

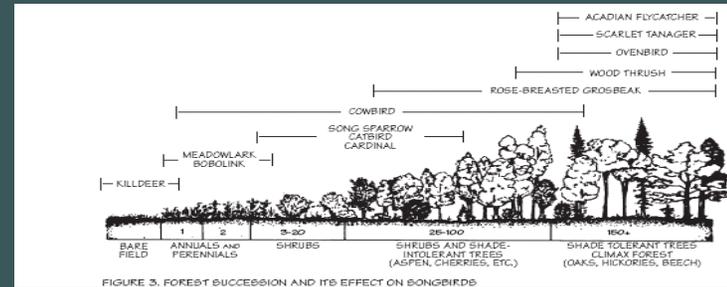
Biomass Harvesting as a Wildlife Management Tool

Restoring and Maintaining Open and Early Successional Habitats



Thoughtful Wildlife Management

The Manipulation of Vegetation, Based on Sound Ecological Principles

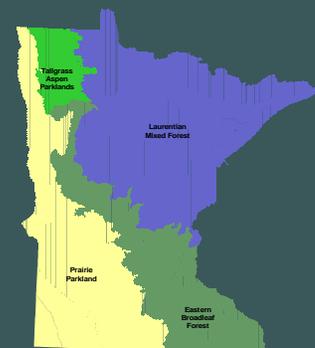


As a land manager or advisor, where do you want to be?

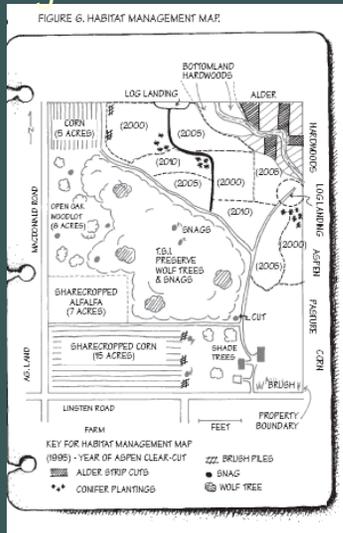
- What are your or your clients desired future conditions?
- Is biomass harvest/production an end or a means to accomplish a wildlife habitat objective?
- Does it make sound ecological sense?

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



© K. B. Robertson
Illinois Natural History Survey

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 OLAA

	<u>Openland</u>	<u>Brushland</u>
Amphibians	14 (1)	13 (0)
Reptiles	17 (7)	14 (0)
Mammals	56 (9)	58 (1)
<u>Birds</u>	<u>214 (137)</u>	<u>171 (17)</u>
404 species	301 (154)	256 (18)
	75% (38%)	63% (4%)

Brushland Shearing Feb. 2005

Before



During



After



Brushland Management of the Future??



2. Management of Early Successional Forest Habitats



The aspen type, due to its ability to sucker, is well suited for this type of management



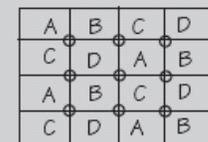
Leopold's Law of Interspersion



FIGURE 1. INTERSPERSION
The four habitat types (A-D) meet 9 times more often, while each type's total area remains the same.



▲ Poor interspersion and edge effect



▲ Good interspersion and edge effect

Diversifying age classes to create more ruffed grouse activity centers



3. Slash Utilization



New and Emerging Technology



Slash Utilization Wildlife Implications

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



4. Thinning/TSI By-products



Mitigation



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

5. Woody Encroachment

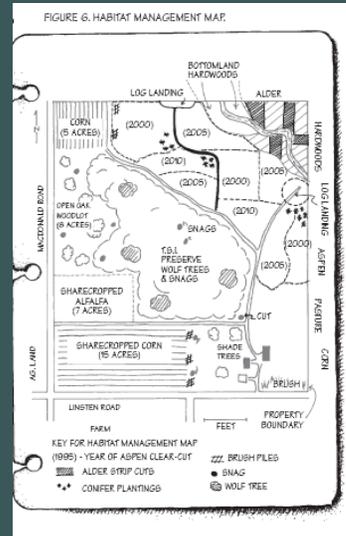


The Restoration of Grasslands and Prairies



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



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

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.

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

