



Emmons Creek Fishery Area Interim Forest Management Plan

Property Identifiers

Property Name:	Emmons Creek Fishery Area
Counties:	Portage/Waupaca
Property Acreage:	1450 acres
Forestry Property Code(s):	5002
Master Plan Date:	Non-NR44 compliant Management Plan January 27, 1982

Property Assessment

General Property Description

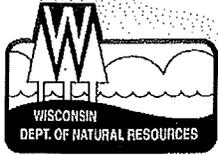
Emmons Creek Fishery Area is a state owned property with the primary objectives of managing for trout habitat, providing fishing and hunting opportunities, protecting Karner blue butterfly habitat, and oak savanna restoration. Secondly it provides fishing and hunting opportunities. It is a property located near the southern end of the border shared by Portage and Waupaca County. Emmons Creek is a class 1 trout stream and was the former home of the Emmons Creek Coldwater Research Station (removed in 2009).

Landscape and regional context

The Emmons Creek Fishery Area is located in the Central Sand Hills Ecological Landscape. The Central Sand Hills Ecological Landscape is located in central Wisconsin at the eastern edge of what was once Glacial Lake Wisconsin. The landforms in this ecological landscape are a series of glacial moraines that were later partially covered by glacial outwash. The area generally is characterized by a mixture of farmland, woodlots, wetlands, small kettle lakes, and cold water streams, all on sandy soils. The mosaic of glacial moraine and pitted outwash throughout this ecological landscape has given rise to extensive wetlands in the outwash areas, and the headwaters of cold water streams that originate in glacial moraines. Historic upland vegetation consisted of oak-pine forest, oak savanna, and tall-grass prairie. The growing season is long enough for agriculture but the sandy soils limit agricultural productivity somewhat.

History of land use and past management

Fire played a critical role in shaping the pre-settlement cover types. The lowlands on the Emmons Creek property were likely forested and composed mainly of Swamp Conifers and to a



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lesser extent Lowland Hardwoods. During settlement the majority of these lands were harvested for timber and/or cleared for agricultural purposes. Historical aerial photography indicates that meadows were the dominant cover type adjacent to the waterways in the early to middle part of the 20th century, likely as a result of agricultural use including burning, grazing, and cutting of marsh hay. Today most of these lands have converted to lowland woods or lowland brush. Land acquisition on this project began in the late 1950's.

Emmons Creek originates in the Town of Belmont, Portage County. Emmons Creek was dammed up near the headwaters to form Fountain Lake. Categorized as Class I Trout Waters, this stream supports natural reproduction of trout and as such also receive moderate to heavy fishing pressure, particularly during the early parts of the trout season. Past management therefore has been primarily aimed at providing and improving opportunities for public fishing. These projects generally consisted of fence maintenance, development of parking areas, and in-stream habitat improvement.

These properties receive heavy hunting pressure, particularly during the gun deer season. Other recreational and educational activities supported by these properties include trapping, hiking, cross-country skiing, snowshoeing, picnicking, berry picking and nature study. Snowmobile trails once existed on portions of this property including bridges over Emmons Creek. These trails and bridges have since been abandoned, but are still in place. Wisconsin's Ice Age Trail transects this property and receives moderate use throughout the year.

Land management activities have included wildlife shrub plantings, prescribed burns to maintain grassland and savannah cover types, planting of pines, control of invasive species and periodic timber harvesting. Sharecropping occurs on non-forested uplands and is used primarily as a habitat maintenance tool.

Wildlife Action Plan/ Species of Greatest Conservation Need

Although the property is not specifically listed in the Wildlife Action Plan's Implementation document for the Central Sands Hills Ecological Landscape, the oak barrens community is a priority natural community type. Some high priority Species of Greatest Conservation Need associated with the barrens community are Red-headed Woodpecker, Western Glass Lizard, Barrens Snaketail, Bina Flower Moth, Frosted Elf, Persius Duskywing and the Karner Blue Butterfly.

Conservation Opportunity Area

The property does not fall within a Conservation Opportunity Area as identified within the Wisconsin Wildlife Action Plan.

