

FOREST MANAGEMENT PLAN

For the HARROLD WOODLAND

Prepared by Don Carlson-Purdue University Forester
November 2000
(Updated September 2004)

1. Legal Description and Location

NW ¼, Sec. 34, T33N, R8E in Whitley County. The property is generally located approximately 10 miles northwest of Columbia City by a small community called Etna. To get to the property, start at the intersection of US 30 and SR 5. Take SR 5 north for about 8 miles to CR 750 North. Turn east on CR 750 North for three miles to the southwest corner of the property.

Presently, there is no parking available on the property. The southwest corner is a good choice for the future parking area.

2. Physical Description

Upland Soils: (Rawson-Riddles-Morley) These soils are gently sloping, deep, and moderate to well drained and located on till plains and moraines. They have a moderate to high water availability and permeability. Trees tend to do well on these sites with few limitations except moderate erosion potential.

Lowland Soils: (Houghton-Pewamo-Rensselaer) This complex is composed of nearly, deep, very poorly drained soil found in depressions and drainage ways. They have very high water availability and slow to moderate permeability. These soils are typically saturated or ponded throughout the winter and early spring. The Houghton soil is particularly low and can be saturated or ponded throughout much of the year. The major limitations are windthrow hazards due to minimal rooting depth for trees and equipment accessibility from wet soils. Equipment usage should be limited to periods when the ground is frozen.

Topography: The land is relatively flat with a maximum elevation change of roughly 30 feet. The northern third of the established forest is very low and poorly drained. The remaining forest is slightly rolling with some small high spots and wetlands.

Acreage: The total property contains 144 +/- acres of which approximately 83 is established forest land while the remaining 61 acres are old agricultural fields which were planted to trees in 1993.

Property lines: The forest is bounded on south by CR 750 North and on the east by Etna Road (~CR 450 West). The remaining property lines are bordered by open agricultural fields.

3. Forest Description

- **Stand Characteristics:** The 83 acre established forest is basically two-storied due to the past grazing many years ago and the heavy timber harvest which occurred approximately 20-25 years ago.

There are several old field areas totaling about 61 acres that were planted to trees in 1993. The old field areas consisted of the entire strip along the northern edge of the property, the southwest end of the forest adjacent to CR 750N, and several more smaller border fields to square up the east property line.

- **Species Composition:** The southern half of the forest contains some higher ground and therefore tends to be better drained and thus contains a mix of hickory, elm, white and green ash, red, white, and black oak, sugar maple along with American beech, black walnut, and black cherry. The understory in these better drained sites contain a good mix or black cherry, sugar maple, and red oak that are heavily competing with other understory trees such as elm and ironwood.

As the elevation and soils change from being well drained to less well drained to very poorly drained, the species composition of the forest also changes. The less well drained areas contain a higher proportion of elm and hackberry along with black walnut, sugar maple, hickory, and black cherry. There are at least two pockets of quality Kentucky Coffeetree on these less well drained sites. The poorly drained sites contain primarily silver maple and cottonwood along with some willow in the excessively wet areas.

The oak component of the forest is nearly nonexistent in the northern two-thirds of the forest except for a few isolated red or white oaks and one or two very small pockets of swamp white oak.

- **General Size Classes:** As stated earlier, this forest is essentially a two aged forest due to the past grazing history and the timber harvest 20-25 years ago. This history has left the forest containing small to medium sawlog trees in the overstory and 3-12 inch trees in the understory or regeneration openings.
- **Stocking:** The stocking level is widely variable throughout the forest due to the variability of the elevation, soils, and past cutting history. For all trees greater than 3 inches in diameter, the basal area is 95.6 square feet per acre. When only trees greater than 9 inches are considered, the basal area is 74.4 square feet per acre. This high percentage of stocking in the lower size class is a direct result of the second age class of the forest.
- **Inventory Data:** See Appendix A, page 1-3

4. Unique Features

- Physical: This woodland has several agricultural drainages established which need to be maintained. The northeast corner of the established woodland has a tile drainage system that is intended to allow water to drain away from the property. There is a small open ditch cut through the middle of the woodlands that runs in a northeasterly direction. These drainage systems must not be disturbed without the consent of the county drainage board. No disturbance of the systems is planned or proposed.
- Biological: This forest provides excellent wildlife habitat for a variety of species, none of which are known to be endangered or threatened. The ponded areas provide for beneficial wooded wetland habitats.
- Cultural: none

