
NORTHERN HIGHLAND - AMERICAN LEGION STATE FOREST

PROPOSED MASTER PLAN AMENDMENT

USE AND MANAGEMENT OF ACQUISITIONS SINCE 2005 PLAN APPROVAL



OCTOBER 2013
WISCONSIN DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FORESTRY

ACKNOWLEDGEMENTS

Many individuals from the Department of Natural Resources have developed this analysis and draft plan through an integrated planning process. Through their hard work and expertise, these people have developed an analysis and draft plan that will guide the master plan amendment for the NHAL State Forest.

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Introduction

The purpose of this proposed amendment is to describe the future use and management for five parcels acquired since the approval of the Northern Highland - American Legion State Forest master plan in 2005. The amendment also codifies current management of two existing designated State Natural Areas located within the 2005 Master Plan boundary area. All parcels are located within Vilas County, Wisconsin (See Map 1).

In addition, there are proposed changes to the camping opportunities on the Rainbow Flowage portion on the NHAL, located in Oneida County. The Rainbow Flowage was acquired during the approval process of the 2005 Master Plan and use and recreation interests were not fully known at that time.

Existing, and Acquired Lands since 2005, included in the Proposed Amendment

| Parcel Name | Acres |
|-----------------------|--------------|
| Ontonagon River Block | 1,163 |
| Harris Lake Block | 554 |
| Van Vliet Block | 433 |
| Presque Isle Block | 101 |
| Papoose Lake Block | 851 |
| Dunn Lake SNA | 954 |
| Mary Lake SNA | 44 |
| Total Acres | 4,100 |

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Ontonagon River Block

PROPERTY DESCRIPTION

The Ontonagon River Block consists of 1160 acres of forested lands on both sides of Vilas County Highway B in the Township of Land O' Lakes. The property is bordered by NHAL State Forest on the south, large private ownerships on the east, west and south and Board of Commissioners of Public Lands lands on the north. The Ontonagon River runs along the west and south edges. The northeast fronts Dalzell Lake for about 1/4 mile. The property is well roaded with access off County Highway B and town road, Palmer Lake Road. Most of the parcel was formerly managed in the Managed Forest Law tax program for forest products with a sustainable plan. The property is located adjacent to State Forest Property Master Plan Classification, Winegar Moraines Forest Production Management Classification.

Landscape Classification

The properties are primarily within the North Central Forest Ecological Landscape, with a minor amount within the Northern Highland Ecological Landscape. The North Central Forest is approximately 9,545 square miles (6,107,516 acres) in size, representing 17.1% of the total land area of the state. Forests cover approximately 75% of this Ecological Landscape. The mesic northern hardwood forest is dominant, made up of sugar maple, basswood, and red maple, with some stands containing scattered hemlock, yellow birch, and/or white pine pockets. The aspen-birch forest type group is also abundant, followed by spruce-fir. Forested and non-forested wetland communities are common and widespread. These include Northern Wet-mesic Forest (dominated by either northern white cedar or black ash), Northern Wet Forest (acid conifer swamps dominated by black spruce and/or tamarack), non-forested acid peatlands (bogs, fens, and muskegs), alder thicket, sedge meadow, and marshes (including wild rice marshes) are widespread in the North Central Forest.

Geology, Soils and Topography

Landforms in the North Central Forest are characterized by end and ground moraines with some pitted outwash and bedrock-controlled areas. Kettle depressions and steep ridges are found in the northern portion of the Ecological Landscape. Drumlins are important landforms in some parts of the North Central Forest. Soils consist of sandy loams, sands, and silts. Organic soils, peats and mucks, are common in poorly drained lowlands.

The upland soils of this parcel are primarily loamy sands and sandy loams. There are small scattered pockets of sandy soils and peats and mucks in the lowlands. Topography is characteristic of the Winegar terminal moraine landscape, level to rolling with some hilly areas.

Lakes, Streams, and Wetlands

There are several localized but significant concentrations of glacial kettle lakes associated with end and recessional moraines, including the Winegar Moraine, which these properties are associated with. Major lakes in the area include Palmer, High, Big and West, along with dozens of small lakes and ponds. The property contains frontage along Dalzell Lake. Forested and unforested wetlands are also widespread, with peatland types being common. The majority of these properties are part of the Presque Isle River Watershed.

