

## Opportunities and Challenges of a Wood Biomass Market

Perspectives from the Environmental Community

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ENVIRONMENTAL DEFENSE  
finding the ways that work

## Potential Opportunities

- Assist private landowners in keeping forests as forests;
- Enhance rural economies; and
- Increase use of cleaner, locally available energy resources.

## Addressing Forest Condition

- “Forest management is the driver for wood biomass” – Sue LeVan, echoed by Robert Rummer, Denis Hazel, others
  - Reduce fire risk
  - Limit disease / insect conditions
  - Improve wildlife habitat
  - Offset forest management costs

Determine the role for public policy to support woody biomass for electricity production?

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- Public support = Expectation of increased public benefits.
- Not focused on existing 225 plants.

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- Competition for Forests: pulpwood, OSB, chip exports, biofuels, and ecological services (soils, wildlife,...). Don't forget development pressures.

## Facility Size Matters



## Spatial Distribution Matters



## Potential Biomass Impacts

Source	Air Quality	Forest
Industrial Residues		
Land Clearing		
Marginal Cropland		
Forest Thinnings		
Cleaner Clearcuts		

## Potential Biomass Impacts

Source	Air Quality	Forest
Industrial Residues	Positive	Marginal
Land Clearing		
Marginal Cropland		
Forest Thinnings		
Cleaner Clearcuts		

## Land Clearing



## Potential Biomass Impacts

Source	Air Quality	Forest
Industrial Residues	Positive	Marginal
Land Clearing	Very Positive	Marginal
Marginal Cropland		
Forest Thinnings		
Cleaner Clearcuts		

## Marginal Cropland



Source: Jon D. Johnson,  
Washington State University

## Potential Biomass Impacts

Source	Air Quality	Forest
Industrial Residues	Positive	Marginal
Land Clearing	Very Positive	Marginal
Marginal Cropland	Positive	Marginal
Forest Thinnings		
Cleaner Clearcuts		

## Addressing Forest Condition

- “Lack of cost effective management options” – Bob Rummer
- “Forest management is the driver for wood biomass” – Sue LeVan
  - Reduce fire risk
  - Limit disease / insect conditions
  - Improve wildlife habitat
  - Offset forest management costs

## Potential Biomass Impacts

Source	Air Quality	Forest
Industrial Residues	Positive	Marginal
Land Clearing	Very Positive	Marginal
Marginal Cropland	Positive	Marginal
Forest Thinnings	Positive	Positive
Cleaner Clearcuts		

## Concerns with Cleaner Clearcuts

- Soil Nutrients (McComb and Lindenmayer, 1999)
- Formation of Organic Soils (Fuhrman, 2004)
- Water Quality (Hagan and Grove, 1999)
- Wildlife Habitat
  - Birds (Lohr et al, 2002)
  - Mammals (Loeb, 1999; Mengak et al, 2003)

## Potential Biomass Impacts

Source	Air Quality	Forest
Industrial Residues	Positive	Marginal
Land Clearing	Very Positive	Marginal
Marginal Cropland	Positive	Marginal
Forest Thinnings	Positive	Positive
Cleaner Clearcuts	Positive	Negative

## Policy / Research Questions

- How to use biomass energy to create a market for TSI & mid-rotation management?
- How to ensure the scale of biomass doesn't become problematic? What information required?
- What level of cleaner clearcuts reduces ecological services? How much too much?
- How to ensure this new renewable energy source renews our forests? Verification systems?