Natural Heritage Inventory (NHI)/Rare Species

Based on a Natural Heritage Inventory (NHI) search and a 2 mile buffer for Emmons Creek State Natural Area there are 14 Element Occurrences, of which two are labeled as "Community" Groups; Oak Barrens and Lake--deep, hard, drainage. The "Oak Barrens" community is found on the property. The remaining Element Occurrences are six insects, two birds, two fish, one reptile



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and one plant. Three of the insects are found on the property, one of which is Federally listed as endangered. One of the bird elements is found on the property.

High Value Conservation Forests (HVCF) or other resources/natural community types limited in the landscape

The pine and oak savannas, shallow hard water lake, wet forests and forest seeps, and northern dry forests are community types limited in the landscape.

Biotic Inventory Status

There has not been a biotic inventory for the property

Cultural and Archeological Sites

The Fishery Area has both Historical and Archeological sites located within its boundaries. Contact with the State Historical Society is required prior to any activities near known sites. Prior to any management activity consultation shall occur between property management and/or forestry staff and the Department Archeologist.

State Natural Area Designations

A State Natural Area(SNA) is located partially in Emmons Creek Fishery Area and partially in nearby Hartman Creek State Park. The Natural Area designated as Emmons Creek Barrens State Natural Area has 32.5 acres located in the Fishery Area. The SNA supports a semi-open oak savanna with scattered open-grown bur and white oaks. The dense patches of wild lupine, which dominates the groundlayer, provides favorable habitat for the federally endangered Karner Blue Butterfly (*Lycaeides Melissa samuelis*) Other species found here include Pennsylvania sedge, little bluestem, silky aster, cream wild indigo, prairie coreopsis, western sunflower, june grass, slender beard-tongue, and showy goldenrod.

Invasive Species

Although a formal survey has not been conducted, the following species of invasive plants are known to be present on the property; common and glossy buckthorn, garlic mustard, non-native honeysuckle, black locust, spotted knapweed, wild parsnip, reed canary grass and hairy vetch.

Soils

The soil types range from very well drained sandy loams and loamy sands over non-calcareous sand outwash to poorly drained mucky, clayey, or sandy soils over calcareous clay or sand lacustrine, or non-calcareous sand outwash. In the Central Sand Hills EL soils are primarily sands in the northwest portion (Central Wisconsin Moraines and Outwash Subsection, 222Kb). Organic soils occur in wetlands throughout the ecological landscape. The major river valleys have soils formed in sandy to clayey alluvial material or non-acid muck. Their drainage classes range



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from moderately well drained to very poorly drained, and some areas are subject to periodic flooding.

Recreational Uses

Hunting, fishing, and trapping are the primary recreational uses of this property. Other forms of nature based outdoor recreation such as hiking, berry picking, cross country skiing bird watching and mountain biking also occur on the property.

A section of the Ice Age Trail passes through the property providing additional hiking opportunities and a connection to the much greater trail system found in the State.

- Current forest types, size classes and successional stages

Emmons Creek Fishery Area: Property 5002

Forest Type	# of Stands	Acres	Acres by Age Classes in 2014		
			0-50	50-100	100+
Aspen	3	4	1	3	
Bottomland Hardwoods	2	11	6		5
Fir/Spruce	3	31	31		
Northern Hardwoods	1	21	N/A	N/A/	N/A
Oak	27	356	40	126	190
Scrub Oak	5	84	16	68	
Jack Pine	2	8	2	6	
Red Pine	15	150	33	117	
White Pine	7	20	4	16	
Swamp Hardwood	12	189	95	94	
Tamarack	3	5		2	3
Total	80	879	228	432	198

Part 2: IFMP Components

Management Objectives:

- Maintain and enhance, as practicable, oak cover type

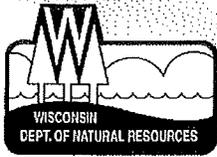


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- Even age management of red pine with natural conversion to white pine and/or oak
- Promote the expansion of aspen and jack pine through even age management.
- Maintain the extent and quality of swamp hardwood and bottomland hardwood stands
- Manage upland grass areas for such where practical. Allow other grass areas to convert to forest.
- Seek opportunities to maintain and create oak barrens.
- Identify invasive species and implement practices to eliminate/minimize impact to property.
- Protect undeveloped lake and river frontage.
- Protect, maintain, and enhance water quality of lakes, wetlands, and streams.
- Identify threatened and endangered species and protect/provide habitat for a variety of game and non-game wildlife species, including aquatic species
- Provide opportunities for outdoor recreation to include hunting, fishing, trapping and nature study
- Manage Karner blue butterfly habitat.
- Natural processes will determine the structure of the lake and associated wetlands, along with prescribed understory manipulation in the savanna.
- Provide opportunities for research and education on the highest quality native oak openings and other limited habitats.