Current Cover Types and Natural Communities

Land cover is 76% upland forest, 19% lowland forest and 5% open lowlands (See Map 3). Natural communities include hemlock hardwoods, mesic northern hardwood forest and lowland conifer swamp communities. Opportunities exist for large ecological landscape of forest cover. Important forested wetland communities such as white cedar swamps and conifer swamps dominated by black spruce or tamarack are common. Other natural communities of this landscape to note are cool water streams, ephemeral ponds, and northern hardwood swamps.

Table 1. Acres of Cover Type on the Ontonagon River Block.

| Cover Type | Acres | % |
|-----------------------------|-------------|------------|
| Forested Types | | |
| Northern Hardwood | 581 | 48 |
| Black Spruce/Tamarack/Cedar | 188 | 16 |
| Aspen | 125 | 10 |
| Hemlock Hardwoods | 75 | 6 |
| Other | 53 | 5 |
| White Spruce | 58 | 5 |
| White Pine | 59 | 5 |
| Total | 1139 | 95 |
| Non-forested Types | 60 | 5 |
| Property Total | 1199 | 100 |

Source: WDNR Forest Recon Database

Recreation Facilities

The southern parcel of the Ontonagon River Block has a long history of enrollment in Managed Forest Law and was used by the public for those authorized activities, primarily hunting but also hiking and possibly trapping. It has a network of woods roads already in place and has fair access from the county highway. The northern parcel of the Ontonagon River Block was private property and there is little evidence of public use. There is no trail onto the property and users that arrive with a vehicle would need to park on the side of Palmer Lake Road. The lake frontage is undeveloped. Both parcels are contiguous to large blocks of BCPL ownership. There are no recreation facilities developed on either parcel.

Canoers have access to the Ontonagon River from County Highway B. This is an access to Palmer Lake from High Lake portage.

Historical/Archeological

There are no known cultural or archeological features located within the parcels.

Administrative and Other Facilities

There are no administrative or other facilities present on the parcels.

Approved by MRB
October 2013

Ontonagan River Block – Management and Use

Land Management Classification and Area Designation

Addition to Area 1 – Winegar Moraines Forest Production Area (2005 NHAL Master Plan Land Management Classification)

(from 2005 Master Plan)

Long-term Management Objectives (100 years)

- Maintain and enhance existing stands of northern-hardwoods to increase age diversity and to maintain stand health and vigor.
- Manage at a landscape level considering how these lands can complement the objectives in the adjacent Hemlock Hardwood Native Community Management Areas.
- Maintain areas of early successional forest (aspen, white birch) in mixed forest stands.
- Maintain diversity of forested and unforested wetlands.

Short-term Management Objectives (50 years)

- Develop a diversity of ages and stand sizes for aspen, white birch and northern hardwoods.
- Retain and encourage yellow birch, white pine and hardwood components on aspen dominated sites. Some harvesting of these species is permitted to meet stand goals.
- Maintain diversity of forested and unforested wetlands. Some black spruce and tamarack stands would be regenerated through active management. Priorities are in biologically mature stands on productive sites that can be regenerated by recommendations outlined in the General Management Prescriptions section of the NHAL Master Plan.
- Manage a small reduction of aspen acreage to northern hardwoods stands.
- Increase northern hardwoods with active management from aspen, white birch and fir-spruce types. Manage these stands for multiple age classes, tree sizes and a diversity of tree species.
- Encourage white pine and red pine components in natural stands and manage plantations for biological maturity.
- Maintain hemlock-hardwood stands at existing levels and encourage scattered hemlock in all stands.

Resource Management Prescriptions

- ALL management prescriptions for Area 1 in 2005 Master Plan apply with the addition of:
- Encourage hemlock, yellow birch, and white pine on rich upland soils. The use of various intensity thinning, shelterwood, group selection and site preparation would be employed to accomplish increased diversity of species regeneration in.
- Designate the Ontonagan Block as a research overlay zone with additional objectives and prescriptions.
- Increase early successional forest types, primarily aspen, in the Ontonagan Block, as needed for representative cover types for research purposes.
- Recreation Management
- This block is best suited to passive remote recreation like hunting, hiking, fishing, and trapping.
- Hunting would not be permitted within the research area.
- The area along highway B may provide a trail corridor linking communities as part of a network of regional biking trails.
- Access to Dalzell Lake would be walk-in only as this is a very small lake (25 acres).

