

**IOWA WOODLAND STEWARDSHIP PLAN**  
Iowa Department of Natural Resources  
Forestry Bureau  
2/11/2003

<b>LANDOWNER:</b> <b>ADDRESS:</b> <b>PHONE:</b> <b>COUNTY:</b> <b>ACRES:</b> 105 <b>LOCATION:</b> <b>FORESTER:</b>
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**INTRODUCTION**

This stewardship plan recommends and identifies practices that will help you obtain your woodland management objectives. High quality, managed woodlands, leave a legacy of quality wood products, improved wildlife habitats, protected watersheds, and woodland recreational opportunities for future generations to enjoy. This plan is required as a pre-condition for SIP and other federal program cost-share eligibility.

The general woodland management information, found at the end of this plan, is an overview of basic woodland management principles. Please review this information to increase your understanding of general forest management concepts. A listing of other publications that you can purchase to increase your knowledge of general woodland management principles is included in the “Landowner Assistance” portion of this plan.

**MANAGEMENT OBJECTIVES**

- 1). Improve woodland wildlife habitat for deer and turkeys.
  - A). Improve mast production.
  - B). Improve nesting, hiding, fawning, and loafing cover.
  - C). Improve understory browse.
  
- 2). Maintain a healthy, sustainable woodland
  - A). Protect woodland from grazing.
  - B). Maintain proper tree stocking levels.
  - C). Monitor for disease and insect problems.
  
- 3). Protect the woodland soil from erosion and protect water quality.
  - A). Utilize BMP’s when doing woodland management work.

## **GENERAL PROPERTY OVERVIEW**

### **Property Description**

The 105 acre area is predominantly a fully-stocked upland oak-hickory woodland. Current woodland composition by tree species is 22% bur oak, 27% white oak, 5 % northern red oak, 9% black oak, 35% shagbark hickory, and the remainder in elm, cottonwood, and black cherry. Even though there are scattered, larger diameter oaks throughout most portions of the woodland, the average tree diameter for dominant and co-dominant trees (tallest trees in the woodland) is about 8.4 inches. The great thing about your woodland is that 98% of the trees are mast producing tree species, and 27% are white oaks, which produce the favored acorns for deer and turkeys.

Your woodland is adequately stocked at this time as far as tree growth and health is concerned. You really don't need to do anything more at this time than to keep the woodland protected from grazing to enjoy what you have now for many years. However, if you want to make your property a great place for deer and turkeys to be and actually increase the numbers of birds and animals that stay in the area, there are management practices that you can use to specifically benefit deer and turkeys.

Since the majority of the oaks and hickories are pole-sized (4-10 inches in diameter), many of your potential best mast producers are crowded by other trees which reduces tree crown expansion and greatly reduces mast production. Releasing the tops of 15 – 30 crowded oaks per acre can double tree diameter growth rates and increase mast production 7-fold.

Most of your woodland under-story is heavily shaded by the existing tree cover. As such, it lacks both the density and diversity of early successional plant growth and tree seedlings to provide optimum cover and food for deer and turkeys. Doing the crop tree release work in the over-story as suggested above will let in some sunlight to help promote under-story plant development. However, selected areas can be improved further by doing some mid-story cleaning of weed trees, and over-topped trees to let even more sunlight reach the forest floor.

Your woodland is surrounded by a larger woodland and CRP fields. Even though you have one small opening for a food plot at the south end of your property, you can improve your woodland for deer and turkey habitat by providing more small irregular shaped openings along ridgetops and possibly making a few more food plots to improve spring, summer, and early fall food sources for deer and turkeys.

Based upon the observations that I made when I inventoried your woodland, I have divided your property into four different stands or areas in order to discuss possible habitat improvements that can be made for attracting and holding more deer and turkeys. Each stand or area can benefit from one or more of the above practices that will vary in intensity from one area to the next. These management prescriptions are outlined in the specific stand/area recommendations section of this plan.

## **Historical & Cultural Resources**

No historical or cultural sites were encountered or observed or known to exist in or near the management area at this time. Such items would include buildings and structures of historical or cultural significance, human burial sites, special land features, and artifacts. If such things are ever observed or discovered, those sites should be located, preserved, and avoided when implementing woodland management activities. It is always best to thoroughly examine a project area before implementing a management activity, especially if major ground disturbance must be involved. Heritage and cultural resources are not renewable. Once destroyed, you have lost a unique part of history.

If human remains are accidentally uncovered, you should cease work and contact local law enforcement officials. If you suspect that artifacts may be in an area or you accidentally uncover artifacts or discover a structure that you think has historical significance, please protect the item or locate the site and contact the State Archaeologist or contact 515-281-8524 for information and assistance.