Property Prescriptions:

- **Oak** - Maintain oak stands through management techniques appropriate for the stand and site conditions. Use even age management techniques such as clearcutting and shelterwood harvests to promote natural regeneration. Artificial regeneration from seed or seedlings may be used to establish oak regeneration prior to or after timber harvests when natural regeneration is not adequate. Other management techniques that may be used to help regenerate oak stands include soil scarification, prescribed burning, mowing, or herbicide treatments. Use intermediate treatments such as release or crown thinning to develop young stands and improve composition and timber quality.
- **Swamp Hardwoods/Red Maple** - Selection of the most appropriate silvicultural system for these cover types will be based off of site specific conditions and generally accepted silvicultural practices outlined the DNR silvicultural handbook. Based on the proximity of these stands to waterways and wetlands, silvicultural management requires consultation between the wildlife/fishery manager and the forester. Riparian zone management will incorporate relevant BMP's and shall implement measures appropriate to protect the scenic and aesthetic qualities of woodlands bordering waterways. Special management considerations include avoiding the introduction of reed canary grass into these stands and management to minimize the potential impacts associated with Emerald Ash Borer.
- **Aspen** – Maintain aspen cover type by regenerating the stand using a simple coppice system. Rotation age is generally 40 - 45 years. Achieve age-class diversity by flexing rotation age within the compartment as well as across the landscape. Aspen will generally be managed using even-aged silvicultural systems to promote opportunities for early-successional wildlife species and to maintain the aspen type on the landscape.
- **Red and White pine** – Thin plantations through normal silvicultural order of removal to attain a more natural appearing forest of old pines. Thin white pines stands to promote development of old-growth white pine characteristics. Rotation age range can vary from 65 – 120 years for red pine and 80 – 180 years for white pine depending on soil type. Most red pine stands will naturally convert to oak or white pine through continuous



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silvicultural thinnings. Eventually the pine will be a component of the newly established stand and may serve as big tree silviculture and or old growth characteristics. With this in mind, the pine stand may never be completely rotated.

- **Tamarack** – Passively manage the few acres of this type on the property

- **Grass** - Apply periodic prescribed burns, mowing, herbicide treatment, and brush cutting to upland grass areas to maintain, restore and enhance.

- **Wetlands** – Protect hydrology through appropriate utilization of BMP's for water quality when conducting timber sales.

- **All Stands** –
 - Utilize mechanical and chemical treatment of undesirable species. Utilize BMP's for Invasive Species to help limit the introduction and spread of invasive species when conducting timber sales.

 - Identify threatened and endangered species and protect/provide habitat for a variety of game and non-game wildlife species, including aquatic species.