Research Overlay Designation

Public lands provide a wide range of opportunities, including support for research. The Department partners with universities, government, and non-government organizations on natural resource research projects across the state. These projects provide valuable information for land managers, resource professionals, and the public. Research in the biological sciences and natural resource management shape land management activities and policy, and enhance our understanding of biological processes regionally and state-wide. The projects would provide opportunities for adaptive research for the biological sciences and natural resource management issues.

This block provides a unique opportunity to fulfill a recommendation of the 2012 Deer Trustee Report to research deer impacts on forest regeneration, vegetative and wildlife diversity and overall ecosystem sustainability at varied densities of deer population. The entire southern parcel is designated for research use with preliminary plans to implement two research areas, each roughly 400 acres, to enclose and assess deer population impacts. These areas would be fenced and exclude public access. Research areas would include an active forest management component to replicate forest management practices. This research is intended to continue for 30 years.

Reference: Kroll, J, Guynn, D., and G. Alt. 2012. 21st Century Model for Deer Management in Wisconsin: Final Report and Recommendations by Wisconsin White-Tailed Deer Trustee and Review Committee. Retrieved May 10, 2013 from <http://doa.wi.gov/secy/documents/cover.pdf>.

Harris Lake Block

PROPERTY DESCRIPTION

This property consists of two parcels that fall within the boundary of the NHAL State Forest totaling approximately 554 acres (See Map 4). It is located in northwest Vilas County, approximately two miles northeast of the Town of Winchester. The property includes almost all of Nell Lake frontage as well as frontage on Harris Lake and Harris Creek. The property is 43% upland forested, 30% lowland forest and 27% open lowland areas. Public road access is limited to town road, West Harris Lake Road which ends at the east border of the Nell Lake block and an easement access of unimproved woods road coming off CHY O. This access road runs through private landholdings for a mile or so and enters the northwest corner of the Harris Creek parcel. Harris Creek cuts through the northern block of ownership and does not have a crossing.

Nell Lake is surrounded by forested wetlands that are predominately black spruce swamp and semi-open muskeg. In the uplands there are stands of old growth hemlock hardwoods. The remainder of the uplands on the property are forested with previously managed stands of northern hardwoods with inclusions of remnant super-canopy white pine. Some of these stands also contain old forest characteristics. This site protects an ecologically significant stretch of undeveloped lake frontage on a large developing lake and several small undeveloped bog lakes. In addition, the old growth successional stages found here are now uncommon over most of northern Wisconsin.

Landscape Classification

The Harris Lake property is located primarily within the North Central Forest Ecological Landscape, with the southern 120 acres found within the Northern Highland Ecological Landscape. The North Central Forest is approximately 9,543 square miles (6,107,516 acres) in size, representing 17.1% of the total land area of the state. Forests cover approximately 75% of this Ecological Landscape. The mesic northern hardwood forest is dominant, made up of sugar maple, basswood, and red maple, with some stands containing scattered hemlock, yellow birch, and/or white pine pockets. The aspen-birch forest type group is also abundant, followed by spruce-fir. Forested and non-forested wetland communities are common and widespread. These include Northern Wet-mesic Forest (dominated by either northern white cedar or black ash), Northern Wet Forest (acid conifer swamps dominated by black spruce and/or tamarack), non-forested acid peatlands (bogs, fens, and muskegs), alder thicket, sedge meadow, and marshes (including wild rice marshes) are widespread in the North Central Forest.

Geology, Soils and Topography

Landforms in the North Central Forest are characterized by end and ground moraines with some pitted outwash and bedrock-controlled areas. Kettle depressions and steep ridges are found in the northern portion of the Ecological Landscape. Drumlins are important landforms in some parts of the North Central Forest. Soils consist of sandy loams, sands, and silts. Organic soils, peats and mucks, are common in poorly drained lowlands.

Lakes, Streams, and Wetlands

There are several localized but significant concentrations of glacial kettle lakes associated with end and recessional moraines, including the Winegar Moraine, which these properties are associated with. Major lakes in the area include No Mans, Rock, North Turtle and Rainbow, along with dozens of additional small lakes and ponds. The Harris Lake property contains frontage along both Nell and Harris Lakes. Forested and unforested wetlands are also widespread, with peatland types being common. Most of the property is within the Presque Isle River Watershed, with the southern reaches of the property located in the Flambeau Flowage watershed.

