



# Interim Forest Management Plan

## Vernon State Wildlife Area

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### Property Identifiers

Property Name and Designation: **Vernon Wildlife Area**

County: **Waukesha**

Property Acreage: **4,330 acres**

Forestry Property Code: **6809**

Master Plan Date: **Master planning is scheduled to be complete by December 2015**

Property Manager: **Kelly VanBeek**

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### Part 1: Property Assessment

#### A. ECOLOGICAL LANDSCAPE DESCRIPTION AND PROPERTY CONTEXT

This property is located within the Southeast Glacial Plains Ecological Landscape (EL). The dominant landforms in this EL are glacial till plains and moraines composed mostly of materials deposited during the Wisconsin Ice Age. Other glacial landforms, including drumlins, outwash plains, eskers, kames, and kettles are also well-represented. Soils tend to be lime-rich tills overlain by silt-loam loess. Historically the landscape provided a mixture of prairie, oak forests and savanna and maple basswood forests. End moraines and drumlins largely supported savannas and forests. Wet-mesic prairies, southern sedge meadows, emergent marshes, and calcareous fens are also found within the landscape. Mid 1800's land-cover around the property likely consisted of marsh/sedge meadow and a mixture of oak openings and oak woodlands. In terms of hydrology and aquatic productivity, this Ecological Landscape is among the highest in the state. Major river systems include the Wolf, Bark, Rock, Fox, Milwaukee, Sugar, Mukwonago, and Sheboygan, and several lake chains also exist. Extensive marshes, fens, sedge meadows, wet prairies, tamarack swamps, and floodplain forests are also significant features found within this landscape.

Since Euro-American settlement, large portions of the Southeast Glacial Plains have been intensively developed for agricultural or urban-industrial uses, significantly altering the historical vegetation. The hydrology of this Ecological Landscape has been greatly altered and affected by modifications (ditching, diking, tiling), grazing, invasive plants, excessive inputs of sediment- and nutrient-laden runoff from croplands, and human development. Remaining forests today occupy only about 10% of the land area and consist of maple-basswood, lowland hardwoods, and oak. Most of the rare or natural communities that remain are associated with large moraines or in areas where the Niagara Escarpment occurs close to the surface.

Vernon Wildlife Area contains a segment of the Fox River and is contained within the Middle Fox River Watershed, the largest of the Fox River Basin watersheds. The property lies within two landtype associations (LTAs): the Waukesha Drumlins LTA (222Kf02) where the characteristic landform pattern is rolling till plain with drumlins, swamps and kame terraces and where soils are predominantly well drained loam and silt over calcareous loam till; and the Heart Prairie-Burlington Plans LTA (222Kf03) where the characteristic landform pattern is undulating outwash plain with kames, lake plains, remnant moraines and swamps, and the soils are predominantly well drained loam over calcareous gravelly sandy outwash. The property contains major opportunity to restore oak opening habitat as identified in the Wisconsin Wildlife Action Plan. The landscape surrounding Vernon Wildlife Area is a matrix of agriculture, small woodlots, wetlands, and suburbs.



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### B. GENERAL PROPERTY DESCRIPTION – MANAGEMENT, ADJACENT LAND USES, TOPOGRAPHY, SOILS, ETC.

Vernon Wildlife Area is located just north of Mukwonago and was first leased in 1946 as a public hunting ground. Fee title acquisition began four years later. Current ownership in fee totals 4,330.33 acres, with an additional 262.20 acres held in easements. The property consists of mostly wetlands/flowages with the Fox River snaking through. Adjoining uplands consist of grasslands and some woodlots. A calcareous fen is also present on the south side. It offers excellent wildlife habitat, especially for migrating and nesting waterfowl.

The Waukesha County Soil Survey shows a considerable variety of soil types present across this property. However the majority of the area falls into either silt loams or muck soils. Nearly all of the lowland areas are muck soils, and the uplands silt loams. A few upland sites are sandy loams, but silt loam is the primary soil type present. In general, the silt and sandy loam soils will grow trees well and are fairly fertile. Given the tendency for this property to be low-lying, forestry operations on even the upland silt and sandy loams should consider frozen ground conditions to protect the site.

Past management has focused on wetland and prairie restoration and subsequent water level management to promote waterfowl, waterbirds, pheasants, and other semi-aquatic wildlife. Current management activities include mowing of prairies and grass, mechanical and chemical treatment of brush to remove invasive species and limit brush encroachment in open areas, oak savannah restoration through forest management, prescribed burning, moist soil management, and extensive dike maintenance including the restoration of the dike just west and south of Benson Rd.

The wildlife area is used intensively by consumptive and non-consumptive users because of its proximity to Waukesha and Milwaukee. Other protected lands close to Vernon Wildlife Area include the Kettle Moraine State Forest Southern Unit, Lulu Lake State Natural Area, and lands along the ecologically significant Mukwonago River.

