

UNIVERSITY OF MINNESOTA

EXTENSION

# Forest Stewardship Planning

Dean Makey, MN DNR

Fueling the Future:

The Role of Woody Biomass for Energy Workshop

April 2, 2009

Brainerd

Sponsored by:

University of Minnesota Extension, WesMin and Onanegozie RC&Ds, Natural Resource Conservation Service – Baxter, MN, Soil and Water Conservation District – Crow Wing County

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# “FOREST STEWARDSHIP PLANNING”

by

Dean Makey

DNR – Division of Forestry

Biomass Workshop

April 2, 2009

# Why have a management plan?

To answer these questions:

1. What natural resources do I have?
2. Where are they located on my property?
3. How does my property interact with adjacent lands and the entire landscape?
4. What special or unique features do I have?

# Why have a management plan?

5. What are my goals?
6. What are the landscape goals?
7. What should I do to achieve these goals?
8. When should I do them?

A management plan should provide information to help you make decisions about what to do to achieve the goals.

# Forest Stewardship Program

- Older management plans vs. recent plans
- Federal program starting in 1990 - purpose
- Minnesota Stewardship planning goals



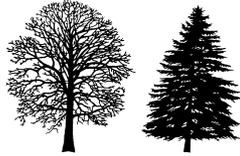
# Forest Stewardship Program

Plan providers:

- DNR – Forestry & DNR – Wildlife
- Other agencies – SWCD & NRCS
- Private consultants
- Forest industry foresters

# Components of a complete Forest Stewardship Plan

- Title page
  - Contact information for landowner and plan preparer
  - Date
  - Legal description
  - Landowner goals



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# WOODLAND STEWARDSHIP PLAN

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**LANDOWNER:**

**Pat Dugas**  
233 Morton Avenue NW  
Elk River, Minnesota 55330  
Phone: 763-241-1026

**PROPERTY LOCATION:**

Part of the SW 1/4SW 1/4 of Section 27,  
Township 46 N., Range 29 W. (Irondale Township),  
Crow Wing County

**PREPARED BY:**

Dean Makey  
DNR – Area Forestry  
1601 Minnesota Drive  
Brainerd, Minnesota 56401  
Phone: 218-828-2565

This woodland stewardship plan was designed in February of 2006 to help guide the management activities of the natural resources on your property. The plan is based on your goals in harmony with the environment around you. Project recommendations are for your consideration.

**THE GOALS YOU IDENTIFIED FOR MANAGING  
THE PROPERTY ARE:**

- ? To improve the habitat for wildlife, especially deer and grouse.
- ? To know the value of the timber, and consider removing the large trees (mature timber) by logging contractors.
- ? To keep the forest healthy.

**M**innesota  
**F**orest  
**S**tewardship  
**P**rogram

**FOR MORE INFORMATION CONTACT:**

DNR - Area Forestry Office  
1601 Minnesota Drive  
Brainerd, Minnesota 56401  
Phone: 218-828-2565

# Components of a Forest Stewardship Plan

- Property description
  - Acres
  - General description
  - Regional landscape and interaction with adjacent lands
  - Natural and cultural heritage features
  - Other special features

# Property Description

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**STEWARDSHIP ACRES: 35**

**TOTAL ACRES: 35**

This property is located approximately 5 miles south of Crosby, Minnesota. Access to the property is good as a gravel road runs through the south portion. A driveway runs through the middle of the property.

Topography of the property is rolling.

Most of the property is upland and wooded. There are a couple of lowland areas. The soils on the upland are of the Brainerd-Chetek Association. These are sandy loam soils. Native vegetation consists mainly of red oak and aspen with some jack pine. The lowland areas have soils in the Warman-Halder-Peat Association. These are poorly drained soils, which are too wet to support many trees. Vegetation is mainly willow and alder with some sedges and cattails. More detailed soils information may be found in the Crow Wing County Soil Survey.

The landscape around this property is a mixture of upland wooded areas, wetlands, and some agricultural fields. A 33-acre lake, Crato Lake, is located just to the northeast. It is surrounded by wetlands, which border this property. Much of the land immediately surrounding this property is privately owned. There are tracts of public land in the township.