5. History

- Acquisition Date: This property was acquired through an Annuity Trust Agreement on October 2, 1990.
- Fire: There is no direct evidence that the area has experience any fire damage.
- Grazing: In the distant past, most of this forest was probably grazed. Cattle have not been in this forest for at least the last 30 years.
- Inventory: An original variable plot inventory was conducted in 1993 to roughly determine the stocking on the forest and quantity of timber available. Continuous forest inventory (CFI) plots were installed during August 2000. No other forest inventories have been completed to date.
- Installation of Research Plots: No record of past research has been found. However, there are several black tubes wired to small trees indicating that at least one research project was started in the past.
- Harvests: It is estimated that a timber harvest occurred roughly 25-30 years ago. At that time, it is likely that many of the trees harvested were medium to large saw timber trees. Some small groups of quality trees were not harvested for unknown reasons. There are some areas where the species composition has been altered reflecting a higher concentration of hickory and poor quality trees. The last harvest also resulted in creating large semi open areas which have regenerated to sugar maple, ash, elm, basswood, cherry, oak, ironwood, and walnut
- Specific Management Activities: Vine control has been completed on roughly one third of the forest. The remaining vine control work will be completed prior to harvesting any additional timber. No other record of forest management has been found.

6. Forest Management Concerns

The major concerns for this forest are to protect the existing agriculture drainage systems and the areas containing standing water and improve the quality and health of the forest. The 1993 tree planting needs to be monitored for future management needs.

7. Management Objectives

Sustainable timber and wildlife management are the primary goals on this forest. This forest is also to be used for forest research and forest management demonstration purposes.

8. Implementation Plan

The forest has been marked for an improvement harvest. The harvest will concentrate on releasing high quality crop trees, pockets of advanced, quality, natural regeneration, and the creation of several natural regeneration openings.

The trees marked for harvest consists of 465 trees with volume and an additional 77 cull trees throughout much of the 83 forested acres. This represents an average of 6.5 trees per acre. The 465 trees had a total volume of 107,828 board feet with an average of 232 board feet per tree. The harvest trees are composed of 24 species. Of the 24 species represented, sugar maple ranked number 1 and composed 28% of the trees marked and 26% of the volume. For a more complete description of the trees marked, see Appendix B.

The forest is also in need of timber stand improvement to release crop trees, deaden culls, complete natural regeneration openings, and kill remaining grape vines. The vine control needs to be completed before any trees are cut and should concentrate on eliminating vines from crop trees and natural regeneration openings. Vines should be left in uncontrollable grape vine arbors and along the forest edge. Within one year following the completion of the harvest, post-harvest timber stand improvement should be completed.

Realizing the value of this forest for its research potential, re-measuring the CFI plots should be a priority. All of the CFI plots need to be re-measured in 2005 with a follow-up analysis of the data. The woodlands management forester, Don Carlson, should see to the completion of the data inventory and its analysis. Following this inventory, additional re-measurements and analysis should occur every five years.

