Interim Forest Management Plan

Property Identifiers

Property Name: Mount Hope Rearing Station

Property Designation or Type: Fisheries

Forestry Property Code(s): 2201

Property Location - County(ies): Grant

Property Acreage: 190

Property Manager: Gene Van Dyck

Property Assessment

General Property Description

The Mount Hope Rearing Station (MHRS) is located in Grant County approximately 3.5 miles north of the Village of Mount Hope. The property contains 190 acres of forest land. The area is open to public use such as hunting, fishing, and hiking.

Landscape and regional context

The Mount Hope Rearing Station is located in the Western Coulee and Ridges Ecological Landscape and has the following Landtype Associations: 222LC18 (Hills and Valleys - Wisconsin River Drainage). The Western Coulee and Ridges Landscape is characterized by its highly eroded, unglaciated topography with steep sided valleys and ridges, high gradient headwaters streams, and large rivers with extensive, complex floodplains and terraces. Ancient sand dunes occur on some of the broader terraces along the Mississippi and Wisconsin rivers.

Current Landcover: Current vegetation is a mix of forest (41%), agriculture (36%), and grassland (14%) with wetlands (5%) mostly in the river valleys. Primary forest cover is oak-hickory (51%). Maple-basswood forests (28%), dominated by sugar maple, basswood and red maple, are common in areas that were not burned frequently. Bottomland hardwoods (10%) dominated by silver maple, swamp white oak, river birch, ashes, elms, and cottonwood are common within the floodplains of the larger rivers. Relict "northern" mesic conifer forests composed of hemlock, white pine and associated hardwoods such as yellow birch are rare but do occur in areas with cool, moist microclimates. Dry rocky bluffs may support xeric stands of native white pine, sometimes mixed with red or even jack pine. Prairies are now restricted to steep south- or west-facing bluffs, unplowed outwash terraces along the large rivers, and a few other sites. They occupy far less than 1% of the current landscape. Mesic tallgrass prairies are now virtually nonexistent except as very small remnants along rights-of-way or in cemeteries.

History of land use and past management

The land which is now the Mount Hope Rearing Station was private farmland until around 1955, when the state bought the property. The purchase was not finalized until 1961. The property was purchased with 75% Dingle Johnson Federal Fishing Money and 25% Wisconsin Hunting and Fishing License Funds and as such is still governed by the rules and regulations attached to

these funds. The initial intent of the purchase was to protect the major headwater spring area, 2,200 feet of the Little Green River, and to provide for public fishing. Four years later the spring area was turned into trout production pond. This situation has since been remediated. The property was originally purchased and designated as the Little Green Rivers Fishing Grounds. At some time around the development of the pond, the name was changed to the Mount Hope Conservation Area, as it is known today.

Before state purchase, areas flat enough for tilling were cleared and planted to crops, and the remainder of the property was heavily grazed. Much of the woodland still shows evidence of past damage from grazing.

In approximately 1953, 8 acres of white pine were planted on some of the old fields. This stand was thinned in the 1980's and has another established thinning which has been sold but not yet cut.

In 1985 there was a 10 acre salvage cut on the property to clean up after a timber trespass from a neighboring property. In 2004 there was another 2 acre salvage cut to clean up trees which were bulldozed during a fence construction project.

Most recently in 2010, 4 acres of walnut and red oak were planted, and 1 acre of red oak was released. In 2012 approximately 38 acres received a timber stand improvement (TSI) treatment which reduced the amount of undesirable shrubs and small undesirable trees. Much of this area was planted to oak, walnut, and cherry but the survival has been poor. There is currently funding available to again conduct TSI in the area to create light conditions to better allow the establishment of hard mast bearing species such as oak, walnut, and shagbark hickory. Pending approval, an overstory removal of these 38 acres will take place once adequate regeneration is established.

There was previously a trout rearing pond on the property. In addition, stream improvement works have also taken place.

There have been multiple projects on the property to plant areas to prairie as well as attempts to plant shrubs for wildlife.

State Natural Area designations

This property does not include a State Natural Area designation.

Biotic Inventory status

A Rapid Ecological Assessment has recently been completed for the property (Rapid Ecological Assessment for Driftless Area Study Streams, WDNR, 2011). The ecological assessment includes the following site specific opportunity for biodiversity conservation:

Excellent Water Quality
In 2011, 41 Driftless Area Stream properties in eight counties were sampled to locate conservation opportunities for aquatic invertebrates. Of the 41 sites, 11 were identified as having excellent water quality, including the MHRS.