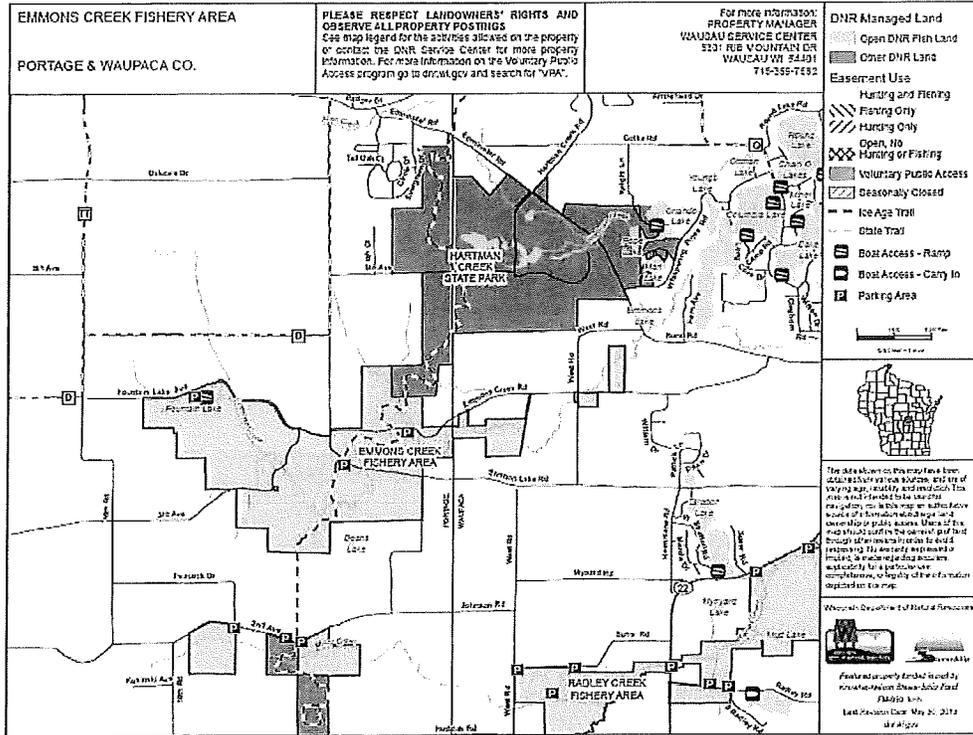
 - DNR Endangered Resources Species Guidance documents will be consulted (ERCOMMON\Species_Guidance\Species_Docs) and the management guidance and avoidance sections will be used to determine how and if timber management can occur. In cases where species guidance documents haven't yet been developed, avoidance of rare species will occur via practices such as time of year restrictions, modified harvest boundaries, and/or consultation with rare species experts.

 - 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.

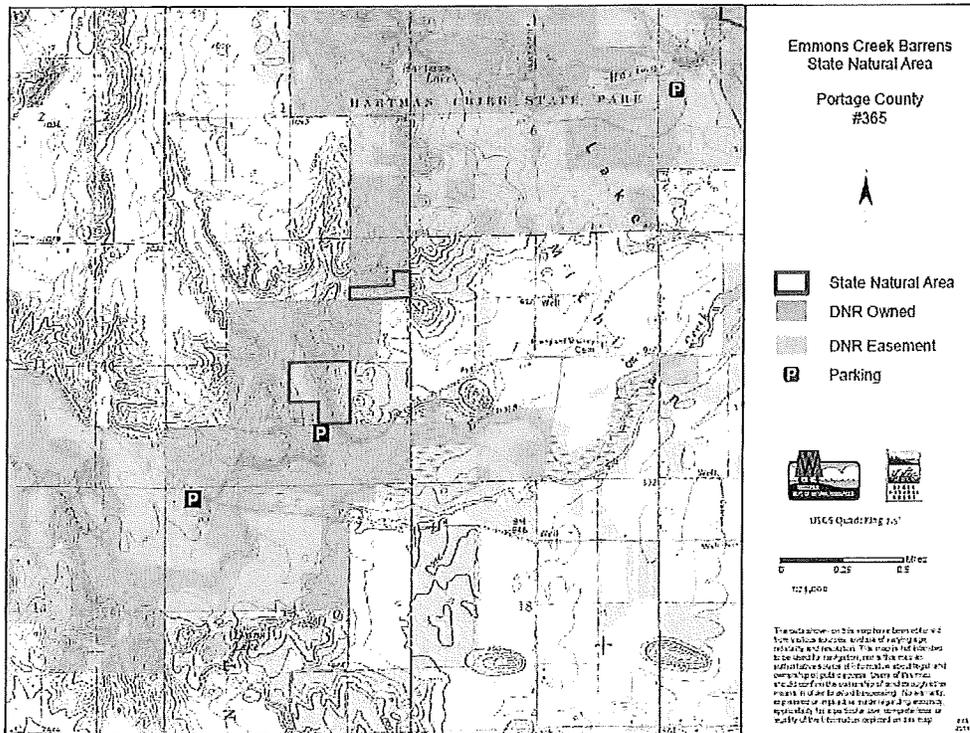
 - Retain reserve/legacy trees as groups or individuals throughout the property within harvested stands.



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Property Map



SNA Map



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Approvals:

Paul F. Labradak 8-5-15
Regional Ecologist Date

Lyle T Eiden 8/27/15
Forester Date

Tom Whisk 8/27/15
Property Manager Date

DemBerk 8-10-15
Area Team Supervisor Date