



Interim Forest Management Plan

Property Identifiers

Property Name and Designation: Myklebust Lake State Natural Area

County: Waupaca

Property Acreage: 173

Forestry Property Code(s): 6916

Master Plan Date: (if property has one) 1982

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

Myklebust Lake SNA is located within the SE corner of the Forest Transition Ecological Landscape which lies along the northern border of Wisconsin's Tension Zone, through the central and western part of the state, and supports both northern forests and agricultural areas. The central portion of the Forest Transition lies primarily on a glacial till plain deposited by glaciation between 25,000 and 790,000 years ago. The eastern and western portions are on moraines of the Wisconsin glaciation from 14,000 to 18,000 years ago. The growing season in this part of the state is long enough that agriculture is viable, although climatic conditions are not as favorable as in southern Wisconsin. Soils are diverse, ranging from sandy loam to loam or shallow silt loam, and from poorly drained to well drained.

The historic vegetation of the Forest Transition was primarily northern hardwood and hemlock hardwood forests. These mesic forests were dominated by sugar maple and hemlock, and contained some yellow birch, red pine, and white pine. Currently, 44% of this ecological landscape is forested compared to 86% forested before Euro-American settlement. Forested areas now consist primarily of northern hardwoods and aspen, with smaller amounts of oak and lowland hardwoods. Conifer and deciduous swamps are scattered throughout the ecological landscape and are often found near the headwaters of streams, and associated with lakes in kettle depressions on moraines. The eastern portion of the ecological landscape differs from the remainder being primarily forested and including numerous ecologically significant areas, some of which are extensive. The ecological landscape's flora shows characteristics of both northern and southern Wisconsin, corresponding to its position along the north side of the Tension Zone (Curtis 1959).

Specifically, Mykelbust Lake features a deep, 20-acre marl-bottomed lake with an undeveloped shoreline and exceptionally clear water provided by numerous springs. A narrow wetland fringe of bur-reed and hard-stemmed bulrush surrounds the lake and along the one-half mile outlet stream which flows into the South Branch of the Little Wolf River. Wild celery and water star-grass inhabit the high quality, swift current of the outlet and the macro-algae Chara is abundant on the lake bottom. The lake's macrophyte community is diverse and contains emergent aquatics such as white water-lily, bull-head pond-lily, arrowhead, flowering rush, wild rice, seven-angle pipewort,



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quillwort and several pondweeds. A northern wet forest of tamarack, red maple, and elm borders the outlet stream and contains a diverse understory of bog birch, poison sumac, and shrubby cinquefoil with rush aster, Kalm's lobelia, and nodding lady's tresses. Common bog arrow grass (*Triglochin maritima*), a species of concern in Wisconsin, is also present. A 2-acre black spruce bog is found in the southeast corner while the east shore contains a small stand of large white pine, some more than two feet in diameter. The remainder of the uplands is a mixture of second-growth northern hardwoods. The lake supports an excellent northern pike, largemouth bass, and panfish fishery. Rare animal species include king rail (*Rallus elegans*), and the mulberry wing butterfly (*Poanes massasoit*). Teal and wood ducks frequent the stream and amphibians include leopard, green, and mink frogs.

- History of land use and past management:

Much of the land was likely grazed with limited row crops on the flats on top of the moraines beginning around the turn of the century. More recently, invasive species removal work has been conducted on the property since the early 2000's. Initially, only annual trips to control purple loosestrife occurred; then in 2007, an intensive effort to tackle the common buckthorn problem began along the west and north sides of the lake commenced. South of the lake, buckthorn has heavily invaded the forest.

Site Specifics

- Current forest types, size classes and successional stages:

Forest Type	# of Stands	Acres	Acres by Age Classes in 2013		
			0-50	50-100	100+
Oak	1, 3, 9	37	0	12	25
White Pine	2, 5, 7, 11, 12, 14, 16	56	33	23	0
Aspen	4	8	0	8	0
Swamp Hardwoods	6	5	0	0	5
Red Maple	10	9	0	9	0
Red Pine	13	13	13	0	0
Non Forest Type	8, 15, 17	42	N/A	N/A	N/A
Total	17 stands	170 acres	46 acres	52 acres	30 acres



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	Red(Black) Oak in 2013	Red Maple in 2013	White Oak in 2013	Total
Stand 1 basal area by species	27	62	25	114
Stand 9 basal area by species	20	30	40	90
Average basal area by species	23	46	32	102
Percentage of species	22%	45%	31%	100%

- State Natural Area designations: Designated in 1982
- High Conservation Value Forests (HCVF) or other resources/natural community types limited in the landscape: The lake itself and stands; 1, 3, 4, 5, 6, 7, 8, 9, and the SW portion of stand 10.
- Biotic Inventory status: None
- Deferral/consultation area designations: None
- Rare species: There are six rare species known to occur on or near this property. There are two fish, two herptiles, one bird, and one invertebrate.
- Invasive species: There are numerous invasive species known to occur on site. The most abundant and problematic is common buckthorn. Other species include Japanese barberry, European honeysuckle, and purple loosestrife.
- Soils: Most soils are non-calcareous, moderately well-drained sandy loams derived from glacial till, but there is considerable diversity in the range of soil attributes. The area includes sandy soils formed in outwash, as well as organic soils, and loam and silt loam soils on moraines. There are many areas with shallow soils. Drainage classes range from poorly drained to excessively drained. Density of the till is generally high enough to impede internal drainage, so there are many lakes and wetlands in most parts of the Forest Transition. Soils throughout the ecological landscape have silt loam surface deposits formed in aeolian loess, about 6 to 24 inches thick in much of the area.