The following are practices that will minimize the chances of accidentally destroying items of cultural or historical significance when doing woodland management activities:

- Thoroughly inspect a project area before working. Be particularly careful of working around unusual looking areas such as obvious mounds or groups of mounds, or square and rectangular shaped depressions or extrusions.
- Minimize ground disturbance when tree planting, logging, and doing woodland improvement work. Cut trees and use heavy equipment only when the ground is frozen, dry, or firm.
- Be especially careful of disturbing soil around streams and riparian (streambank) areas.
- Locate trails and management access roads along natural land contours.

## **WOODLAND ECOSYSTEM CONSIDERATIONS**

Your woodland is an integral component of a natural ecosystem. Woodland management activities done for one purpose, affect all the other parts of the system. As such, the importance and protection of other ecosystem components, whether directly or indirectly related to your management objectives, must be considered before, during, and following implementing woodland management activities. Below are the primary areas of consideration:

### **General Woodland Management Considerations**

Regardless of your specific management objectives, active management is often needed to keep Iowa woodlands healthy, sustainable, and renewable. Keeping a woodland properly stocked with desirable tree species and protected from external damaging influences is the key to the sustainability of our woodland resources. General principles to follow include:

- Protect your woodland from damaging livestock grazing , wildfire, and soil erosion.
- Monitor for obvious damaging disease and insect problems
- Avoid over-harvesting (harvesting more timber volume than grows in a given time period) and selective harvesting that discourages the natural regeneration of desirable tree species.
- Periodically control the encroachment of undesirable tree species or invasive unwanted plant and shrub species in your woodland.
- Keep the woodland healthy by maintaining proper tree stocking levels. Properly stocked woodlands allow dominant desirable trees to fully utilize available growing space, moisture, and sunlight. This results in vigorous tree growth and extended tree longevity. Under-stocked woodlands encourage the invasion of undesirable weed tree species and plants. Over-stocked woodlands cause stagnated tree growth and make woodlands more prone to disease and insect problems. Practices needed periodically to adjust stocking levels may include thinning, tree planting, and other vegetation manipulation to stimulate the natural re-production of desirable tree species.

## **Soils Considerations**

The dominant soil types in your woodland are:

Upland - 65F Lindley Loam, 425D Keswick Loam  
Bottom Drainage - 730 C Cantril Nodaway Complex

These soil types are characterized as having shallow topsoils and moderate to high subsoil clay contents that somewhat restrict internal soil water permeability, making tree growth slower than on soil types that have better internal drainage. However, the tree growth suitability site indexes of 50 to 60 mean that the soil types are adequate to support healthy tree growth if tree numbers are kept at normal stocking levels. Generally, the best tree growth will occur where topsoils are deepest, drainage is best, and available soil moisture is highest. These areas are on North and East facing slopes and on toeslopes, protected coves, and second bottoms.

The unique aspect of your woodland soils is that they have a well-developed litter layer of decaying leaves, branches, and twigs. This litter layer intercepts and absorbs most of the rainfall that reaches the forest floor and sends it underground to streams, minimizing surface runoff and soil erosion. As long as your woodland is fully-stocked with tree cover, this litter layer will maintain itself. When this litter layer is disturbed or compacted, it becomes highly erosive, especially on slopes greater than 15%. This is why you should always keep your woodland from being grazed by livestock and minimize soil disturbance when implementing woodland management activities. If and when woodland soils are disturbed, they should be re-vegetated as quickly as possible to reduce the erosion hazard.

## **Wildlife Considerations**

Your property, including the upland wooded areas, pond, surrounding woodland, adjacent CRP fields, and small food plot, already produces a variety food and cover that benefits deer and turkeys as well as many other wildlife species. There are however, a few things that you can do to improve the quality of what you already have.

Attached with the other information supplied with this plan, is a document entitled, “*General Woodland Wildlife Habitat Improvement Techniques*”. This covers the practices that I will recommend for each management area to improve the habitat that you already have.

## **Endangered Species Considerations**

Threatened and endangered plant and wildlife species and their habitats should be protected when conducting woodland management activities. At this time, there were no observed threatened or endangered plant or wildlife species observed on the management area or that would be adversely impacted by woodland management activities. However, Clarke County

is listed as having habitat that could be used by the Indiana Bat. Also, a Long-Eared Owl was observed nesting in a conifer plantation approximately 2 miles west of your property. The Long-Eared Owl is listed as being “Threatened”.

