

Marketing and Sales of Woody Biomass

Opportunities for Existing Products From Timber Sales, Focusing on Logging Residues

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Biomass

DNR Utilization & Marketing Program Role

- Gather, Analyze & Disseminate Relevant Information
- Partners: U of M, NRRI, MNDEED, USFS, Many others.



Woody Biomass Sources

Logging Residue *Largest potential source*



Other Sources of Woody Biomass:

- **Primary Mill Residue** *Much already utilized.*
- **Secondary Mill Residue** *Much already utilized. Dry. Diverse. Air quality issues*
- **Dedicated energy crops** *Modest volumes currently being grown.*
- **Land clearing projects** *Powerlines, roads*
- **Brush from brushlands?** *Being seriously examined. Wildlife habitat benefits.*
- **Precommercial thinning, TSI**



Logging Residue



How much is out there & how much is available?

Preliminary **Logging Residue** Study Results

- Assessed volume on various sites statewide by key cover types and harvest systems. Field measurements on about 120 sites.
- Final results and report May 2006.
- Contact Lance Sorensen, MN DNR for full report at lance.sorensen@dnr.state.mn.us

Harvest Residue by Category

Residue Category	ft3/acre – all sites	Cds/Acre – All Sites
Down Coarse Woody Debris	356.85	4.5
Down Fine Woody Debris	134.01	1.7
Standing Residuals ¹	475.58	6.0
Debris Piles located @ Landing	50.12	0.6
Scattered Debris Piles	15.31	0.2

¹ Partial Cuts Included -Conversion factor: 79 cubic feet/ cord.

Figures in the above table are DRAFT

MFRC Forest Management Guidelines & Economics also key to availability.

MFRC Forest Management Guidelines Relevant to Utilization of Tops & Limbs

-New guidelines to direct harvest of tops and limbs and brush from brushlands being developed. Scheduled completion: Fall 2007.

-Current Relevant Guidelines:

Relating to retention of logging residue on-site, there are three issues: 1) wildlife habitat, 2) soil productivity, and 3) riparian areas.

1) **WITH REGARD TO WILDLIFE HABITAT:**

THE GUIDELINES REQUIRE RETENTION OF SOME: Down Woody Debris, Snags and Leave Trees

2) **WITH REGARD TO MAINTENANCE OF SOIL PRODUCTIVITY:**

THE GUIDELINES SUGGEST THAT TWO TYPES OF SITES ARE OF GREATEST CONCERN FOR REMOVAL OF TOPS AND LOGGING RESIDUE:

3) **WITH REGARD TO RIPARIAN AREAS:**

THE GUIDELINES RECOMMEND RETAINING SIGNIFICANT AMOUNTS OF LIVE VEGETATIVE COVER.

THESE ARE VERY BRIEF GUIDELINE SUMMARIES. MANAGERS NEED TO REVIEW ACTUAL GUIDELINES IN ORDER TO SEE FULL TEXT, RATIONALE AND CONTEXT

Potential Markets for Logging Residue in NE Minnesota

Limiting Factors on Use of Tops & Limbs for Many Forest Products:

- 1) Bark percentage
- 2) Processing efficiency

Markets:

Engineered Wood: Bark-on chips

- Georgia Pacific - Duluth; International Bildrite - International Falls
- Special Forest Products (Log furniture, etc. Bob Bartz will cover)

Landscape Mulch

- Currently most is made from urban wood residue & mfg residue
- Markets limited in NE MN
- Several companies produce mulch - Look in online Directory

Animal Bedding

- Dairy & Poultry industries using more sawdust and shavings as bedding, but this is typically produced from mfg residue, or by shavings or pellet mills from roundwood, not logging residue.
- Markets limited in NE MN

Biomass Markets (Continued) Energy

-Energy from biomass not new.

-Big difference now? **Logging residue** as a potential fuel source.

Why?

- 1) Natural gas price rise, 2) Energy production efficiency improvements and 3) Residue gathering & processing technology improvements make logging residue a potentially more attractive fuel.

-Note: Energy markets typically have limited procurement range-

Commercial Energy Markets – NE MN

- Laurentian Renewable Energy
- MinnTac (Hill Wood Products)
- MN Power - Duluth, Grand Rapids
- SAPPI
- Others?
- Pellets

Woody Biomass *Utilization and Marketing Issues*

- **Demand side**
- Most competitive in Metro region – expanding radius of supply
- Central and NE Mn – Improving market with new consumers coming on line.
- NW Mn- Similar - new consumers developing or in feasibility stage.

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Some utilization & marketing issues

- **Supply side-**
- Energy markets highly dependent on price consumers are able to pay versus alternate fuels.
- Distance to markets critical, especially for energy markets (fairly low value product).
- Efficiency and ease of collection – differs in various parts of the state. (Slash baler?)
- Procurement companies –contracted to supply feedstock to facility.

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Some Utilization and Marketing Issues Relevant to Logging Residue

- **Opportunity for Business**

Procurement Companies. Several companies have positioned themselves to process tops and limbs on a landing after a sale. Plan to work with many loggers. Several operating in the state. More probably to follow.

- Other companies deal in utilizing *manufacturing* residues.

Integrated Logging Operations. Some logging companies have purchased, or will purchase, their own chipping or grinding equipment in order to process tops & limbs from their own sales.

Some Biomass Harvesting Considerations for Natural Resource Managers

- Potential for improved management on some sites (regeneration, aesthetics, forest health).
- The nearer to a biomass facility, the more likely you are to see impacts.
- Emerging issue. This will take some time to sort out. Gathering & processing equipment and systems will evolve.
- Tops and limbs appraised and sold with other products? Or added later?
- Brushlands?
- Consider impacts to landing size in sale design.
- Try to avoid re-trafficking sites.

What is the Future for Woody Biomass?

- Who knows? \$3/gal gasoline and \$5+/MMBtu natural gas may be a driving force
- Competitiveness of pulp & paper & other wood industry will have an influence
- Newly developed products or manufacturing processes may play a key role
- Land management projects will continue to be a supply source
- Timber harvest rates will be key as well

Questions?????

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