Interim Forest Management Plan

Property Identifiers

Property Name and Designation:
- Radley Creek Fishery Area
- Rem – North Fork Radley Creek

County(ies): Waupaca/Portage

Property Acreage:
- Radley Creek Fishery Area: 1419.08
- Rem – North Fork Radley Creek: 185.83

Forestry Property Code(s):
- Radley Creek Fishery Area: 6908
- Rem – North Fork Radley Creek: 5001

Master Plan Date: 1985

Part 1: Property Assessment (1-2 pages maximum)

The following items should be considered during the property assessment. Not all sections may be relevant for all properties.

General Property Description

- ***Landscape and regional context:*** The Radley Creek Fishery Area and Rem – North Fork Radley Creek are located within the Central Sand Hills Ecological Landscape. The Central Sand Hills EL 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 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. The growing season is long enough for agriculture but the sandy soils limit agricultural productivity somewhat.

  Historic upland vegetation consisted of oak-pine forest, oak savanna, and tall-grass prairie. Fens were common in this ecological landscape and occurred along with wet-mesic prairie, wet prairie, and rare coastal plain marshes. Current vegetation is composed of more than one-third agricultural crops, and almost 20% grasslands with smaller amounts of open wetland, open water, shrubs, barren, and urban areas. The major forested type is oak-hickory, with smaller amounts of white-red-jack pine, maple-basswood, lowland hardwoods, aspen-birch, and spruce-fir. Black spruce is a component of the Corning-Weeting lakes wetland complex in the northwestern corner of Columbia County. This is one of the southernmost locations for black spruce in the Upper Midwest.

- ***History of land use and past management:*** Prior to European settlement in the middle of the 19th century, primary cover types included Oak Woodlands, Oak Openings on the upland sites. Fire played a critical role in shaping these pre-settlement cover types. The

lowlands on the Radley Creek properties were likely forested and composed mainly of Swamp Conifers and to a 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 these projects began in the late 1950's.

The main branch of the Radley Creek is formed by two small headwater streams, Murry Creek and Pearl Creek, both originating in the Town of Belmont, Portage County. Categorized as Class I Trout Waters, these streams support 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 exist on portions of these properties and are maintained by county snowmobile associations as part of a regional network of trails. In recent years hiking trails have been constructed on these lands as a part of Wisconsin's Ice Age Trail Corridor.

Forest management activities have included wildlife shrub plantings, planting of pines, and limited timber harvesting. Sharecropping occurs on non-forested uplands and is used primarily as a habitat maintenance tool.

Site Specifics

- Current forest types, size classes and successional stages

Radley Creek Fishery Area: Property 6908

			Acres by Age Classes in 2013		
Forest Type	# of Stands	Acres	0-50	50-100	100+
Aspen	3	27	17	10	
White Birch	1	2	2		
Red Maple	2	42		42	
Oak	20	313	83	35	195
Jack Pine	2	6	6		
Red Pine	5	151	78	73	
White Pine	8	69	27	42	
Swamp Hardwood	2	253		253	
Tamarack	2	44		3	41
Total		907	213	458	236

Rem – North Fork Radley Creek: Property 5001

		Acres by Age Classes in 2013		
Forest Type	Acres	0-50	50-100	100+
Red Pine	37	33	4	
Oak	98		98	
Aspen	4	4		
Oak/Red maple	16		16	
Upland Grass	5			
Lowland Brush Alder	31			
Totals	191	37	118	

- ***State Natural Area designations:*** There is one designated State Natural Area located within the boundary of Radley Creek Fishery Area – Mud Lake-Radley Creek Savanna State Natural Area.
- **High Value Conservation Forests (HCVF) or other resources/natural community types limited in the landscape:** The plant communities associated with the SNA; the shallow hard water lake, wet forest, and northern dry forest and savanna.
- **Biotic Inventory status:** No
- Deferral/consultation area designations (refer to the following website):No
- **Rare species:** There are two rare birds, two invertebrates, and one herptile.
- ***Invasive species:*** Although a formal survey has not been conducted, the following species of invasive plants are known to be present on the properties; common and glossy buckthorn, garlic mustard, non-native honeysuckle, black locust, spotted knapweed, and reed canary grass.
- ***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 from moderately well drained to very poorly drained, and some areas are subject to periodic flooding.

Cultural and Recreational Considerations

- ***Cultural and archeological sites (including tribal sites):*** Archeological sites have been identified by the Wisconsin State Historical Society on Radley Creek Fishery Area. Prior to any management activity at these locations, consultation shall occur between property management and/or forestry staff and the Department Archaeologist. The outcomes of these consultations will be discussed at annual Integrated Property Management Meetings.

- ***Recreational Uses:*** Fishing, hunting and trapping are the primary recreational uses of this property. Snowmobile use occurs on the property on trails that are a part of a regional trail network. Other forms of nature based outdoor recreation such as hiking, berry picking, and cross country skiing also occur on the property.

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

Management Objectives (Outline primary forest management objectives):

- Maintain and enhance, as practicable, oak cover type
- 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

Mud Lake-Radley Creek Savanna SNA

- Manage the SNA as an aquatic preserve, natural processes will determine the structure of the lake and associated wetlands.
- Restore and maintain oak savanna spectrum
- Convert from an oak forest to an oak savanna, with variable canopy closure and residual basal area.
- Minimize regeneration to prevent from succeeding to an oak forest
- Manage as a potential Karner blue butterfly restoration site
- Provide opportunities for research and education on the highest quality native oak openings.

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):

- 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 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** – Manage according to generally accepted practices outlined in DNR's silvicultural handbook. Generally speaking, tamarack will be managed by strip or patch clear cutting.
- **All stands** - Retain reserve/legacy trees as groups or individuals throughout the property within harvested stands.
- Grass -Apply periodic prescribed burns to upland grass areas. Some upland grass areas will be allowed to convert to forests either through natural succession or by artificial planting.

Mud Lake-Radley Creek Savanna SNA

- Use variable density harvesting to reduce canopy closure (0-60 percent) and/or basal area (10-60BA); targeting non-white oak species for removal
- Suppress regeneration through prescribed burning, mechanical and herbicide treatments
- Salvage of trees after a major wind event can occur if the volume of woody material inhibits fire prescriptions
- Augmentation of the ground layer will only add species that historically would have been found on the site, using seeds or plugs from local genetic material
- Other allowable activities across the entire site include control of invasive plants and animals, maintenance of existing facilities, development of firebreaks, logging access lanes (if necessary), log landings and access to suppress wildfires
- Utilize BMP's for invasive species to help limit the introduction and spread of invasive species when conducting timber sales.
- Utilize BMP's for water quality when conducting timber sales.
- Natural Heritage Conservation species guidance documents will be to determine how and if timber management can occur.

Interim Forest Management Plan

Approvals:

District Ecologist — Date 03/24/16

Joseph A. Tucker — Forester — Date 03/04/2016

Jacob Fries — Property Manager — Date 03.04.2016

Area/Team Supervisor — Date Mar 8 2016