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## WOODLAND STEWARDSHIP PLAN

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Prepared for:

Joe Smith  
5555 Green Dr.  
Faribault, MN 55021  
507-xxx-xxxx (h)

Portions of:

NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  and  
N  $\frac{1}{2}$  NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  Sec 08, T108N, R21W  
Deerfield Township, Steele County  
Stewardship Acres 50  
Total Parcel Acres 50

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Prepared by:

Your name  
MN DNR-Forestry  
1801 NW 30th St,  
Faribault, MN 55021  
507-333-2012

December 5, 2007

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(Landowners) Name forest stewardship goals for this property are:

- \* To manage the forested areas in a way that allows for timber harvest as a management tool in the future.
- \* To explore converting some existing agricultural fields to forest by way of direct seeding.
- \* To manage the forested areas in a way to maximize wildlife habitat for game and non-game species.
- \* To optimize recreation opportunities.



# Property Description

(see maps)

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## **LANDSCAPE REGION: Big Woods**

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 Big Woods region and is described in more detail on the following page. The purpose of providing this "landscape region" and the "interaction with nearby properties" information is to help you assemble a picture of how your land and your activities fit into the larger landscape.

The conservation issues of concern are of particular note. It is likely that at least some of your activities will affect these larger scale issues.

## **INTERACTION WITH NEARBY PROPERTIES:**

Agricultural fields and small to medium sized scattered woodlots cover the surrounding ownerships. These lands are tied together by potholes and drainages (including Mackenzies Creek which flow just north of your property) and lead to the Cannon River. Any opportunity of expanding existing woodland and wildlife corridors is of great interest to conservationists and the Department of Natural Resources (DNR). You have the opportunity to help join these wildlife corridors, a priority for the DNR. With concerned landowners like you, the daunting job of cleaning up the rivers and creeks and enhancing the area in order to work towards a more natural landscape becomes a realization.

## **GENERAL PROPERTY DESCRIPTION:**

This 50-acre stewardship site is located approximately 6 miles West of the Medford city limits on County Road 64. The property has a mixture of cropland, forestland and wetland. Mackenzies Creek runs from the southwest to the northeast and comes closest to your property at the northwest corner. The topography is rolling to flat. The main soil types are Kilkenny clay loam, Lerdal silty clay loam, Muck with a loamy substrate, and Glencoe clay loam. These soil types are well suited for trees. The only exception to this would be the Muck ground, which would be much more specific in regards to the tree species that could maintain itself on that soil type.

# Property Description

(see maps)

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## Big Woods Subsection

### DISCUSSION

This region is characterized by gently to moderately rolling topography. Lakes are common. These features and the higher precipitation formed a barrier against the fire that originated in the prairies to the west. The reduction of fire allowed the forests to develop. Presently, most of the region is farmed.

### CLIMATE

The annual precipitation is about 30 inches, with 12 inches falling during the growing season. Growing season length is approximately 147 days.

### LANDFORMS

The dominant landscape feature is circular, level topped hills bounded by smooth side slopes and above a broad lower level. The lower level is interspersed with closed depressions containing lakes and peat bogs. The lake levels often control drainage. The soils are dominantly loamy.

### HYDROLOGY

The Minnesota River runs through the middle of this subsection. The Mississippi River forms part of the eastern boundary. The other major river is the Crow River and its associated forks. Lakes are common. There are over 100 lakes that are 160 acres or greater in size. Many of these are groundwater controlled with no inlets or outlets.

### PRESETTLEMENT VEGETATION

Oak woodland and maple-basswood forest were the most common vegetation types on the irregular ridges of this subsection. Based on his study of the surveyor notes, Grimm (1984) found that order of dominance in the sugar maple-basswood forest was elm (27%), basswood (14%), sugar maple (12%), bur oak (10%), ironwood, red oak, and aspen (7%). He also found that along the western margin of the subsection, aspen was most common (53%), followed by bur oak (22%); on all other margins, oak woodland was dominated by a mix of aspen, red oak, bur oak, and to the east, white oak.

### NATURAL DISTURBANCE

Although fire occurred within the subsection, it was much less common than on prairies to the west. This is primarily due to irregular topography and presence of lakes.

### PRESENT VEGETATION AND LAND USE

Greater than 75% of the subsection is cropland, with an additional 5-10% pasture. The remaining 10-15% of the subsection remains as either upland forest or wetland.