The Long-Eared Owl rarely nests in Iowa and when it does, it uses other bird nests like crow nests that are located in cedar or pine stands. It mostly feeds on mice. Your property does not contain suitable nesting habitat for this owl and none of the recommended management practices for you woodland will adversely effect or endanger this owl.

The Indiana Bat is a federal and state listed endangered species that has been found in Clarke County Nursery colonies of the bat exist primarily between the months of May and August beneath the loose or peeling bark of certain trees located along streams and rivers and in adjacent upland forest areas. Your woodland area may be suitable summer Indiana Bat habitat.

Timber stand improvement, timber harvests, and other forest management activities are not yet restricted in bat summer habitat areas on private property. However, the Iowa Department of Natural Resources Forestry Bureau recognizes the importance of the Indiana bat as a vital forest ecosystem component and encourages you to manage your woodland in accordance with guidelines that will enhance and protect the bat habitat. These guidelines are included at the end of this plan. Basically, the guidelines determine that woodland management practices should not include the cutting down of potential roost trees (mostly, shagbark hickories) 9 inches in diameter and larger between April 1 and September 30. Such trees can be left standing live or dead, or killed standing during that time period.

For a complete current listing of threatened and endangered plant and wildlife species in Iowa, please contact John Pearson (plants 515-281-8676) or Daryl Howell (wildlife 515-281-8524). They also have listing of specialists that you can hire to do a more comprehensive survey on specific sites.

### **Water Quality Considerations**

Soil erosion and subsequent siltation is the leading cause of poor water quality in Iowa. Properly managed, non-grazed woodlands have well developed soil profiles, complete with a top covering of woodland litter (decaying leaves, twigs, branches). These soil profiles intercept rainfall and channel it into underground flow, filtering out sediment and minimizing surface soil erosion. Once this litter layer is disturbed or compacted, especially on slopes greater than 15%, it becomes highly erosive. Since your woodland is part of a larger watershed, it drains water into existing streams on other properties. Consequently, you should do everything possible to minimize soil disturbance when implementing woodland management practices and to “fix” problem areas as much as possible.

The following are examples of practices called BMP’s (Best Management Practices). These and others are covered in great detail in the BMP book supplied with this plan. Below, are some general considerations that you should be aware of to minimize soil erosion originating from your woodland:

- Eliminate livestock grazing from woodland management areas.

- Limit road access for management purposes to ridgetops.
- Minimize the use of heavy, rubber-tired equipment in management areas.
- Protect sensitive areas like streambanks (riparian areas) by leaving forested buffer strips from 50 to 150 feet wide (depending on stream width and topography) next to streams.
- Route trails along natural land contours.
- Minimize soil disturbance during logging or when implementing woodland improvement practices by cutting and dragging trees when the ground is dry, firm, or frozen.
- Avoid piling trees and branches anywhere in the management area, especially next to streambanks and in stream channels.
- If bare soil areas are created or existing trails are not properly constructed, use soil stabilization practices to minimize the existing erosion hazard. These may include mulching, seeding, and building sediment control structures. Your forester can recommend the proper practice.

## **INDIVIDUAL STAND/AREA MANAGEMENT RECOMMENDATIONS**

(Required- stands by cover type and area, description of dominant vegetation, tree species, size class.)

The following recommendations are practices that will help you meet your management objectives. The number and quality of benefits you receive from woodland management depend on how much effort you put in to completing recommended practices. Each practice should be done **within the time frame** suggested to receive maximum benefits from management.

**Please refer to the attached aerial photo of the property for individual stand or management area locations.**

Stand/Area: A (See Attached Photo for area or stand location)

Acres: 32

This portion of the woodland is currently properly stocked with 73% oaks and 26% shagbark hickory. The majority of the trees are pole-sized, averaging about 8.6 inches in diameter. Scattered, larger diameter white and bur oaks exist throughout the area providing mast production for deer and turkeys, as well as being dominant roost trees for turkeys. The great thing about this area is that 61% of the oaks are white oaks, and they average about 11 inches in diameter, meaning that this portion of the woodland has the highest potential for producing acorn mast that is preferred by deer and turkeys. Adequate ground cover in many areas of this stand is lacking due to over-story tree shading and the presence of shade tolerant ironwood in the woodland understory.

Recommended Management Prescriptions:

(1). You can improve mast production for deer and turkeys in this portion of the woodland by doing light crop tree release thinning to release crowded oaks from other tree competition. This method over-story thinning helps selected tree crowns expand and can increase acorn production 7-fold. The added benefit is that the tops from the trees that you remove can be left on the ground to provide deer browse and turkey nesting cover. This type of thinning also allows more light to reach the woodland understory to stimulate more dense and diverse plant and shrub growth to improve deer and turkey cover.