### C. CURRENT FOREST TYPES, SIZE CLASSES AND SUCCESSIONAL STAGES

The Vernon Wildlife Area is primarily dominated by non-forest types including upland grasses, lowland marsh and grasses, fields that are share-cropped, lowland and upland brush, and open water. Of the property's 4,330 acres, approximately 3,684 are non-forest types. The 502 acres of forested area are divided as follows:

- **Northern Hardwoods (NH):** 97 acres in one stand (19% of total forested acreage). It is typed as NH 15+/NH 5-11/NH 0-5. The northern hardwood type is dominated by shade tolerant species; although less shade tolerant tree species are commonly found. While sugar maple currently is not the dominant species here, the stand is drawing closer to this condition. A few areas are heavier to oak in this stand, but not large enough to separate out into a separate stand.
- **Aspen (A):** 62 acres in three stands (12% of total forested acreage). All three stands are generally aspen poletimber over heavy brush, primarily common buckthorn. The sites are mostly low ground that tends to flood occasionally.
- **Oak (O):** 237 acres in seven stands (47% of total forested acreage). Oaks (red, white, burr and black) are the primary species, with sawtimber sized trees dominating each site. The understory includes some mix of central hardwoods and aspen, and brush is generally heavy in each, including common buckthorn, honeysuckle, dogwoods, among other species.
- **Tamarack (T):** 20 acres in two stands (4% of total forested acreage). Both stands include a mix of small sawtimber sized tamarack over pole sized tamarack. Lowland brush is present in the understory of both.



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- **White Pine (PW):** 8 acres in two stands (less than 2% of total forested acreage). Stands include a mix of white and red pine, spruce, and white cedar. Both stands are plantations that are 53 to 58 years old and have been thinned once. They are dominated by small sawtimber sized trees with some poletimber present, as well as a light volume of central hardwood poletimber (mainly cherry).
- **Bottomland Hardwoods (BH):** 78 acres in three stands (15% of total forested acreage). Green ash is the dominant tree species in each site, with a mix of swamp white oak, elm, aspen, and black cherry. The dominant ash trees are sawtimber sized. The aspen and other hardwoods are generally pole-sized at this time. Brush is fairly heavy in each site, mainly common buckthorn, but with some dogwood and honeysuckle .

### A. NHI: ENDANGERED, THREATENED, SPECIAL CONCERN SPECIES, SPECIES OF GREATEST CONSERVATION NEED (SGCN)

Four rare birds (1 E, 3 SC), one rare mammal (SC), one rare snake (SC), one rare turtle (SC), three rare fish (2 T, 1 SC), three rare invertebrates (all SC), five rare mussels (1 E, 3 T, 1 SC), 12 rare plants (1 E, 4 T, 7 SC), five natural community types and one bird rookery have been documented within a two mile buffer of the property. NHI screening protocols will be conducted and species guidance protocols will be followed prior to and during any future management activities.

### B. WILDLIFE ACTION PLAN CONSERVATION OPPORTUNITY AREAS (COA)

As identified in the 2005 Wisconsin Wildlife Action Plan, the property is located near the South Kettle Moraine and Mukwonago-Illinois Fox Rivers Conservation Opportunity Areas which is recognized as having Global and Continental Significance because of the opportunities for managing bur oak openings and medium-sized river and stream systems.

### C. SIGNIFICANT CULTURAL OR ARCHEOLOGICAL FEATURES

According to the Wisconsin Historical Society database, Native American encampments around the marsh area were abundant when settlers first arrived. Standard procedure calls for known sites to be protected during forest management operations.

### D. INVASIVE SPECIES

Exotic, invasive species are unfortunately fairly common through the wooded portions of this property. Common buckthorn is found nearly everywhere, with glossy buckthorn present as well. Honeysuckle is also present although not as abundantly as buckthorn. Garlic mustard can be found also, becoming more prevalent in areas where brush is not heavy.

### E. EXISTING STATE NATURAL AREAS (SNA) DESIGNATIONS/NATURAL COMMUNITY TYPES LIMITED IN THE LANDSCAPE

No State Natural Areas are present at this site.

### F. PRIMARY PUBLIC USES (RECREATION)

The property is the largest Wildlife Area in Waukesha County, providing hunting, fishing, trapping, hiking, and wildlife viewing opportunities. It is heavily used during the gun deer and waterfowl seasons. Over 10 parking lots and a boat launch provide public access to the property. Impacts from timber sales on recreational opportunities will be considered.



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### G. BIOTIC INVENTORY STATUS

Biotic inventory was completed in 2011 and is posted to the DNR website at: [http://dnr.wi.gov/files/pdf/pubs/er/er0829\\_ext.pdf](http://dnr.wi.gov/files/pdf/pubs/er/er0829_ext.pdf).