### RARE ANIMALS AND PLANTS

Rare animals of the area include the Bald eagle, Loggerhead Shrike, American Bittern, Wood Turtle, and Blandings Turtle. Rare plants include Sullivant's Milkweed, Kitten-tails, Jointed Sedge, Davis's Sedge, Sterile Sedge, Ram's head Lady's Slipper, Linear-leaved Sundew, Beaked Spike-rush, Dwarf Trout Lily, Slender Naiad, Tubercled Rein-orchid, Hair-like Beak-rush, Whorled Nut-rush, Valerian, Twisted Yellow-eyed Grass.

# **Property Description**

(see maps)

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## **CONSERVATION CONCERNS**

The major conservation issue in the Big Woods is preservation of remnant forests. Another large concern is the water quality of the Minnesota River. Agricultural practices have increased sediment and phosphorous in the river, which impacts the clarity, or clearness, of the water. Another concern is how to control development (agricultural and urban) so wetlands, forest land and other natural landscapes are preserved.

## Central Hardwoods

Cover Type Number(s): 1

Cover Type Acres: 23.8

### Cover Type Description:

The original Central Hardwood stands consisted primarily of oak and hickory, with scattered species such as black cherry, maple, basswood, ash, and black walnut. However, the natural trend is for the shade tolerant tree species such as maple and basswood to replace the shade intolerant trees such as the oaks. In general, this is not happening in your woodlot. Instead, your Bur oaks have survived any harvesting and the maple and basswood were limited due probably to grazing. In my opinion the fact that oak has remained a large component of the stand is very good. Maple/Basswood stands are not a bad thing, but seem to be dominating the landscape due to the lack of fire that was present during presettlement time, and allowed the oak to thrive. Oak has fire resistant bark versus many of the other tree species.

There are two separate woodlots on the property that are separated by a narrow strip of agricultural land. I am guessing that the woodlots to the north, and possibly to the south, were grazed at one time, possibly as many as 20 years ago. This is what took place of fire and prevented the shade tolerant trees from establishing.

Of course it also prevented the regeneration of oak until recently when the grazing was halted. The area was primarily older Red and Bur Oak while pastured. It has since grown in with a variety of species including: Red Oak, Bur Oak, Elm, Black Cherry, Green Ash, Aspen and Hackberry. The Red and Bur Oak regenerated from existing trees in the woodlot, while the other species flew in from adjacent woods and birds depositing seeds. Unfortunately, as you know, there are other things growing out there as well. The European Buckthorn and Box Elder were taking over in the understory. This is a problem that you have been working on, and in the long run it will greatly enhance the woodlot to eradicate these species. Fortunately, there is an excellent amount of naturally regenerated Red and Bur Oak. I need to stress to you that the amount of naturally regenerated Red Oak out there is very good. This creates great hope to me that this area will maintain its oak component. Coupled with your desire to eradicate the Buckthorn, I believe the stand can and will be salvaged. The other species of trees present are desired, but Oak should always be favored.

The older Bur and Red Oak are beginning to decline now, and are past maturity in most cases. This means that they are ready to be removed if you ever want to consider harvesting them for merchantable value. It also means they would probably bring lower timber values due to their over-maturity and the effects of past grazing operations. They create some value to the wildlife via food from acorns, and to the woodlot via natural regeneration source from the acorns, however over-mature trees can easily decline in acorn production from year to year if they are negatively impacted by insect, drought, etc. A timber sale is an option to consider at this point, and probably should have been done ten years ago. The timber sale would be done to remove mature oak and other species and would create openings for current seedlings to grow. It is the next generation that will see the major timber benefits from this woodlot.

As we discussed and eventually found out the culprits, there is a health issue with many, but not all, of your sapling Red oaks. As you know, I took the Minnesota DNR Forest Health Specialist to your

woodlot this past summer. We took samples and he determined that in the dormant season of 1999-2000, squirrels had stripped the bark off of many young pole-sized Red oaks to assist in building their nests. Apparently he had seen this before in rare instances, over the years. The main effect on your trees will be a weak top at about 20-25 feet and possibly some heart rot that could go all the way up and down the center of those trees affected.

**Cover Type Objective:**

Your main objective is to maintain a healthy, vigorous stand of quality hardwoods. To manage the woodlot in a way that will benefit wildlife and produce quality timber products in the future, as well as create recreational opportunities for you and your family.

**Recommended Activities to Achieve Cover Type Objective:**

You have completed much of the hard work needed to maintain a healthy stand of quality hardwoods. As a follow up, you will need to pull any small Buckthorn out of the ground and cut and treat any Buckthorn that was missed. Now that the seed source is gone from your woods, it should not become a real big problem once you pull the seedling Buckthorn. However, there is Buckthorn in the neighboring woods, no doubt, and it will always be something to keep an eye out for.

