



Interim Forest Management Plan Horicon Marsh State Wildlife Area

Property Identifiers

Property Name and Designation (multiple small properties can be grouped):
HORICON MARSH STATE WILDLIFE AREA

County(ies): **DODGE**

Property Acreage: **11,465**

Forestry Property Code(s): **1421**

Master Plan Date: None. Master Planning for this property scheduled for 2010-2014.

Property Assessment

The following should be considered during the property assessment:

GENERAL PROPERTY DESCRIPTION

- **LANDSCAPE AND REGIONAL CONTEXT**

The Horicon Marsh State Wildlife Area (HMSWA) is located within the Southeast Glacial Plains Ecological Landscape which is made up of glacial till plains and moraines. Soils tend to be lime-rich tills overlain by silt-loam loess. Historically the landscape supported wet-mesic prairies, southern sedge meadows, emergent marshes and calcareous fens. A mixture of prairie, oak forests and savanna and maple basswood forests were also found within the landscape. End moraines and drumlins largely supported savannas and forests. 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. In addition to Horicon Marsh, this Ecological Landscape includes important fens, sedge meadows, wet prairies, tamarack swamps that contain rare plants.

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. 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.

The Horicon Marsh is the largest contiguous freshwater cattail marsh in the lower 48 states. It is located in Dodge County in southeast Wisconsin, spanning over 32,000 acres. The Wisconsin DNR owns approximately 1/3 of the southern portion of the marsh (over 11,000 acres) while the US Fish and Wildlife Service owns and manages the northern 2/3 of the marsh. Of the over 11,000 acres comprising the HMSWA, approximately 9,000 acres are wetlands (mostly submergent and emergent marsh), more than 1,300 acres of open water/aquatic communities, about 440 acres of forested lands and approximately 31 miles of river, creek, channel and ditch. Given the enormous size of the marsh and nature of the landscape, there is relatively little suitable upland habitat along the perimeter of the marsh. Much of the current forested habitat has been degraded to some extent as a result of past use and/or introduction of invasive exotic



Interim Forest Management Plan

Horicon Marsh State Wildlife Area

plants. Grassland habitat is severely fragmented likely resulting in high predation rates for those birds that attempt to nest there. Current management seeks to address these issues. Water levels cannot be effectively manipulated to the extent necessary to adequately manage vegetation within the marsh. Several impoundments have been constructed to better facilitate manipulation of water levels. The landscape surrounding the Horicon Marsh is used primarily for agriculture.

The most significant Landtype Association found within the Horicon Marsh Wildlife Area is the Horicon Marsh Landtype (222Ke17), comprising 95% of the property area, though there are two other landtypes present within the periphery of the property boundaries. The Horicon Marsh Landtype Association is typified by nearly level marsh with organic deposits. Soils are predominantly very poorly drained muck.

The entire Horicon Marsh (inclusive of the HMSWA property) is identified as an Important Bird Area (IBA) which supports significant numbers of waterfowl and shorebirds during migration. This IBA hosts the largest breeding population of redhead east of the Mississippi River, as well as significant numbers of wetland-dependent birds. Horicon Marsh was similarly recognized by the American Bird Conservancy as a "Globally Important Bird Area" in 1997 because of its value to migrating waterfowl.

The Wisconsin Wildlife Action Plan (WAP; WDNR 2006a) recognized Horicon Marsh as a Conservation Opportunity Area (COA). Horicon Marsh COA is significant for its immense cat-tail marsh and impounded areas with the ability to manipulate water levels and upland grass for the benefit of waterfowl, shorebirds, grassland birds, marsh birds, colonial nesting birds, and Blanding's turtle.

The Land Legacy Report (WDNR 2006b) also identified the Horicon Marsh as a "Legacy Place," and was assigned the highest level of conservation significance, primarily for its importance as habitat for breeding and migratory birds.

Horicon Marsh is also recognized as a Wisconsin Wetlands Association "Wetland Gem" (WWA 2010) as well as a "Wetland of International Importance."

- **HISTORY OF LAND USE AND PAST MANAGEMENT**

Prior to European settlement the Horicon Marsh and Rock River were significant barriers on the landscape. Surveyors clearly described the areas as "deep marsh." To the west of the marsh the landscape was comprised of fire dominated ecosystems including oak forests, oak savanna and prairie. To the east of the marsh the landscape was dominated by northern hardwood forests which developed with little or no occurrence of fire.

In 1846, early European settlers built a dam on the Rock River at Horicon to power a sawmill, grist mill and iron works. This resulted in an impoundment covering the marsh with water nine feet above current levels. In 1869, the dam was removed, favoring landowners whose land was flooded and thus unusable. Following European settlement much of the forest in the area was cleared for agriculture. Those forests that were not cleared were generally pastured. In the early 1900s, attempts were made to drain the marsh and convert it into farmland. These attempts largely failed as exposed peat soils caught fire, and as a result cropland conversion attempts were eventually abandoned. In 1933, a dam was constructed to raise the water to normal levels and for the acquisition of the land by the government. This also provided the foundation for establishing the State Wildlife Area. Initiatives to restore the site's wildlife habitat began shortly thereafter, and continue to this day.