Other opportunities for biodiversity conservation to consider at this site (excerpts from the Rapid Ecological Assessment for Driftless Area Study Streams, WDNR, 2011):
Driftless Area Study Streams at a Glance
Exceptional Characteristics and Opportunities of the Study Area

Rare Animals and Plants. Driftless Area Study Streams properties support numerous rare species. Ninety-seven rare animal species have been documented at Driftless Area Study Streams, including 12 State Endangered species, 26 State Threatened species, 59 Special

Concern species, and three associated rare animal assemblages. Forty-six rare plant species are also known from Driftless Area Study Streams, including six State Endangered, 14 State Threatened and 26 Special Concern species.

Oak Savanna Restoration. Oak savannas were historically common in Wisconsin but are now rare throughout the state, thus their restoration is critical to the survival of many rare plants and animals that depend on them. Abundant opportunities exist on Driftless Area Study Streams properties to restore Oak Opening, Oak Woodland, and Oak Barrens on a landscape scale and within a matrix of other habitats.

Cold- and Cool-Water Streams, Springs, Spring Seeps, and Riparian Wetlands. The porous sandstones of the Driftless Area retain large amounts of water, which are released at thousands of locations throughout the region via springs and spring seeps. The extensive network of cool-water streams within Driftless Area Study Streams properties support significant populations of pollution-intolerant invertebrates, rare nongame fish, and native brook trout.

Herptile Conservation. The Driftless Area offers one of the best opportunities in the state for herptile conservation. Driftless Area Study Streams properties provide diverse habitats suitable to herptiles, including prairies, barrens, oak savannas, aquatic resources, fractured limestone outcrops, and wetlands.

Natural Heritage Inventory/Rare Species

The NHI screening indicated several rare species may be present on the property. These include Pickerel Frog, Yellow Gentian, Prairie Indian Plantain, Violet Bush Clover, Purple Milkweed, and American Fever-few.

Pickerel frogs (*Lithobates palustris*) are a Species of Special Concern in Wisconsin. It has a rather complex habitat range as it prefers to overwinter in cold water streams, seepage pools or spring holes, often taking advantage of water cress for cover. It moves to warmer water ponds to breed and lay eggs from April through mid-June. Adults spend most of the active season foraging on land in riparian habitats along streams and rivers. This species is active from late March to early November but can remain semi-active in winter under water. Larvae metamorphose from mid-July to mid-August.

All of the above plant species listed in NHI are prairie, oak savanna, or open oak woodland species. They require partial to full sunlight, and would benefit from savanna restoration activities including brush control, invasive species control, prescribed fire, and many management activities that are consistent with maintaining oak as a dominant cover type. During biotic inventory conducted 2010-11 DNR staff from noted several areas on this property that could be considered for prairie, savanna, barrens, and oak woodland native community management. Field notes from these surveys included (emphasis added):

- "Weedy **Oak Barrens**, somewhat overgrown w/ black walnut & red cedar. Sandy soils w/ some limestone rock outcroppings. Some prairie plants present..."
- "Young **Oak Woodland** on SW-facing slope. Full canopied, not open-grown, white & red oak w/ shagbark hickory, basswood, a few red cedars..."
- "Nice dry **oak woodland** with 70% canopy of 18-24in Quercus velutina and Q alba over sparse understory of oak regen and sapling Prunus serotina and Ostrya. Groundcover dominated by Carex pensylvanica with Gaylussacia, Pinus strobus, Aureolaria grandiflora"
- "Moderate to good-quality **Oak Savanna** w/ large diam open-grown black oaks, shagbark hickory, & black walnut encroaching. Shrub layer of prickly ash, rubus, bur oak, gooseberry, honeysuckle. Groundlayer of penn sedge, VA creeper, Desmodium sp"

- "**Dry prairie** on shallow soil over sandstone outcrop at upper portion of SW-facing slope with scattered small Quercus macrocarpa and Juglans nigra over Bouteloua curtipendula, Setaria glauca, Opuntia macrorhiza..."
- "Moderate to good-quality **Oak Savanna** on SW-facing slope w/ rock outcroppings & scattered large boulders...Nice structure & few if any invasives. Canopy dom by large diam white & black oaks. Shrub layer of oaks, hickory, prickly ash, hazelnut..."