## **LANDSCAPE REGIONS: Mille Lacs Uplands**

The enclosed Minnesota map shows our ecological landscape regions (or subsections). The actual boundaries are not as sharp as the lines might imply. In fact, there can be islands of one landscape region inside another. However, there are basic ecological differences between the units.

Your land is primarily within the Mille Lacs Uplands subsection. Gently rolling till plains and drumlin fields are the dominant landforms in this ecoregion. Brown and red till forms the parent material. In the southern portion, upland hardwoods consisting of red oak, sugar maple, basswood, and aspen-birch were common before settlement.

Presently, forestry, recreation, and some agriculture are the most common land uses. The jewel of this region is Mille Lacs Lake, well known for walleye fishing.

# Components of a Forest Stewardship Plan

- Map

# WOODLAND STEWARDSHIP PLAN JOHN WALLIN

SE1/4 NE1/4 of Section 19 - Twp. 140 - Rge. 27

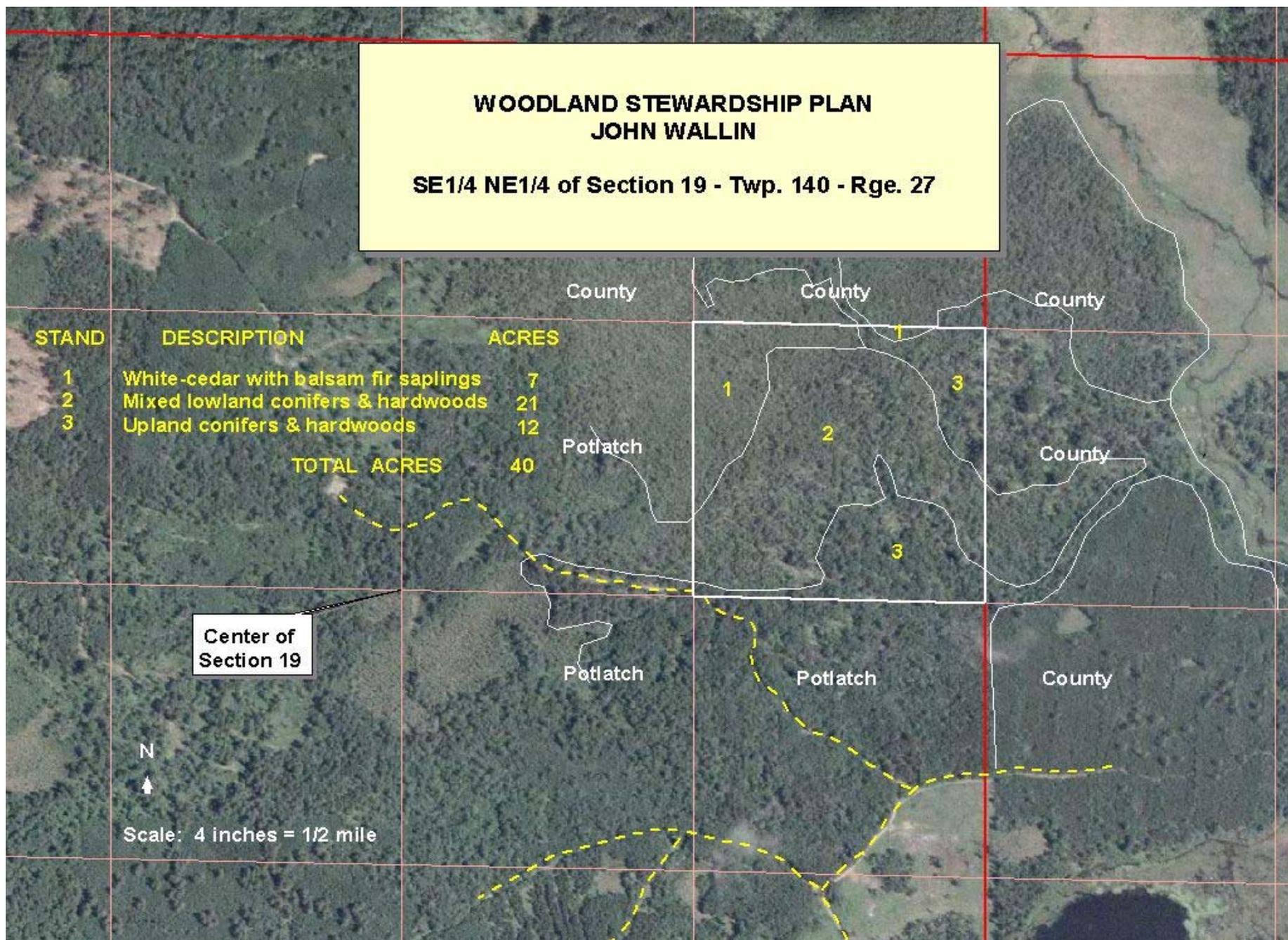
STAND	DESCRIPTION	ACRES
1	White-cedar with balsam fir saplings	7
2	Mixed lowland conifers & hardwoods	21
3	Upland conifers & hardwoods	12
TOTAL ACRES		40