You will need to release any advanced natural regeneration of Oak in the future. This can be done by simply identifying any oak seedlings and saplings, and then looking around each one and determining if they are being hindered by a lesser quality species, or possibly by an Oak tree with the squirrel problem or poor form etc.. Oaks are non-tolerant of shade, and should be released accordingly.

You could consider a timber sale on the property. After my inventory I feel there is enough volume and some quality timber that would attract some interest from loggers and timber buyers. I can assist you with this process if you decide to attempt a timber sale. We offer a wide variety of assistance that ranges from verbal advice to marking the sale, distributing bid solicitation and conducting follow up log scaling if needed. A timber sale would, of course, change the complexity and overall look of the woodlots. In general the immediate impact of the timber sale would not be aesthetically pleasing. This should be considered since you use the area for recreation purposes as well. If you are interested in a timber sale, or if you are approached buy a timber buyer, please contact the Forestry office first, and we can discuss your options. You certainly do not have to go through the Forestry office, but many times with some simple advice, we can earn you hundreds, even thousands of dollars.

I would recommend reducing the amount of trails that are currently present in your south woodlot. Trails that end up with at least some travel are subject to soil compaction, which in turn can cause growth problems and even death to adjacent trees. We have seen extensive trail systems change drainage in woodlots over the long term and eventually cause water to pool in areas and smother trees to the point of killing large numbers. With that in mind I would recommend establishing one quality trail with a few stringers that extend from the main trail. Try to use high ground or ridges wherever possible to prevent water pooling over time.

**Stewardship Binder References:** (for additional information)

Tab

Reference Name

Assistance Directory . . . . . MN Natural Resource Conservation Programs  
Forest Products. . . . . Wood and Water  
Tree Species . . . . . Central Hardwoods  
Soil. . . . . Forestry and Soil  
Timber Stand Imp. . . . . Deciduous

## **Agricultural Fields**

**Cover Type Number(s):** 2

**Cover Type Acres:** 23.1

### **Cover Type Description:**

This area is agricultural and has been for many years. The area is utilized for row crops such as corn and beans.

### **Cover Type Objective:**

You stated an interest in converting the agricultural areas to forest cover. I would suggest you consider the help of financial assistance through the Conservation Reserve Program or other programs. If and when there is a sign-up, and I believe there will be one prior to 2004, you may want to consider the following recommendations.

Please contact me for more information on cost-share options if you want to plant trees or grasses in these areas. If I hear of any CRP sign-up I will contact you. As of right now there is an area on your property that is eligible for the Continuous CRP sign-up. Right now you could enroll an area that would buffer the wetland in the southeast corner. I believe the buffer would go out about 180 feet from the wetland area. There is an incentive payment of \$100-150/acre just for signing up and then cost-share of up to 90% to establish the trees, and an annual payment of about \$85/acre enrolled for the 10-15 year program. This is one of, if not the best, programs for a landowner that I have ever come across, please consider enrolling. If you are at all interested, call me immediately.

The following is an example of a detail plan of action for planting trees.

### **Recommended Activities to Achieve Cover Type Objective:**

It would be practical to plant this site using a machine planter. Planting a good variety of hardwoods that the site will support would improve wildlife habitat for some species and turn this into income producing forest.

#### Below is a typical scenario for machine planting:

1. For fields currently in hay cover, no additional work to establish a temporary cover crop is needed.
2. If the field is currently in crop residue, the area will need to have a cover crop established to hold soil and reduce weed encroachment until trees become well established. You should seed a mixture of timothy, oats, and clover according to NRCS standards.
3. Kill Box Elder within 50 feet of fields to be planted to trees by girdling them and applying Tordon RTU herbicide. This will reduce the number of Box Elder that seed into the field



after trees are planted.

4. Site preparation. In portions of fields to be planted to trees, mow 3 to 6 foot wide bands with centers of mowed bands 10 feet apart. Mowing bands will increase herbicide effectiveness and mark tree rows so they can be found to plant in when seedlings arrive in the spring.

5. Order trees. Order species and number of trees indicated on you project plan as soon as we send you a tree order for the state nursery.

6. Late September to early October. About 2 weeks after mowing bands, band spray \*Roundup and Princep at label rates. Spray 3 to 4 foot wide bands centered on swaths previously mowed. Roundup is a contact herbicide that will kill anything green and Simazine is a pre-emergent grass herbicide that will prevent grasses from quickly seeding back into an area.

