees Impacts Marketability



- **Minnesota's black ash resource is dominated by small diameter material, but a modest amount of high-quality sawlog and veneer ash is grown here. Important to get this to higher value markets.**
- **Most of the black ash resource is a good fit for "pulpwood" or smaller-diameter log markets.**

Urban Ash Resource Overview



Source: Rapid Assessment of Ash and Elm Resources in Minnesota Communities
Resource Assessment Unit, Forestry Division
Minnesota Dept. of Natural Resources

Many communities in Minnesota also have a significant ash resource. Most of this is green ash.

Harvest Levels

2007 - By species and Product Group

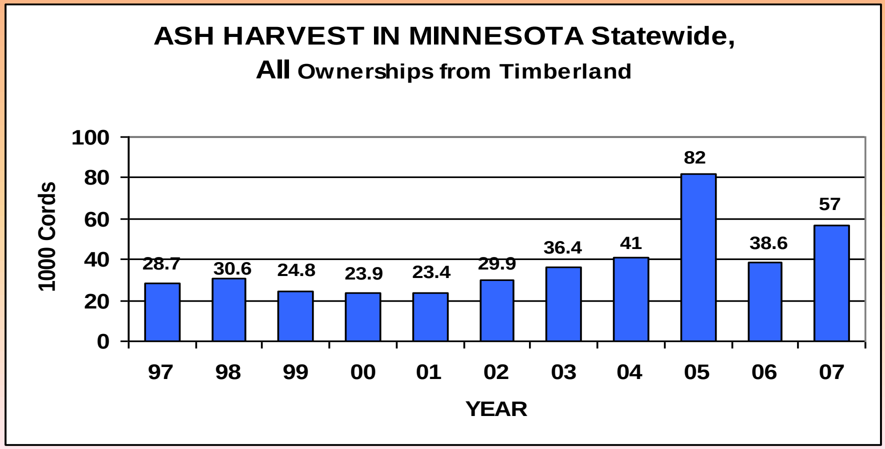
Markets for ash are (and have been) relatively poor, supply well above demand

Management of ash has been limited.

-Largely due to poor markets.

-Also concerns over ability to consistently regenerate very wet sites.

			Fuel		
Species	**Pulpwood***	**Sawlogs & Others***	**Residential****	**Commercial ***	**Total**
Aspen and Balm	1,379.1	51.8	31.9	7.3	**1,470.1**
Paper Birch	124.3	14.2	31.0	7.6	177.1
Ash	**9**	**8.6**	**27.1**	**12.6**	**57.3**
Oak	.4	73.0	57.5	1.2	132.1
Basswood	9.3	19.8	6.3	0	35.4
Maple	93.4	10.5	31.2	1.7	136.8
Cottonwood	5.0	8.2	.3	0	13.5
Other Hardwood	2.9	16.9	2.3	8.0	30.1
Sub-Total Hardwood	1,623.4	203.0	187.6	38.4	2,052.4
Pine					
Red Pine	30.7	142.4	2.9	0	176.0
White Pine	2.7	7.0	.4	0	10.1
Jack Pine	53.6	88.4	1.8	0	143.8
Spruce	190.8	24.5	.3	0	215.6
Balsam Fir	154.4	11.1	.2	0	165.7
Tamarack	33.9	7.0	2.0	10.0	52.9
White Cedar	1.4	6.6	.8	0	8.8
Other Softwood	4.6	.4	.1	2.2	7.3
Sub-Total Softwood	472.1	287.4	8.5	12.2	780.2
Total	2,095.5	490.4	196.1	50.6	**2,832.6**