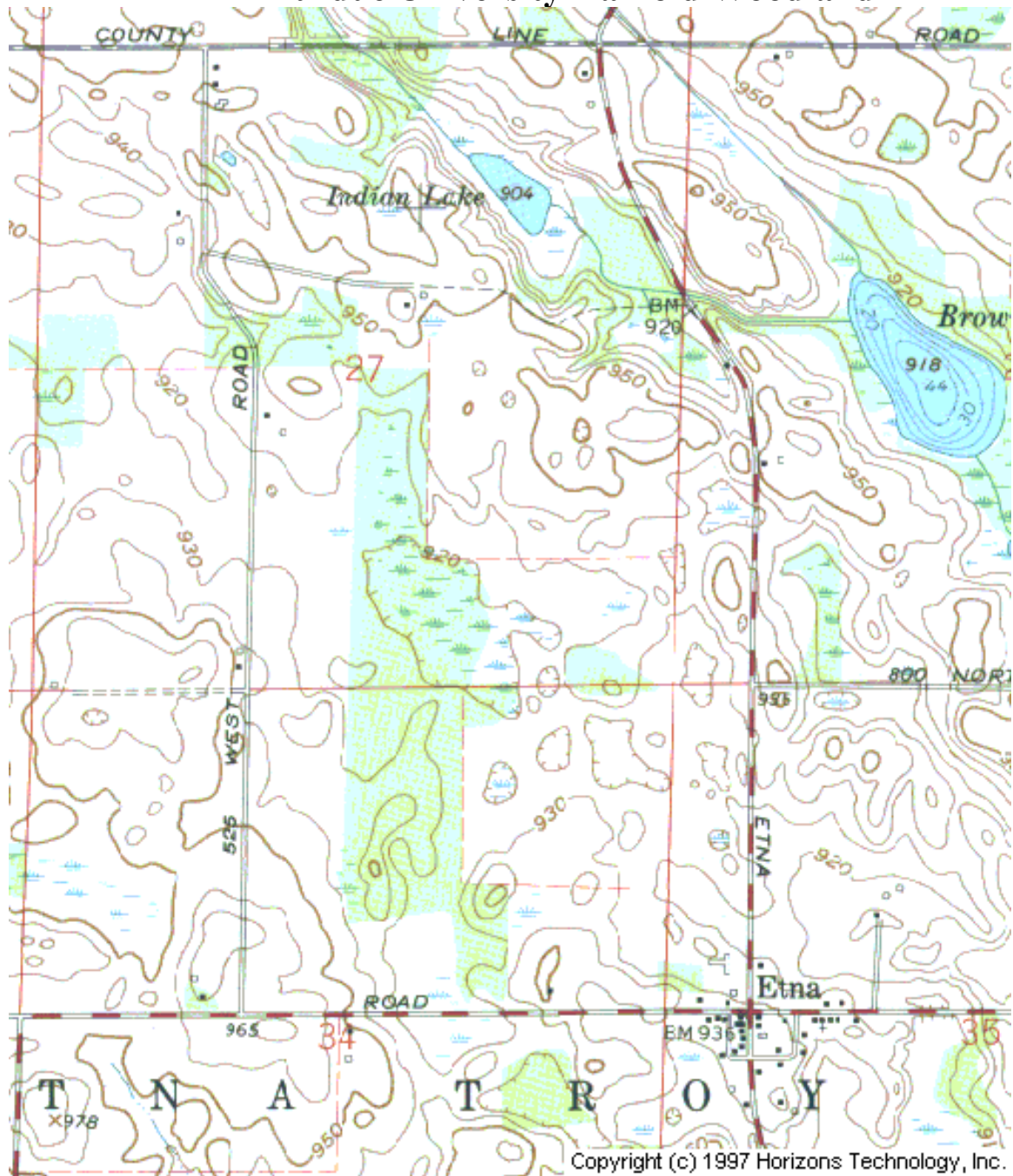
9. Summary

| Year | Task to be completed |
|-------------|---|
| 11/2000 | Meet with neighbors for management input. |
| 2001-2 | Complete vine control prior to harvesting. Market and sell improvement harvest. Complete post-harvest timber stand improvement. |
| 2001 | Establish parking lot with cable gate and informative sign. |
| 2005,10,... | Re-measure CFI plots. |

10. Management Plan Update

- Acquisition Date: Oct. 2, 1990
- CFI Plots installed: August 2000
- Management Plan completed: November 2000
- Timber marked and sold: January 19, 2001
- 465 trees + 77 culls containing 107,828 BF sold for \$48,678 to Buchan Logging.
- Pre-harvest vine control completed: January 2001 (except for northern portion of forest outside of harvest area.)
- Parking area with gravel and cable completed: 2001
- Timber Harvest completed: September 2001
- Post-harvest tsi completed: February 2002
- Log yarding area smoothed and planted to clover: Spring 2002
- Fall 2003: Wind damage caused significant damage to edges of natural regeneration openings created in the 2001 timber harvest.
- Trees planted in 2003 food plots on western edge of original tree planting on northern edge of property.
- Timber marked and sold: May 26, 2004
- 267 trees + 76 culls containing 46,598 BF sold for \$27,194 BF
 - Salvaged down and damaged trees and created larger, contiguous regeneration openings to increase quality regeneration potential (species, quantity, and to overwhelm high deer populations) and liquidate future high potential windthrows.
- Timber harvest completed: September 29, 2004.
- Summer 2003/2004: Food plots established on west of northern tree plantings.

Purdue University Harrold Woodland



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