Cultural and Recreational Considerations

- Cultural and archeological sites (including tribal sites): None



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

Management Objectives (Outline primary forest management objectives):

- 1) Red and White Pine (Stands 2, 5, 7, 11, 12, 13, 14, 16)
 - a. Short term objective: even-aged management of red pine and white pine.
 - b. Long term objective: naturally convert stands to a mixed white pine/oak forest.
 - c. Restore ground layer composition.
 - d. Minimize introduction and spread of invasive species.
- 2) Oak Forest Stands (1, 3, 9)
 - a. Restore the oak, red maple forest to a more open oak woodland community that historically persisted at this site.
 - b. Retain open grown oaks for legacy trees, wildlife, aesthetics and future downed woody debris.
 - c. Long term objective: minimal regeneration, slow conversion to oak savanna
 - d. Restore ground layer composition.
- 3) Aspen (Stand 4)
 - a. Convert to oak woodland north of the lake and a mixed white pine/oak forest south and southeast of the lake.
 - b. Restore ground layer composition.
- 4) Stands south of Myklebust Lake (Part of Stand 1, 3, 4, 6, 10).
 - a. Minimize introduction and spread of invasive species.
 - b. Once invasive species are addressed, follow management objectives stated for 'northern stands' objectives (see above for stands 1, 3, and 4). Stand 6 will be managed through un-even aged management. Stand 10 will be managed through even-aged management.
 - c. Where possible, promote established regeneration for increased age and structure diversity

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):

Red Pine Plantations and White Pine

- a. Even-aged management of pine stands by following the standard order of removal guidelines.
- b. Favor white pine and oak trees during intermediate thinnings.
- c. Evaluate invasive species prior to timber harvesting. Harvest dates may need to be deferred until invasive species are addressed.

Oak Forest



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- a. Convert the oak forest to an oak woodland community type, by maintaining a canopy closure of 50-80%. Favor dominant tree species of this community type: white oak, bur oak, black oak, sometimes mixed with red oak and shagbark hickory.
- b. Several large vigorous trees, decadent trees, snags, and downed logs will be retained to enhance structural complexity and provide specialized habitat for numerous species.
- c. Restore ground layer composition by removing invasive shrubs and augmenting the ground layer with oak woodland species (legumes, grasses and composites). Frequent (annual) fires of low intensity, in conjunction with browsing, will be crucial in maintaining this community type (limiting regeneration, to prevent succession into an oak forest). Under this fire regime, shrub and sapling representation in oak woodlands would be minimal. The herbaceous layer will convert to legumes, grasses, composites and other forbs that are best adapted to light conditions of high filtered shade.
- d. The oak woodland will be managed to permit individual oak trees and small patches to attain old-growth characteristics. This management will be accomplished by thinning to 50-80% canopy closure, then assessing where young vigorous oaks are regenerating and selectively removing canopy oaks over these patches to permit some regeneration of the oak woodland canopy trees, while still retaining some trees to attain old-growth status. Focus will be to keep existing oak on the landscape for as long as possible. Long term, limited timber production will occur.

Aspen

- a. These stands are scattered, small slivers. Allow natural conversion or selectively harvest individual trees during red maple timber sale to promote conversion to oak woodland, oak savanna (above stands 3 and 9), or mixed pine/oak forest.
- b. Restore ground layer composition by removing invasive shrubs and augmenting the ground layer with oak woodland species.

Stands south of Myklebust Lake (Part of stand 1, 3, 4, 6, 10)

- a. Place "Z" code on these stands as no timber management should be conducted until the common buckthorn problem has been addressed. Regeneration of desirable trees is not feasible in the current condition.
- b. Invasive species must be evaluated before timber management occurs. Harvest dates may be deferred within these stands until the common buckthorn problem has been addressed. Once controlled, manage stands in conjunction with northern stands' prescriptions (see above for stands 1, 3, and 4). Stand 6 will be managed through un-even aged management. Stand 10 will be managed through even-aged management.
- c. Where possible, release established regeneration for increased age and structure diversity.



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Approvals:

Joe Henry 1/26/2015
District Ecologist Date

Mackenzie Siglinsky 2/04/2015
Forester Date

Joe Henry 1/26/2015
Property Manager Date

Jim Woodford 2/6/2015
Area/Team Supervisor Date