Minnesota Forest Industry Overview

Annual Economic Impact

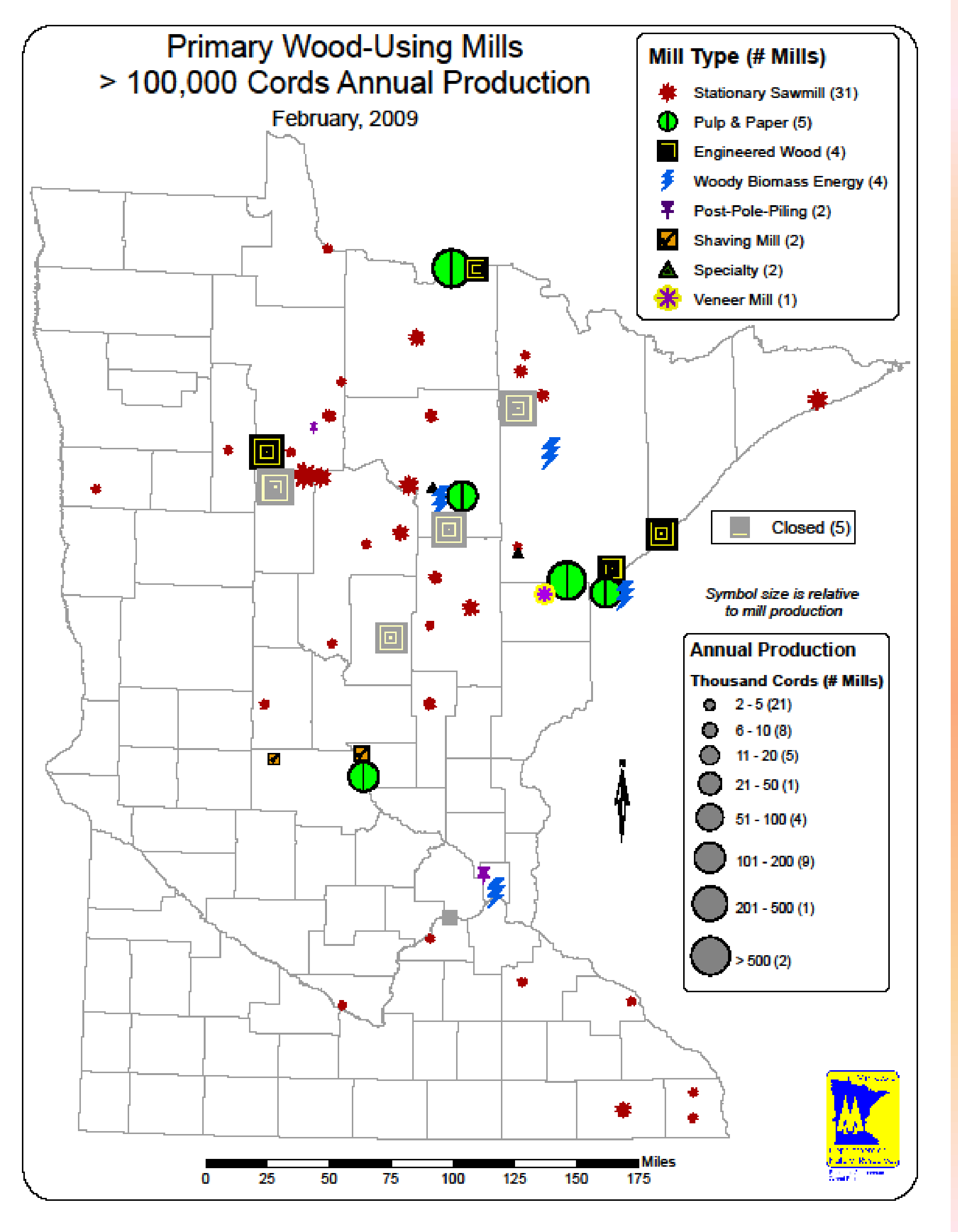
- Estimated value of forest products manufacturing shipments 2008: 8.6 billion

Employment

- 36,211 total employees

Industry

- *5 Pulp and Paper Mills*
- *3 Recycled Pulp & Paper*
- *1 Hardboard*
- *Several "specialty" mills such as veneer & post & poles*
- *2 Oriented Strand Board*
- *500+ Sawmills (many small)*
- *Over 800 Secondary Manufacturers*



Wood Marketability

Factors Impacting Wood Products Marketability of Trees

- **Volume** Many ash stand low volume.
- **Species**
- **Size**
- **Quality** (rot, form, limbiness, foreign objects) *Sawlogs should be straight, sound, with few large limbs.*
- **Distance to market(s)**
- **Other :** ***Quarantines can make movement of wood more difficult and costly (but certainly not impossible)***

Ash Markets

Pulp & Paper

Engineered Wood

Solid Wood Products

Specialty Products

Energy

Ash Wood Properties

Working Properties:

Black and green ash have lower specific gravities and lower strength properties than white ash, but are still moderately strong, hard, and stiff compared to other native hardwoods. They also split easier, shrink more, and are average in workability and gluing.

- Durability: Slightly to non-resistant to heartwood decay.

Source: USDA Forest Products Laboratory Tech Sheet

Ash Markets

Pulp & Paper

5 pulp & paper mills in MN.

<u>Current ash use</u>

A small amount of ash used by 2 of them (chemical process mills). Under 10,000 cords in 2007.

"When mixed in with other species in small volumes, the papermakers can live with it"

<u>Potential for greater ash use in pulp & paper mills</u>

Given how much wood is used by the mills annually, even a small upward shift in ash % could "move the needle" in value-added markets. Could be a win-win.

