



Interim Forest Management Plan

Property Identifiers

Property Name: **Caroline Lake State Natural Area**

Counties: **Iron**

Property Acreage: **539 Acres**

Forestry Property Code: **2650, Compartment 303**

Master Plan Date: **None**

Part 1: Property Assessment

General Property Description

Landscape and Regional Context

The State-owned portion of Caroline Lake State Natural Area is located in Southwestern Iron County, within the North Central Forest Ecological Landscape and is associated with the Valhalla/Marenisco (McDonald) Moraines LTA (212Jc05). Although there is some private ownership adjacent to the property, it is located in a region that is dominated by large land ownerships including Forest Service, Ashland, Iron and Price County Forests, The Nature Conservancy and forest industrial lands. This is a completely forested landscape, with northern hardwoods and aspen being the dominant cover types and forested wetlands being common. The property has significant frontage along the shoreline of Caroline Lake, which forms the headwaters of the Bad River. The property is located within the Gogebic-Penoque Range COA, but is not associated with any Wisconsin Important Bird Areas.

Site Specifics

History of Land Use:

Prior to State of Wisconsin ownership, the land use history included hunting, fishing and occasional timber management in the uplands. This property has been purchased to provide an ecological reference area for this Land Type Association, protect old-growth and old forest stands of swamp hardwoods, white cedar and small inclusions of northern hardwoods, protect the headwaters of the Bad River, as well as to provide public hunting, fishing, trapping, sightseeing and hiking opportunities.



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- **Current forest types, size classes and successional stages**

Cedar 131 acres (32%)
Northern Hardwoods 117 acres (29%)
Swamp Hardwoods 97 acres (24%)
Aspen 57 acres (14%)
Red Pine 5 acres (1%)

- **Biotic Inventory Status** – Biotic Inventory has not taken place.
- **Deferral/Consultation Sites** – None have been designated
- **High Conservation Value Forest** – An Element occurrence for Open Bog is considered an HCVF type. Older stands of Northern Hardwoods on the property are HCVF.
- **Rare Species** – The property contains an Element Occurrence of a listed animal species. The NHI database will be screened prior to any management activities.
- **Invasive Species** – None are known to occur on the property, but a comprehensive survey has not taken place.

Cultural and Recreational Considerations

- **Cultural and archeological sites:** There are no cultural, archeological or historic sites that have been identified by the Wisconsin Historical Society on this property.
- **Recreational Uses:** Fishing, hunting, trapping and sightseeing are the primary recreational uses on this property.

Part 2: IFMP Components

Site Objectives

Manage the older stands at the site as a reserve for northern mesic/wet-mesic/wet forest, northern sedge meadow, an aquatic reserve and wetland protection area, and as an ecological reference area. Natural processes will determine the structure of the older forest and wetlands. Several stands in the northwest and northeast portions of the property are much younger including a pine plantation. These stands would be managed to provide diversity of cover types that will complement the older forests in the core of the property and mimic the management objectives on our partner's neighboring lands. Provide opportunities for research and education on the highest quality native northern forest and wetland ecosystems.

Management approach

The native species in the core old forest areas are managed passively, which allows nature to determine the ecological characteristics of the site. Exceptions include control of invasive plants and animals, maintenance of existing facilities, and access to suppress fires. Salvage of trees after a major wind event is not considered compatible with management objectives.

The peripheral stands would be managed to promote natural cover type diversity for this area. This means keeping small areas of aspen, gradually converting the planted pines to a more natural northern hemlock-hardwoods forest. The initial harvests are needed to prepare the stands for more options in the future. Presently they are in less than ideal status for growth and vigor.



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The initial harvest would promote more vigorous growth, which will permit these stands to be managed to older age classes by using extended rotation methods in the future.

Management approach

The core area of older swamp hardwoods, white cedar, and patches of northern hardwoods are managed passively, which allows nature to determine the ecological characteristics of the core area. The sedge meadow, lowland brush areas and the lake also do not require any active management at present, although if invasive species are found action may be taken. The active management areas will first be managed to attain better growth and vigor, and subsequently managed to attain old forest characteristics. Apply appropriate silvicultural systems when conducting timber management activities.

- Regenerate some areas of aspen to keep that component at the site.
- Conduct harvest in specified units of stand 2 to increase growth and vigor of these hardwoods stands. The long-term goal of this stand is to create old-growth forest characteristics. These active management areas would have a separate stand number for future tracking.
- Thin pine stands to maintain overall health as well as promote further development of hemlock-hardwood conversion.
- Release areas of advanced regeneration where appropriate.
- Offer opportunities for outdoor recreation to include hunting, fishing, trapping and nature study.
- Identify invasive plant species and implement control practices such as hand pulling, chemical and mechanical control to eliminate or reduce negative impacts.
- 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.

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):

Timber management activities on this property will be subject to the approval of the Northern District Ecologist. The Northern District Ecologist should be contacted prior to establishment of timber sales on Caroline Lake State Natural Area.

Aspen – Aspen stands will primarily be harvested through even-aged coppice regeneration cuts. Convert aspen stands to longer-lived species wherever opportunities exist. Green tree retention will be practiced in these stands while also focusing on snag and den/cavity tree retention. Retention will be concentrated near and between ephemeral ponds. In most cases, all pine, oak, hemlock and cedar will be retained, and areas of advanced regeneration of these species will be protected and released.

Red Pine Plantation – This stand will be managed by periodic thinning every 10 – 15 years or as needed. Convert this stand to hemlock-hardwoods naturally, over time. Super canopy trees can be retained long term for diversity and aesthetic value.



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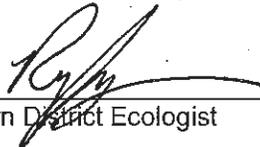
Northern Hardwoods – Passively manage stands 7 and 8. In stand 2, manage by uneven-aged selection (single tree or group selection) harvests to encourage long term multi-aged diversity. Gaps will be created to encourage age class diversity and edge cover. Promote oak, yellow birch and hemlock where opportunities exist. Snags, cavity trees, and other trees that have special value to wildlife will be retained.

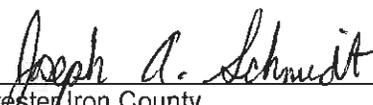
Cedar – Passively manage cedar stands **(Stands 4 and 6)**.

Swamp Hardwoods – Passively manage swamp hardwoods **(Stand 5)**.

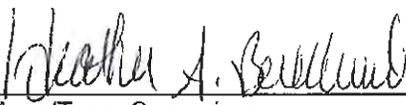
All stands - Retain reserve/legacy trees as groups or individuals throughout the property within harvested stands

Approvals:


Northern District Ecologist 12-9-13
Date


Forester Iron County 12-16-13
Date


Property Manager for Caroline Lake 12-9-13
Date


Area/Team Supervisor 12-16-13
Date