

# Harvesting Biomass to Meet Multiple Objectives

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March 2006

## Program Outline

- Introduction
- Overview of the BUG Project
- Project Objectives
- Project Activities
- Harvest Sites and Methods
- Next Steps



## Introduction

### □ Institute for Agriculture and Trade Policy

- International NGO founded in 1986
- Promotes resilient family farms, rural communities and ecosystems around the world through research and education, science and technology, and advocacy.



## Introduction

### □ Community Forestry Resource Center

- Established in 1998 by the Institute for Agriculture & Trade Policy
- Promotes responsible forest management by encouraging the long-term health and prosperity of small, privately-owned woodlots, their owners and their communities



## Overview of BUG Project



- Woody Biomass Utilization Grants
  - Program of USDA Forest Service
  - Aim is to create markets for small-diameter and low-grade material from fuel reduction activities

## Overview of BUG Project

- Partners & Collaborators
  - CFRC
  - U.S. Forest Service
  - Laurentian Energy Authority
  - Forest Management Systems
  - University of Minnesota
  - University of Wisconsin, Steven's Point



## Project Objectives

- Address barriers hindering removal of woody biomass from the Superior National Forest
  - Barrier 1: Logger unfamiliarity with equipment, operating conditions, productivity and cost
  - Barrier 2: Lack of information for establishing Best Management Practices for biomass removal

## Project Outcomes

- Job Creation
  - Logging, trucking
  - Local energy source
- Ecological Improvement
  - Carbon neutral
  - Reduced emissions
- Fuel Reduction
- Ecosystem Goals
  - Timber stand improvement
- Established standards for sustainable biomass removal



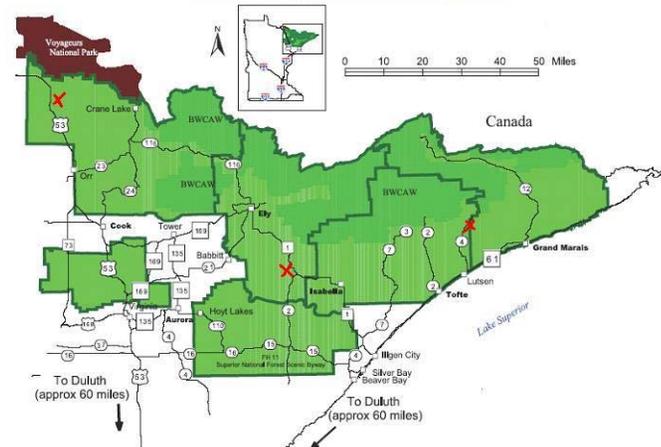
## Methods



- 12 test biomass harvests
  - High-priority fuel reduction areas
  - Low potential for commercial timber harvest
  - Varied equipment and techniques used
  - Pre- and post-harvest ecological and silvicultural data collection

## Superior National Forest

including Boundary Waters Canoe Area Wilderness



## Harvest Site 1 – Gust Lake



## Harvest Site 1 – Gust Lake



### Harvest Site 2 – Pitcha Lake

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### Harvest Site 2 – Pitcha Lake

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### Harvest Site 3 – Cold Springs

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### Harvest Site 3 – Cold Springs

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## Potential Harvest Equipment

- ▣ Ponsse Buffalo Dual biomass harvester



## Potential Harvest Equipment

- ▣ John Deere energy wood harvester (bundler)



## Potential Harvest Equipment

- ▣ Tub grinder



## Woody Biomass Market

- ▣ Laurentian Energy Authority
  - Two municipal district energy combined heat and power plants in Hibbing and Virginia, MN
  - Biomass fuel will displace 75% of coal
  - Sell 35 mw biomass to Xcel Energy for 20 years to meet state mandate



## Related Legislation



- Woody Biomass Mandate passed in 2005
  - Sustainable and renewable biomass harvests
  - Verification by third party system
  - Harvesting guidelines developed by July 2007

## Guideline/BMP Development

- DNR Ecological Services, Fish and Wildlife and Forestry combined with Minnesota Forest Resources Council are developing guidelines for the sustainable harvest of woody biomass
- Integrated guidelines for brushland and forestland
- Focus on practices in northern and central MN that conserve
  - Soil productivity
  - Biological diversity
  - Wildlife habitat

## Next Steps

- Test harvests summer 2006
- Data collection and analysis
- Dissemination of results to address the two key barriers
  - Information for loggers
  - Data for developing standards



Thank You!

[forestrycenter.org](http://forestrycenter.org)