Current Cover Types and Natural Communities

Based on data from the previous owner's 2006 inventory, the forest and non-forest cover types, were mapped and confirmed. Natural communities include hemlock hardwoods, mesic northern hardwood forest, aspen, a small white pine stand and lowland conifer swamp communities (See Map 5). Opportunities exist for large ecological landscape of forest cover. Important forested wetland communities such as white cedar swamps and conifer swamps dominated by black spruce or tamarack are common. Other natural communities of this landscape to note are cool water streams, ephemeral ponds, and northern hardwood swamps.

| Table 2. Acres of Cover Type on the Harris Lake Parcel. | | |
|--|--------------|------------|
| Cover Type | Acres | % |
| Forested Types | | |
| Black spruce | 167 | 29 |
| Northern hardwood | 143 | 25 |
| Aspen | 52 | 9 |
| Hemlock | 47 | 8 |
| Other | 11 | 2 |
| Total | 420 | 73 |
| Non-forested Types | 157 | 27 |
| Property Total | 577 | 100 |

Source: WDNR Forest Recon Database

Recreation Facilities

The two units of this acquisition have access challenges. The current recreation use is mostly likely by adjoining landowners. The north unit, adjacent to Harris Lake, is surrounded by private land, MFL enrolled private land, and Harris Lake. There is legal access but it is undeveloped and remains gated. The Nell Lake unit is located at the end of a town road and access from that road without crossing private land is not possible. Both properties offer opportunities for hunting, fishing, hiking, and trapping.

Historical/Archeological

There are no known cultural or archeological features located within the parcel.

Administrative and Other Facilities

There are no administrative or other facilities present on the parcel.

Approved by MRB
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Harris Lake Block – Management and Use

This block contains two units, the 115 acre Nell Lake unit and a 400 acre unit primarily north of Harris Lake. It was purchased early in 2013 from the Board of Commissioners of Public Trust Lands. The block is located in Winchester Township in far northern Vilas County.

Public access to the Harris Lake block is limited to water access (Harris Lake and Harris Creek). The Nell Lake block is accessible from adjoining lands with a conservation easement but the surrounding private ownership would prevent walk-on access to either block from public roads.

Land Management Classification

The majority of the block would be placed in the NHAL Master Plan, Forest Production Management Classification Area 1 – Winegar Moraine.

The Nell Lake Unit would be placed in the NHAL Master Plan, Native Community Management Classification Area 10, Peatland / Wetlands

Existing Area 1

Long-term Management Objectives (100 years)

- Maintain and enhance existing stands of northern-hardwoods to increase age diversity and to maintain stand health and vigor.
- Manage at a landscape level considering how these lands can complement the objectives in the adjacent Hemlock Hardwood Native Community Management Areas.
- Maintain areas of early successional forest (aspen, white birch) in mixed forest stands.
- Maintain diversity of forested and unforested wetlands.

Short-term Management Objectives (50 years)

- Develop a diversity of ages and stand sizes for aspen, white birch and northern hardwoods.
- Retain and encourage yellow birch, white pine and hardwood components on aspen dominated sites. Some harvesting of these species is permitted to meet stand goals.
- Maintain diversity of forested and unforested wetlands. Some black spruce and tamarack stands would be regenerated through active management. Priorities are in biologically mature stands on productive sites that can be regenerated by recommendations outlined in the General Management Prescriptions section of the NHAL Master Plan.
- Manage a small reduction of aspen acreage to northern hardwoods stands.
- Increase northern hardwoods with active management from aspen, white birch and fir-spruce types. Manage these stands for multiple age classes, tree size and a diversity of tree species.
- Encourage white pine and red pine components in natural stands and manage plantations for biological maturity.
- Maintain hemlock-hardwood stands at existing levels and encourage scattered hemlock in all stands.

Resource Management Prescriptions

- The Harris unit, 400 acres, would continue in active management and follow the prescriptions for Area 1.
- The Nell lake Unit, 115 acres, would be designated as a State Natural Area and passively managed.

Recreation Management

- This block is best suited to remote recreation including hunting, hiking, fishing, and trapping.
- Trail access to Nell Lake would be gained via property owned by The Last Wilderness Conservation Association (purchased with a Stewardship grant).