7. Mid to late April. Machine or hand plant trees according to planting scheme on project plan.

8. Follow-up care:

A. It is helpful to mow in between tree rows for the first 2 to 3 years after planting. This helps to control rodents and encroaching Box Elder.

B. It will probably be necessary to do a follow-up band spray of Simazine to control encroaching grasses within 2 years of planting.

C. Make arrangements for a vendor to do any of the work you will be unable to complete by yourself.

Project:           Planting-Hardwoods-Machin   Acres

#### **Alternative Cover Type Objective:**

Plant trees by way of Direct Seeding. Direct seeding is a new method of planting trees using the actual seed from local seed sources. The following are the advantages and disadvantages of direct seeding when comparing it to conventional row planting:

#### **Advantages:**

**-Better and quicker establishment:** establishment of thousands of seedlings per acre rather than hundreds per acre with traditional plantings. This allows trees to reach crown closure and begin shading out grass and weed competition earlier. Follow-up grass and weed control typically only needs to be done for 2-3 years after seeding, instead of 5-7 years with seedling planting.

**-Higher quality timber:** Greater density of seedlings means higher quality

hardwood sawlogs will be grown. Trees will be forced to grow up straighter due to side competition from nearby stems and will also shade out some of their own lower limbs, resulting in less need for pruning.

**-Better use of natural selection:** Large numbers of seed and species mean specimens best suited to a particular site will dominate.

**-Better adaptation to small differences in site conditions:** Small variances in site conditions are not planned for in seedling plantings. With direct seeding, species and specimens best suited to small areas that are wetter or drier than the overall site will take over in those areas.

**-More natural appearance:** Direct seeding is a much closer approximation of Mother Nature's hardwood establishment method than seedling planting rows.

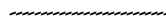
**-Better ability to withstand animal predation:** Far larger number of stems per acre with direct seeding means that animals such as deer, while still causing damage by browsing, will be less likely to devastate an area than with a traditional plantation.

**Disadvantages:**

**-Higher initial establishment cost:** Initial cost can be 30% higher for seeding than planting (\$500/acre vs. \$350/acre average).

**-Inconsistent seed availability:** Species such as red oak are inconsistent seed producers, so seed may not be available every year. Some years, supplemental seedling planting may be necessary for oaks.

If you are interested in Direct Seeding some of your agricultural land into a forest cover, please contact the DNR Forestry office, and we can answer any questions you may have. We will also be able to write out a step-by-step plan showing how to establish the trees.



**Stewardship Binder References:** (for additional information)

<u>Tab</u>	<u>Reference Name</u>
Regeneration. . . . .	Tree Planting
Assistance Direct. . . . .	MN Natural Resource Conservation Programs
Direct Seeding Insert. . .	Direct Seeding Handout
Lowland Grasses/Wetland	

## Lowland Grasses/Wetland

Cover Type Number(s): 3

Cover Type Acres: 3.1

### Cover Type Description:

There is 3.1 acres of lowland grasses and or wetlands on your property. These low areas were probably partially forested in presettlement times. I would venture a guess that these areas were used for agricultural purposes in the distant past. However, the area has not been pastured or cropped for several years, as far as I can tell. The area is almost completely covered with Reeds Canary grass, with the exception being open water. I am not sure if the open water is present year round. Reeds Canary grass is not a native grass to Minnesota, and is very invasive and hard to control, or eliminate, once established. In general, I do not recommend planting trees into Reeds Canary grass; the trees simply cannot compete with the grass. Usually low ground dominated by Reeds Canary grass is left alone, which is fine since it does create quality habitat for nesting birds and such.

Wetlands serve a purpose for the natural environment, and that is to filter surface runoff that is on its way to rivers, creeks or aquifers. Even this small 3-acre wetland serves that purpose for the small area that drains into it.

As described earlier, this area could be buffered with trees on the south side of the wetland through the Conservation Reserve Program.

### Cover Type Objective:

It seems to me that your objective for the area is to maintain it as a natural area, and possibly enhance it for wildlife if possible. I think the grasses are essential for the pheasants, and wood duck houses could enhance the area for wildlife. Other than that, as a forester, I'm not sure what else you can do to enhance the area, other than buffer it with the tree planting. Buffering the wetland with trees will simply stabilize the soil adjacent to the wetland which will in turn increase the effectiveness of the wetland as a filtering agent.

### Recommended Activities to Achieve Cover Type Objective:

Establish the forested buffer through CRP.

If there are other wildlife enhancement projects you have in mind you may consider contacting the DNR Wildlife Area office at 507-455-5841. Another source of information would be Tim Labs at the Rice County Soil and Water District office, (507) 334-5408.

