Biomass Harvesting as a Wildlife Management Tool

Restoring and Maintaining Open and Early Successional Habitats

As a land manager or advisor, where do you want to be?

- What are your or your clients desired future conditions?
- Is biomass harvest/production an end or a means to accomplish a wildlife habitat objective?
- Does it make sound ecological sense?

Thoughtful Wildlife Management

The Manipulation of Vegetation, Based on Sound Ecological Principles

If dedicated biomass production is to be a truly effective wildlife conservation tool, it must be applied in an ecological context

ECS provinces - v99a
Habitat Management Plan

Wildlife Management

Will this be added to the tool box?

Wildland Woody Biomass Harvesting for Wildlife

The Minnesota Forest Resource Council with cooperating partners will be developing site level guidelines for wildland woody biomass harvest

Later Briefly Talk about Dedicated Biomass Crops and Wildlife
1. Brushland Management

Brush Prairie  
Bog

Oak Savanna  
Shrub Swamp

Brushlands Species of Interest

Wildlife Which Utilize (and Depend Upon) Open Landscapes

And occur regularly or permanently in the Minnesota CLAA.

<table>
<thead>
<tr>
<th></th>
<th>Openland</th>
<th>Brushland</th>
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<tbody>
<tr>
<td>Amphibians</td>
<td>14 (1)</td>
<td>13 (0)</td>
</tr>
<tr>
<td>Reptiles</td>
<td>17 (7)</td>
<td>14 (0)</td>
</tr>
<tr>
<td>Mammals</td>
<td>56 (9)</td>
<td>58 (1)</td>
</tr>
<tr>
<td>Birds</td>
<td>214 (137)</td>
<td>171 (17)</td>
</tr>
<tr>
<td>404 species</td>
<td>301 (154)</td>
<td>256 (18)</td>
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<td></td>
<td>75% (38%)</td>
<td>63% (4%)</td>
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The aspen type, due to its ability to sucker, is well suited for this type of management.

2. Management of Early Successional Forest Habitats

Leopold’s Law of Interspersion

The four habitat types (A-D) nest B times more often, while each type total area remains the same.
Diversifying age classes to create more ruffed grouse activity centers

3. Slash Utilization

Slash offers habitat for some species, but too much can inhibit reforestation

New and Emerging Technology

Slash Utilization Wildlife Implications
4. Thinning/TSI By-products

Leave 10% in one-acre patches unthinned, to serve as refuges

5. Woody Encroachment

The Restoration of Grasslands and Prairies

Leave 10% in one-acre patches unthinned, to serve as refuges
Habitat Management Examples

- Alder harvest for woodcock
- Maintaining wildlife openings
- Maintain open woodlands
- Brush management
- Assist regeneration
- Utilize unwanted trees in prairies

Potential Biomass Harvest Concerns

- Snags
- CWD
- Nurse Logs

Dedicated Fuel Sources

- Hybrid Poplar
- Willow
- Herbaceous- alfalfa, switchgrass

Hybrid Poplar

- In Minnesota and the Dakotas, plantations were utilized by generalist species
- Can displace open landscape dependent species such as prairie grouse
- But, in the appropriate landscape, hybrid poplar or native SRWC may remediate forest fragmentation, in lieu of forest restoration
**Willow**

Similar to hybrid poplar plantations

In NE USA, documented cases of area sensitive forest birds nesting in willow plantations

Shorter rotations and height, plus longer replanting interval suggests willow may have fewer negative impacts to area sensitive grassland and shrubland species than hybrid poplar

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**Switchgrass**

Switchgrass fields dedicated to biomass production are utilized by grassland nesting birds, including area sensitive species

Documented successful nesting efforts by state listed grassland species, especially those needing short grass

In the future, switchgrass may be able to compete with row-crop agriculture and add a very substantial number of permanent grassland acres to the appropriate landscape.

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**Biomass technologies may help meet multiple conservation value objectives.**

- Supplement fossil fuels
- Help in maintenance of ecosystem health and productivity, and the conservation of biological diversity

Whenever possible, biomass utilization and wildlife management efforts should interact and reinforce each other