The technical aspects of doing crop tree release are explained in detail in the “Woodland Improvement Guide”, attached with this plan. You only need to do a “light” oak release in this area. Concentrate on releasing only the crowded good mast producing white oaks first, then the other oaks. There may only be 15 to 20 trees per acre or less that need to be



released. If you decide to do this, I can mark the trees for you or help you determine which trees need to be releases and show you how to do it properly.

2). The greater need in this portion of the woodland is to promote the development of more dense and diverse under-story vegetation for cover and food for deer and turkeys. You can do this by thinning out undesirable mid-story and under-story trees and brush to let more sunlight in and cause more rapid development of early successional plants. These plants will improve turkey nesting, deer fawning and hiding cover, deer browse, and will attract a wider variety of insects that are the primary food for turkey poults.

To do this, you can remove the shade tolerant under-story ironwood, prickly ash, mid-story elms and other mid-story trees that are over-topped by the dominant tree canopy. You don't need to treat the entire under-story, but pick spots adjacent to ridgetops and on middle or low slope areas on south facing slopes that are protected areas that both deer and turkeys like to hide in. Once again, I can meet with you to pinpoint these areas and show you how to do the treatment.

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Stand/Area: B (See Attached Photo for area or stand location)

Acres: 25

This portion of the woodland is also fully stocked at this time with bur oak (34%), white oak (7%), black oak (13 %), shagbark hickory (44%), and elm. The major difference in this portion of the woodland is that it has the lowest percentage of white oaks. Here, bur oak and shagbark hickory are the more dominant tree species, with a good component of black oaks for mast tree diversity. Once again, scattered larger diameter bur oaks should be left and managed as key mast producers and turkey roosting trees.

Recommended Management Prescriptions:

(1). Since this area has fewer white oaks, I recommend finding all of the crowded white oaks in this stand and releasing them to improve mast production. Once this is done, you can determine whether or not you need to continue releasing other oaks.

(2) Since few natural openings exist in this portion of the woodland, it would be an excellent place to route some small, cleared trails down ridges to provide turkey dusting areas and give you access for hunting and management. The "edge" vegetation can be periodically mowed or "brush cut" to keep it thick for transitional cover .

Stand/Area: C (See Attached Photo for area or stand location)

Acres: 39

This portion of the woodland is also fully stocked with bur oak (25%), white oak (21%), red oak (12%), black oak (9%), and hickory (31%). Average tree diameter for the stand is 8.5 inches, but the average diameter for the white oaks is 10 inches. This portion of the woodland has the most even distribution of mast producing tree species. It also has the most dense pockets of ironwood in the under-story.

Recommended Management Prescriptions:

(1). As with the other portions of your woodland, I recommend doing some oak and hickory crop tree release to improve mast production and some under-story and mid-story cleaning work to stimulate plant growth for cover improvement. Crop tree release work in this area should be done to favor mast production on all oak species as evenly as possible to provide a diversity of good mast producers.

(2). This stand also has a small, almost pure shagbark hickory pole stand located at the south end of the property, west of the drainage that feeds the pond. You can eventually do some crop tree release work in this stand to improve hickory nut production, but this should be low priority since you have other areas with oak components to improve.

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Stand/Area: D (See Attached Photo for area or stand location)

Acres: 9

These are portions of your woodland that have been cut over in the past and have regenerated naturally to sapling and pole-sized stands of bur oak, hickory, cherry, black oak, elm, and honeylocust. These stands are becoming extremely crowded at this time and would benefit greatly from a first time thinning to remove some of the weed tree species such as elm and honeylocust and to release the tops of the crowded oaks. Oaks that are released when they are this size respond much faster to release than the other oaks in the rest of the woodland that are 8 – 10 inches in diameter.

Recommended Management Prescriptions:

(1). These should be priority areas for oak crop tree release. Especially these areas that are located adjacent to the main ridge trail that the cabin is located on. I recommend cutting or killing the honeylocust and elm weed trees first, then releasing the crowded oaks to improve

crown expansion. Doing this along the main trail will create an excellent transition zone between the opening and the larger trees in the adjacent woodland.

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### **Other Recommendations for the Entire Woodland:**

(1) Weed tree removal consists of the cutting and/or poisoning of tree and shrub species in your woodland that you want to eradicate from the woodland. Trees like honeylocust, ironwood, and prickly ash tend to invade woodlands and occupy space that more desirable tree species could be utilizing. In addition, these weed trees often take over openings or completely occupy mid-story stand positions and shade understories so that natural and planted tree seedlings can't become established or survive. In the case of honeylocust, they could be dangerous humans.