Interim Forest Management Plan Horicon Marsh State Wildlife Area

SITE SPECIFICS

- **Current forest types, size classes and successional stages:** According to current WisFirs data there is 440 acres of forest land on the entire DNR property. Much of the forested land is inaccessible for the purpose of management because it is located on islands within the marsh. Other forested land is located along the perimeter of the marsh. Of the forested acreage on the property 42 percent is typed as bottomland hardwoods, 29 percent is aspen, 14 percent is central hardwoods, and 10 percent is oak. Bottomland hardwoods are generally comprised of a combination of green ash, silver maple, cottonwood, black willow and swamp white oak. Central hardwood stands on the Horicon Marsh Wildlife Area are generally comprised of a mixture of hardwoods including but not limited to black cherry, elm, black walnut, shagbark and bitternut hickory, hackberry, and honey locust. Much of the forested acreage is relatively mature, with stands of hardwoods on the marsh as old as 120 years of age while other stands of recently regenerated aspen are very young.
- **State Natural Area designations:** Fourmile Island is a 15-acre State Natural Area that lies within HMSWA. The SNA was designated in 1965 and contains one of the largest heron and egret rookeries in the Midwest.
- **High Value Conservation Forests (HCVF) or other resources/ natural community types limited in the landscape:** There are no HCVF areas located on the property. Natural community types that are limited in the landscape include large contiguous areas of grassland habitat and oak savanna.
- **Biotic Inventory status (see website):** A Rapid Ecological Assessment of the property was completed in June 2012. This document is available on the Department's website <http://dnr.wi.gov/topic/nhi/nhireports.asp> under DNR Publication PUB-ER-833-2012. Approximately 80 percent of the property has been evaluated and entered into WisFirs. The remaining acreage will be evaluated and entered into WisFirs by June 30, 2013. Additional inventories may be conducted to facilitate development of the property master plan, which has already been initiated.
- **Deferral/consultation area designations:** Draft deferral/consultation area designations have been identified on the property (Fourmile Island Rookery SNA (consultation) and Horicon Marsh Wildlife Area (consultation); however, the process has not been completed at the time of this draft plan (2012).
- **Rare species:** There are a number of threatened and endangered species associated with the property. Twenty rare species have been documented at HMSWA including one state endangered bird, one state threatened bird, six special concern bird species, one special concern fish and one special concern plant. There are also examples of natural communities for which there are "major" or "important" opportunities for management within the HMSWA. NHI screening will be conducted prior to all future management activities.
- **Invasive species:** Invasive species are abundant on the wildlife area. Species that are abundant and problematic on forested portions of the property include common buckthorn, Asian honeysuckle, garlic mustard, barberry, multi-flora rose, and reed canary grass.
- **Soils:** Much of the property is dominated by muck soils in the bottomlands. In the uplands most soil is well drained silt loam. Some intermediately drained silty clay loams also exist.

CULTURAL AND RECREATIONAL CONSIDERATIONS

- **Cultural and archeological sites (including tribal sites):** Archaeological sites are found scattered throughout the property. Sites include mounds, villages and known burial sites. All known sites are protected during forest management operations. If and when forest management practices are conducted on known archaeological sites operations are conducted only during frozen ground and no ground disturbance is allowed.
- **Recreational uses:** Hunting, fishing, hiking, wildlife viewing, cross country skiing and bird watching are all uses that are allowed on the Horicon Marsh State Wildlife Area.



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Part 2: IFMP Components (1-2 pages maximum)

MANAGEMENT OBJECTIVES (Outline primary forest management objectives):

The primary forest management objectives include the following:

1. Identification of viable forest acreage that is to be managed in a manner that will maintain that acreage in a productive forested cover type.
2. Identification of forested acreage that may potentially be converted to other cover types that could improve upon habitat that is otherwise fragmented or lacking from the property.
3. Maintain forest health and species diversity across the property.
4. Favor most producing species such as oak and hickory where they exist.
5. Allow for regeneration of aspen in those areas where aspen is currently present and it does not negatively affect other habitat or cover types.
6. Prepare the property for introduction of emerald ash borer by reducing the proportion of ash in stands where it is present while also encouraging establishment of other appropriate species that are capable of growing in similar conditions.
7. Reduce the prevalence and dominance of invasive exotic species and control them to the extent possible with the knowledge and resources available.
8. Maintain/improve water quality within the watershed.
9. Identify rare/endangered species and protect/provide habitat.

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

- Stand specific objectives and prescriptions will be discussed and determined at the Annual Integrated Property Management meetings. Typically these meetings occur in January and several resource professionals associated with the property attend the meeting, including the forester, district ecologist, fish manager, wildlife biologist / property manager, and Facilities and Lands technicians. Long term objectives and prescriptions may be modified at the Integrated Property Management meetings in the case of catastrophic events such as wild fires, insect invasions, or disease that cause safety concerns or create significant stand modifications.
- All forest management prescriptions will follow the forest management principles outlined in the "Wisconsin Forest Management Guidelines" and the "Silviculture Handbook" for those stands where continuation of the forested habitat type is the goal. For those areas where forested acreage may be converted to other cover types those guidelines will not apply.

APPROVALS:

District Ecologist Date

Forester Date



Interim Forest Management Plan Horicon Marsh State Wildlife Area

Property Manager

Date

Area/Team Supervisor

Date