Van Vliet Block

PROPERTY DESCRIPTION

The Van Vliet area is approximately 433 acres in size located in the township of Presque Isle in Vilas County (See Map 6). The property includes 9,435 feet of lake frontage on Van Vliet and Averill Lakes, as well as an additional 6,135 feet of frontage on four other small lakes and ponds. The property is configured as two parcels separated by interconnected Van Vliet and Averill lakes. The parcel on the west side is about 78 acres in size with upland northern hardwoods and scenic views of the lakes. The remaining acreage is on the eastern side of the lakes and includes large stands of old-growth hemlock and northern hardwood, as well as pockets of forested wetlands and bogs. Both parcels have access by town roads, East Van Vliet Road and West Van Vliet Road in the Township of Presque Isle. There are currently parking areas and trail maps located off these roads, provided by a local Friends group.

The Van Vliet property contains a significant block of previously managed hemlock-hardwood, with some stands displaying old-growth characteristics. This is one of the largest known stands of old-growth hemlock hardwoods in this land type in Wisconsin. Also present are undisturbed black ash-white cedar swamps in kettle depressions, several small undeveloped bog lakes and 1.5 miles of frontage on Averil and Van Vliet Lakes. This site protects an ecologically significant stretch of undeveloped lake frontage on a large developing lake and several small undeveloped bog lakes.

Landscape Classification

The Van Vliet property is primarily within the North Central Forest Ecological Landscape, with a portion of Van Vliet within the Northern Highland Ecological Landscape. The North Central Forest is approximately 1,543 square miles (6,107,516 acres) in size, representing 17.1% of the total land area of the state. Forests cover approximately 75% of this Ecological Landscape. The mesic northern hardwood forest is dominant, made up of sugar maple, basswood, and red maple, with some stands containing scattered hemlock, yellow birch, and/or white pine pockets. The aspen birch forest type group is also abundant, followed by spruce-fir. Forested and non-forested wetland communities are common and widespread. These include Northern Wet-mesic Forest (dominated by either northern white cedar or black ash), Northern Wet Forest (acid conifer swamps dominated by black spruce and/or tamarack), non-forested acid peatlands (bogs, fens, and muskegs), alder thicket, sedge meadow, and marshes (including wild rice marshes) are widespread in the North Central Forest.

Geology, Soils and Topography

Landforms in the North Central Forest are characterized by end and ground moraines with some pitted outwash and bedrock-controlled areas. Kettle depressions and steep ridges are found in the northern portion of the Ecological Landscape. Drumlins are important landforms in some parts of the North Central Forest. Soils consist of sandy loams, sands, and silts. Organic soils, peats and mucks, are common in poorly drained lowlands.

Lakes, Streams, and Wetlands

There are several localized but significant concentrations of glacial kettle lakes associated with end and recessional moraines, including the Winegar Moraine, which these properties are associated with. Major lakes in the area include Presque Isle, Crab, Amour and Horsehead, along with dozens of additional small lakes and ponds. The Van Vliet property contains frontage along Van Vliet and Averill Lakes. Forested and unforested wetlands are also widespread, with peatland types being common. These properties are within the Presque Isle watershed.

Current Cover Types and Natural Communities

Based on data from the previous owner's 2006 inventory, the forest and non-forest cover types, were mapped and confirmed (See Map 7). Forest cover is divided up as 82% upland forest, 8% lowland forest and 10% non-forest lowlands and lakes. Natural communities include hemlock hardwoods, mesic northern hardwood forest, a small white pine stand and lowland conifer swamp communities. Opportunities exist for large ecological landscape of forest cover. Important forested wetland communities such as white cedar swamps and conifer swamps dominated by black spruce or tamarack are common.

| Table 3. Acres of Cover Type on the Van Vliet Parcel. | | |
|--|--------------|------------|
| Cover Type | Acres | % |
| Forested Types | | |
| Hemlock hardwood | 184 | 43 |
| Northern Hardwood | 149 | 36 |
| White Birch | 11 | 3 |
| White Cedar | 30 | 7 |
| Black Spruce | 6 | 1 |
| Total | 380 | 90 |
| Non-forested Types | 45 | 10 |
| Property Total | 425 | 100 |

Source: WDNR Forest Recon Database

Recreation Facilities

Both the east and west units of this parcel have moderately developed trail systems that are mapped and marked. Interpretive signs are in place. The trails are managed by the non-profit group Friends of the Van Vliet Hemlocks and they funded the development of trail signs, maps, and other interpretive publications. Access to the west unit is adjacent to a town road. Trails lead from the state owned land on to private lands to the west.

On the east side the trail system is accessed from the end of East Van Vliet Road. This road passes near a number of homes and the parking lot is at the end of the town road, where a private driveway begins. The increased use of the trail system has intensified the conflict between trail users and the adjoining landowners.