Center of  
Section 19

N



Scale: 4 inches = 1/2 mile



# Components of a Forest Stewardship Plan

- Cover type data
  - Description
  - Recommendations and alternatives

# Woodland Stewardship Cover Types

## Oak with Mixed Hardwoods

Stand Number: 1

Stand Acres: 19

Site Quality – Very Good (red oak SI = 72) Tree Density – Good (basal area = 120 sq. ft. per acre) Total Timber Volume* - 30 cords + 500 bd. ft. per acre Stand Age – 67 years *volume should not be used for purposes of selling timber
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**Stand Description:** This stand covers the most area on the property and consists mainly of immature red oak pole timber. The red oak averages 11 inches dbh. The red oak is mixed with a fair amount of aspen and paper birch. There are smaller amounts of red maple, basswood, and bur oak mixed also. A few large Norway and white pine saw timber trees were observed scattered throughout this stand. This stand has a good density of trees. This site produces good quality oak.

The oak here are mostly healthy. Some of the trees have heart rot and some have died, but the percentage is low, less than 5 percent. The aspen and birch found here are mature. The aspen is showing signs of rot. The birch is declining with some mortality showing up.

The understory consists of a moderate density of ironwood, hazel, and red osier dogwood shrubs. There is a small amount of hardwood seedlings and saplings mixed with the shrubs, mainly red oak, red maple, basswood, and green ash. The ground is covered with grasses, ferns, and forbs.

There have been some white spruce planted in the understory in parts of this stand. These general areas are labeled “ws” on the map. These white spruce are several years old.

A small area of Norway pine is located on the south edge of the pipeline. These trees also appear to have been planted about 15 years ago and are now 30 feet tall. They were planted at a 6 ft. X 6 ft. spacing and now number about 800 trees per acre. Some of the pine are shorter around the edges of this area where they have not received full sunlight. A few natural birch saplings are growing with the pine.

**Stewardship Objective:** To improve the wildlife habitat. To know the value of the timber. To keep the forest healthy.

### Recommended Management Activities:

This stand produces good quality oak and should be managed for this species. The stand could be thinned to improve the growing conditions for the oak. Remove mature and low value species, deformed trees, and thin dense areas. Extreme care needs to be taken not to damage residual trees during the removal. This selective harvest could be done as a commercial timber sale. Your forester is able to help prepare and market the sale.

In the areas where the white spruce were planted, release them from the overtopping hardwoods. Accomplish this by cutting the hardwoods and removing them. This could be accomplished as a commercial timber sale.

Another method would be to girdle the overtopping trees to kill them and let them deteriorate and fall down over time. This method would probably cause less damage to the spruce, but would incur a cost.

### Management Alternative:

If left untreated, this stand will live mainly as it is for many years. The aspen and birch will die first. This will give the oak and other hardwoods more room to grow. It will accomplish the thinning as described above, but you will not generate any income as if they were sold and harvested.

As time goes on and the oak die, they will be replaced by the shade tolerant maple and basswood in the understory. The stand will succeed to a maple-basswood forest from an oak forest.

# Components of a Forest Stewardship Plan

- Summary with time table or calendar
- Binder with reference materials

# Where do you get specific project advice?

- Usually the plan preparer; he/she is most familiar with your property.

# PRESENTER

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