Oak Savanna (Oak Opening, Oak Woodland, Oak Barrens)
Historically, Oak Openings were abundant in Wisconsin, covering approximately 5.5 million acres (Curtis 1959) south of the Tension Zone. Review of historical literature indicates that Oak Openings once supported an exceptionally diverse flora, about 25% of the entire native flora of Wisconsin (Leach and Givnish 1999). Of the about 75,000 acres (Hoffman 2009) of Oak Opening remaining in Wisconsin, many of these are highly degraded or have succeeded to closed-canopy oak forests. The few extant remnants are mostly on drier sites, with the mesic and wet-mesic Oak Openings almost totally destroyed by conversion to agricultural or residential uses and by the encroachment of other woody plants due to fire suppression. Oak Woodland once occupied approximately 1.4 million acres (Curtis 1959) in pre-widespread Euro-American settlement Wisconsin; today, it is extraordinarily rare – only about 140,000 acres remain in the state (Hoffman 2009). Most of these remnants are highly degraded and have converted to closed-canopy oak forest. Oak Barrens historically occupied approximately 1.8 million acres in Pre-European Settlement Wisconsin (Richard Henderson, personal communication), but is now reduced to approximately 95,000 acres (Hoffman 2009; includes both pine and oak barrens). Opportunities exist on Driftless Area Study Streams properties to restore Oak Openings, Oak Woodlands, and Oak Barrens, and to increase their connectivity. Such actions would also improve habitat for many plants and animals that are specialists of grassland, savanna, woodland, and barrens.

Cultural and Considerations
No known cultural or archeological sites found on the property.

Recreational Uses
Hunting and fishing are the heaviest uses of the property. Numerous trails, though overgrown, provide access for hiking, berry picking, mushroom hunting, and bird watching as well.

Invasive species

Low to moderate levels of buckthorn, garlic mustard, mutliflora rose, reed canary grass, wayfaring tree and honeysuckle exist throughout the property. There is a suspected but unconfirmed population of Himalayan blackberry on the property as well.

Soils
Soils have formed mainly from the loess rather than underlying rock; however weathering St. Peter sandstone mixed with loess on upper slopes as it was deposited. The valley area soils are made up of loess mixed with outwash from the watershed.

Interim Forest Management Plan

Current Forest Cover

Cover Type	Acres	Percent of Recon Acres
Aspen	6	3%
Bottomland Hardwoods	18	9%
Central Hardwoods	46	24%
Miscellaneous Coniferous	5	3%
Oak	99	52%
White Pine	8	4%
Walnut	3	2%
Herbaceous Vegetation	3	2%
Upland Brush	2	1%

IFMP components

1) Maintain oak cover types where feasible
    a. Thin to achieve larger diameter trees
    b. Increase course woody debris
    c. During stand rotations, retain structural diversity from previous stand
    d. Crop tree release oak in young stands
    e. Consider prairie, oak savanna, and oak woodland native community management where appropriate
2) Thin scattered pine plantations to promote growth and maintain for forest diversity
3) Control invasive species as needed
4) All management activities must protect water quality

Oak - Maintain oak cover types by conducting regeneration harvests in stands suitable for oak. When regeneration is adequate, remove overstory to release regeneration. Rotation age is 100.

Pine – Sell pine plantation thinnings when age appropriate and markets allow. Maintain a pine component as long as possible for forest diversity. Pine plantations will be converted to native cover types as future stand conditions allow. Rotation age is 110.

Central Hardwoods – If there is a walnut or oak component to any central hardwood stand, these will take priority in management. Although this property main objective is to promote oak, this does not necessarily mean the stand will be converted to oak. Central hardwood stands will be allowed to remain if site is not suitable for oak or other merchantable species exist. Rotation age is 100.

Walnut – On the better sites, grow large high quality walnut to demonstrate to the public the economic benefits of growing large diameter walnut. Rotation age is 120.

Bottomland Hardwoods-Plans exist to convert to swamp white oak and possibly walnut on the higher sites. The primary tree species in these stands are cottonwood and box elder, which are both generally non-commercial species.

Interim Forest Management Plan

PREPARED BY:

Property Manager — Date: 8-26-14

APPROVED:

Area Program Supervisor — Date: 9/8/14

REVIEWED BY:

Allen King
Forester — Date: 8/26/14

District Ecologist — Date: 9/8/14