Weed trees need to be killed (poisoned) to prevent re-sprouting. Chemicals suitable for weed tree control can be applied as either axe-frill or cut stump treatments. Suitable chemicals include Tordon RTU, Chopper RTU, Pathway, and Roundup. Application rates, usage, and times of application will vary according to the chemical used. Always follow product labeling when using any chemical weed tree control. These chemicals can be obtained at most local farm chemical dealerships.

Weed shrub species like multi-flora rose can be controlled with Escort and Crossbow. These Chemicals are applied as foliar sprays during the growing season when the shrubs are fully leafed out.

Chemicals should never be used to kill or stump treat oaks and hickories that are removed or killed during crop tree release practices. There is a possibility that chemicals can translocate through root grafting from a treated tree to a non-treated tree of the same species.

(2). The larger diameter scattered oaks and hickories that exist in your woodland should be retained in the woodland as long as possible for both mast producers and for turkey roosting trees.

(3). The small food plot that you have at the south edge of the property is an excellent idea for improving habitat diversity. If you can create the room to have more, you will attract more deer and turkeys. One of my favorite types of food plots are perennial clover, with Ladino White Clover being the most preferred. I have included information on planting clover food plots with this plan.

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## **SUMMARY**

Following the recommendations outlined in this plan will get you off to a good start in taking an active role in realizing your management objectives for your woodland.

Woodland management is an ongoing process. As your woodland matures and you begin to implement management practices, your woodland structure and composition will change. Some practices, like thinnings, may need to be periodically repeated to get the desired results.

Your objectives for management may also change. Consequently, your Woodland Stewardship Plan may need to be updated from time to time.

Please contact me for assistance or information about all of your woodland management needs. I provide on-site technical assistance and project planning for woodland improvement practices, timber harvesting, tree planting, prairie & savanna restoration, and woodland wildlife habitat improvement. Feel free to contact me anytime you have questions or need assistance at 641-782-6761.

## LANDOWNER ASSISTANCE

### 1). Forestry Service Vendors:

Forestry practices can be contracted with professional forestry service vendors to help in completing the actual field work. A complete listing of firms and individuals who provide services in Iowa is included for your reference.

### 2). Public and Private Organizations:

Public and private agencies which provide forestry related services and programs are listed in the ISU publication F-340, "Forestry Contacts and Organizations in Iowa", included in the general information section following this plan.

### 3). Additional Woodland Management Information:

Additional general woodland management information that you can obtain is listed as follows:

- Additional publications dealing with woodland management topics can be ordered from Iowa State University Extension using the publications list provided with this plan.
- A good reference to use as a practical guide for woodland owners is a book entitled, **Woodland Stewardship**. This is the training manual that we use at our Master Woodland Owner's Training Sessions. This book can be ordered by contacting the Minnesota Extension Service Distribution Center, University of Minnesota, 20 Coffey Hall, St. Paul, MN 55108. The phone number is 612-625-8173.
- For current information regarding woodland management in Iowa, you may want to have your name placed on the mailing list to receive the **Woodland Owners Newsletter**. This newsletter will give you up to date information on where and when Forestry Field Days and Master Woodland Manager Courses will be held. You can be placed on the newsletter list by calling ISU Forestry Extension at 515-294-1168.
- An excellent tree identification book, **Forest and Shade Trees of Iowa**, by Van Der Linden and Farrar, is available through the Iowa State University Press, Ames, IA 50010. This book is available at the Campus Book Store on the ISU campus.

**Best Management Practices** - a DNR forestry publication designed to help landowners protect water quality during and following woodland management activities. A copy of this is included with this plan. Additional copies are available by calling 515-281-5145 or writing the Iowa DNR, Wallace State Office Building, Des Moines, IA 50319.

#### 4). Landowner Cost-Share Assistance

State and federal cost-share assistance programs are available, depending on yearly funding, to offset the cost of certain woodland management practices. To qualify, you must sign-up for the practice at the appropriate government office (NRCS or FSA), have a written project plan (written or approved by the DNR District Forester), be approved for the funding, and successfully complete the practice within the given time frame. Cost-shared practices are generally funded at the 75% level and include tree planting, woodland improvement practices such as thinning, and wildlife habitat improvement practices. Contact my office for specific program information.

Other, private funding sources exist periodically for tree planting and woodland improvement work. These are funded by conservation based organizations such as Pheasants Forever, Quail Unlimited, Whitetails Unlimited, Ducks Unlimited, and the National Wild Turkey Federation. Check with your DNR wildlife biologist or your local chapters representing these organizations for funding specific projects.