### H. DEFERRAL/CONSULTATION AREA DESIGNATIONS

One consultation area is designated at this site. For consultation sites, there is a range of activities that might occur from completely passive management to intensive timber harvest, but, in every case, the interdisciplinary team first determines that the activities will not limit or remove options for the master plan.

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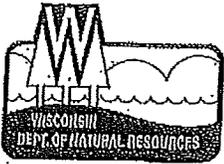
## Part 2: Future Management – IFMP components

### FOREST MANAGEMENT OBJECTIVES *(Outline primary forest management objectives)*

With all forest management objectives, there are several more universal objectives that can be attained including options such as increasing large snags and coarse woody debris, controlling the spread of invasive plant species and consideration for Wildlife Action Plan priorities and management of SGCNs. Integrating Priority Actions from Wisconsin's 2005-2015 Wildlife Action Plan to the extent possible within the framework of this document, or avoiding actions that might preclude successful implementation of these actions in the future is recommended.

In general the forest management objective for this area is to promote healthy, vigorous stands that are better able to withstand insect and disease attacks, and that offer good aesthetic values, wildlife habitat and quality forest products. Forest management practices should promote native forest types that enhance diverse wildlife populations and provide wildlife recreation opportunity. Management objective by species is as follows:

- 1) **Northern Hardwoods:** The primary management objective for this type is to maintain quality aesthetics throughout these areas, and to promote wildlife habitat and benefit by encouraging mast-producing species as well as long-lived trees on these sites that can serve as den trees.
- 2) **Oak:** The primary objective in these stands will be to promote the oak type and encourage regeneration. Secondarily, associated hardwoods such as hickory, black cherry and walnut will be encouraged as well.
- 3) **Bottomland Hardwoods:** The management objective in these stands will be to promote the growth of desirable tree species and encourage species other than ash to have a greater presence here.
- 4) **Conifer plantations:** The management objective for these areas is to maintain healthy growth and development of these stands, with the stands being transitioned over time towards hardwoods (oak, hickory, cherry). This can include natural transition or cutting of the conifers and planting of hardwoods.
- 5) **Aspen:** The management objective is to promote successful regeneration of aspen in this area for the benefit of wildlife species present, and to maintain diversity on the landscape.
- 6) **Tamarack:** The management objective for this type is to maintain healthy growing conditions and to help maintain the tamarack type on this property.



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**PROPERTY PRESCRIPTIONS** (*Identify specific and pertinent prescriptions by area of forest type, including passive management areas, extended rotation, and other information that will help achieve the objectives*)

**ALL STANDS** - The Wildlife Action Plan describes Priority Conservation Actions that make effective use of limited resources and address multiple species with each action. All proposed forestry prescriptions should reference Priority Conservation Actions, Wildlife Action Plan priorities, property objectives and be based on individual stand level needs.

- 1) **Northern Hardwoods:** These areas will be managed using selection harvesting and uneven-aged management with a goal of promoting a desirable mix of tree species, and maintaining an all-aged stand character. In these stands, oak and hickory will be favored as much as possible to promote wildlife benefit. Good quality sugar and red maple and basswood may also be encouraged in the stand. Additionally, efforts will be made to leave some large maples and basswood (e.g., those not in suitable form for commercial use, those with open grown form, etc.) as wildlife habitat trees. Ash may be selected for removal when marking timber harvests due to emerald ash borer (EAB) concerns although no effort will be made to eradicate ash from these stands. Healthy, vigorous young ash will be left throughout the area. Care will be taken to manage non-native invasive woody species, preferably prior to harvest.
- 2) **Oak:** These stands will be managed to promote the oak type through timely shelterwood harvesting coupled with efforts to control invasive brush species. Black cherry and hickory will be favored as well, but managing for the oak species is the primary objective for these sites. Supplemental tree planting may be utilized after brush control and harvesting are completed in order to encourage regeneration of the desirable tree species.
- 3) **Bottomland Hardwoods:** Management in these areas will involve shelterwood harvesting along with brush control efforts, and if conditions allow, tree planting to encourage other bottomland tree species to get a start to replace the green ash.
- 4) **Conifer plantations:** Periodic thinning will be used to promote the health and vigor of these stands, promoting any desirable hardwoods present in the stand as possible. A hard transition may be performed at some point, with a harvest of the conifers and planting of desirable hardwoods.
- 5) **Aspen:** The aspen stands will be managed using a clearcut for coppice regeneration. Herbicide treatments may be applied to keep undesirable non-native invasive brush from competing with the young aspen.
- 6) **Tamarack:** Strip clear cuts are typically used to regenerate tamarack, although site conditions will determine the management in these small stands. Tamarack in this area has suffered in recent years, and if this tamarack is lost the site will be transitioned to other bottomland species types. Non-native invasive brush control would be included as well.

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9-5-14

Date

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09/10/2014

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5 SEPTEMBER 2014

Date

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9/8/2014

Date