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### Stewardship Binder References: (for additional information)

| <u>Tab</u> | <u>Reference Name</u>                                          |
|------------|----------------------------------------------------------------|
|            | Assistance Direct. . MN Natural Resource Conservation Programs |

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## FUTURE FOREST STEWARDSHIP PROJECTS

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| <u>SCHEDULED<br/>YEAR</u> | <u>COVER<br/>TYPE</u> | <u>PROJECT<br/>PRESCRIPTION</u>                    | <u>ACRES/<br/>UNITS</u> | <u>CHECK IF<br/>COMPLETED</u> |
|---------------------------|-----------------------|----------------------------------------------------|-------------------------|-------------------------------|
| 2003/04                   | 2/3                   | Reforestation project (Wetland Buffer)             | 1-3 Acres               |                               |
| 2004/05                   | 2                     | Reforestation of Cropland via CRP (direct seeding) | 6.7 Acres               |                               |
| Continuous                | 1                     | Timber Stand Improvement work (Buckthorn removal)  | 24 Acres                |                               |
| 2004                      | 1                     | Timber Sale on Central Hardwoods                   | 24 Acres                |                               |

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**For More Cost-Share Information Contact:**

Faribault Area DNR Forestry Office  
1810 NW 30th Street  
Faribault, MN 55021  
507-333-2012

Office hours are 8:00 to 4:30.  
The best time to contact someone is early or late in the day.

PLEASE RETURN THIS REGISTRATION FORM

Registration entitles you to:

- A. Be eligible for financial assistance (cost-share) programs.
- B. Receive free reference material updates.

*To make a donation and/or to register your plan, please complete and send this form in the attached envelope. Thank you.*

I believe in the principles of forest stewardship. As the current owner and steward of the land, I will maintain or enhance the forest ecosystem's natural ability to provide a wide variety of sustainable benefits. By receiving and registering this plan, I am not limiting any of my private property rights. Using this plan as a general guide, I will use, care for, and enjoy this woodland treasure.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_ Date: \_\_\_\_\_

Please make any donation payable to: DNR GIFT FUND  
Amount enclosed: \$\_\_\_\_\_

**NOTE: Plan registration does not require a donation.**

*~ Comments and suggestions are welcome - Use reverse side ~*

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Landowner Name: Joe Smith  
Landowner Address: 5555 Green Drive  
Faribault, MN 55021

Home Telephone #: 507-xxx-xxxx

Woodland Stewardship Plan acres: 50

County where woodland is located: Steele  
Landowner file #: 5450017  
Plan Provider's Name: Your Name  
Agency or Company providing plan: Division of Forestry  
MN Woodland Stewardship Plan - Edition:  
DNR-Forestry office number of plan provider - RAN#: 445



STATE OF  
MINNESOTA  
DEPARTMENT OF NATURAL RESOURCES

Division of Forestry

1810 NW 30th Street,  
Faribault, MN 55021  
507-333-2012

January 15, 2003

Joe Smith  
5555 Green Drive  
Faribault, MN 55021

Dear Joe,

You have a splendid piece of property. Because of your strong concern for the environment and your desire to work with the land, I'm pleased to provide you this Woodland Stewardship Plan.

The plan has three components. The first segment describes your property and offers management options and recommendations. It matches your goals with the potential of your land and is located behind the pink tab. The middle section is a place to keep records (green tabs). The remainder is reference material (white tabs).

This plan offers mostly conceptual recommendations and alternatives. Should you decide to undertake specific activities, I will follow up with a short, but specific project plan.

One of the first management opportunities I feel you should undertake is the enrollment into the Conservation Reserve Program (CRP) to buffer the existing wetland with trees.

Additional opportunities include continuing the improvement work in the woods. Do not let the initial TSI work go to waste by allowing another understory of Buckthorn to get established.

I am prepared to provide the field assistance needed to carry out your plan. (On some projects we may refer you to more appropriate professional support.) Financial assistance may be available for activities that do not generate revenue. Feel free to contact me if you have any questions or need additional information.

I strongly encourage you to sign and return the accompanying plan registration. Registration will assure you of plan updates and allow you to apply for cost-sharing. Please note that a donation is requested when you register your plan. The donation will be used to help print update material and provide other landowners with a similar plan, **but is not required!**

As property owner and land steward, you have the opportunities and responsibilities of protecting, improving, using, and enjoying your woodland. I wish you well and look forward to working with you.

Yours for conservation,

Your name

PS I've enclosed a "field copy" of the plan in the front pocket.