Ash Markets

Engineered Wood

- OSB and hardboard. 2 OSB & 1 hardboard mill in MN

<u>Current ash use</u>

Some ash used by 1 hardboard mill.   Probably under 5 thousand cords in 2007.

Not generally considered a good fit for OSB (fines and flake curling).

<u>Potential for greater ash use in engineered wood</u>

Hardboard mill has potential to use more. Potential to "move the needle" somewhat. Could be a win-win.

Ash Markets

Solid Wood Products

- Sawmills. Over 100 sawmills use some ash. Most very small.
- Export Veneer. Several exporters for black ash. Small volumes, but high value. *Delivered logs $1200/MBF+.* Markets good now.

<u>Current ash use</u>

About 9 thousand cords total in 2007.

<u>Potential for greater ash use in solid wood products</u>

Market and "resource fit" issues. That said, some potential to "move the needle". *Market development critical.* A decent to good fit for a variety of solid wood products.

Veneer markets can be further developed. Training Foresters to recognize and market quality will be critical.

Ash Markets

“Specialty” Wood Products

- Variety of “specialty” wood products produced in MN: Shavings, erosion control mats, log homes, etc, etc. Black ash also used for basket and natural furniture making.

<u>Current ash use</u>

Modest volumes.

<u>Potential for greater ash use in specialty products</u>

Niche markets = small volumes. May be some potential to modestly increase volumes used.

Basket-making and other special forest products important to consider in management and utilization strategies.

Ash Markets

Energy

Ash a good fit for energy markets.
Price low, btu value relatively good.

Current ash use

-Residential fuelwood: 27,000 cords in 2007. 2nd highest species.
-Commercial fuelwood: 14,000 cords 2007, more now.
-Pellets: A few thousand cords in 2007.

Potential for greater ash use in energy markets

Energy likely to be the ash market of greatest volume. Potential to significantly increase volumes used in all 3 energy sectors.

Volumes used and likely expansions, in context with volumes likely to be available, mean that much of the available ash could have an energy market. May partially displace some other species for a time?

Quarantine Impacts on Wood Transport and Processing

Key points:

Safe transport and handling are critical. The bug can't move very far on its own!

There are restrictions on moving ash from or through quarantine areas (currently Hennepin, Houston & Ramsey Counties) , but still possible to move wood with minimal risk of transporting EAB, through conditions in a Compliance Agreement.

Compliance Agreement: A written agreement between a business and a regulatory agency to achieve compliance with regulatory requirements.

For more information, listen to Mark Abrahamson's presentation or go to MDA website:
www.mda.state.mn.us/en/plants/pestmanagement/eab/quarantinefaq.aspx

Ash Utilization & Marketing Plan

Development

- Currently under development
- Stakeholder and expert input
- Draft by mid-summer

Strategies

- Many challenges, but there are things we can do. We will be working on these.
- Energy likely to be the big volume user - it appears that much of the available ash could have an outlet.
- **A greater challenge will be maintaining and expanding a strong value-added component. Potential for expanded use in pulp & paper, hardboard, solid & specialty wood products.**

Resources for Finding Wood Markets

Firewood Producers

- Regulatory and transport info: **http://www.mda.state.mn.us/plants/pestmanagement/firewood.aspx**

The basic idea is to facilitate use as near as possible to source of origin, or else to heat treat firewood.

Metro Wood Disposal Sites Listing at:
http://www.mda.state.mn.us/en/sitecore/content/Global/MDADocs/pestsplants/eab/ashtreewaste.aspx

Sawmills, pulp mills and Larger Woody Biomass Energy Facilities

-Twin Cities Sawmill/ Kiln Listing:
http://files.dnr.state.mn.us/forestry/um/twincities_sawmill_drykiln_listing.pdf

-Statewide Sawmill & Wood Processor Directories:
http://www.dnr.state.mn.us/forestry/um/index.html

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Resource for Information on Ash Utilization Options

SE Michigan Resource Conservation & Development Council (RC&D) Ash Utilization Project Web Page

http://semircd.org/ash/

Takeaway Messages

- Markets and utilization can provide a cost-effective means to accomplish management and mitigation work.
- A primary objective is to control EAB spread. The bug can't travel very far on its own! Safe transport critical to markets.
- Many challenges, but there are important things we can do to improve management & mitigation of ash through markets.
- Energy likely to be the big volume user, but value-added markets very important! Potential for expanded use in pulp & paper, hardboard, solid & specialty wood products.
- Resources are available for helping to find wood markets. Spend time researching markets on the phone & web, and through networking!

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