Both parcels are likely used for other passive recreation including hunting, fishing, hiking, trapping and skiing. The east unit provides walk-in access to a very small un-named lake.

Historical/Archeological

There are no known cultural or archeological features located within the parcel.

Administrative and Other Facilities

There are no administrative or other facilities present on the parcel.

Approved by NRPB
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Van Vliet Hemlocks Block – Management and Use

The 433 acre Van Vliet Hemlocks Block is located in Presque Isle Township in northern Vilas County. The east unit is 355 acres and the west unit is 78 acres. The property was purchased from the Board of Commissioners of Public Trust Lands in 2012. The Friends of the Van Vliet Hemlocks manages a network of trails on the property and provides interpretive programs and materials, including brochures and signs which support public use of this property.

Land Management Classification

The Van Vliet Hemlocks Block would be placed in the Northern Highland-American Legion State Forest (NHAL) Master Plan Land Management Classification Area 9 – Hemlock Hardwood Native Community Management Area.

Long-term Management Objectives (100 years)

- Maintain multiple sites across the NHAL landscape that support old-growth hemlock hardwood communities. These sites support very old trees, complex old growth forest dynamics and provide habitat for those species that do best in these ecological conditions.
- Use these sites as ecological reference areas and also for research, education, and interpretation
- Provide old-growth wildlife viewing opportunities and sites where people can experience the inspirational aesthetic and philosophical values associated with an old-growth hemlock forest.

Short-term Management Objectives (50 years)

- Increase the age diversity, composition, and the patch size of stands within the forested area, emphasizing hemlock, white pine, sugar maple, yellow birch and basswood.
- Increase the extent of white pine.
- Establish and maintain large amounts of coarse woody debris, numerous standing dead snags, and an age diversity of trees.
- Maintain six passively managed ecological reference sites; Catherine Lake (867 acres, includes lake and private acres), part of North Bass Lake West (213 acres), part of Sweeney Lake (60 acres), Tomahawk Lake Hemlocks (226 acres), Van Vliet Hemlocks (433 acres) and Mary Lake (44 acres).
- Maintain small areas of red oak, white birch, and aspen in the actively managed zones.

Resource Management Prescriptions for the Van Vliet Block

- The Van Vliet block would be designated as a State Natural area and ecological reference site and passively managed.
- The use of active management to control invasive species and maintain public safety is authorized.
- Salvage will not generally be conducted. Exceptions to the salvage restriction may be granted after review by an interdisciplinary team.

Recreation Management

- An existing network of moderately developed hiking and skiing trails would be maintained and enhanced, where necessary, to provide a sustainable public recreation feature.
- Access to the east unit trails would be sought from Cook Lake Road if possible by land acquisition.
- Land Acquisition would offer additional trail opportunities at the west unit.

Approved by NRB
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Presque Isle Block

PROPERTY DESCRIPTION

Presque Isle Block is approximately 101 acres located on the edge of the Town of Presque Isle village (See Map 8). This parcel was formerly owned by the NHAL, was transferred to Fisheries for rearing ponds and then came back on a reversionary clause. Vilas County HWY B cuts across the eastern edge. This is the only public road access onto the property. To the south, the Town of Presque Isle has developed a Town Park and is in the process of adding trails to the State Forest property. The remaining boundary is adjacent private property owners on mostly undeveloped forest land. The South Branch of the Presque Isle River bisects the middle of the property, flowing north. 31% of this parcel is upland forest, 29% is lowland swamp hardwoods and 40% is open lowland bog and water.

Landscape Classification

The Presque Isle property is within the North Central Forest Ecological Landscape. The North Central Forest is approximately 9,543 square miles (6,107,516 acres) in size, representing 17.1% of the total land area of the state. Forests cover approximately 75% of this Ecological Landscape. The mesic northern hardwood forest is dominant, made up of sugar maple, basswood, and red maple, with some stands containing scattered hemlock, yellow birch, and/or white pine pockets. The aspen-birch forest type group is also abundant, followed by spruce-fir. Forested and non-forested wetland communities are common and widespread. These include Northern Wet-mesic Forest (dominated by either northern white cedar or black ash), Northern Wet Forest (acid conifer swamps dominated by black spruce and/or tamarack), non-forested acid peatlands (bogs, fens, and muskegs), alder thicket, sedge meadow, and marshes (including wild rice marshes) are widespread in the North Central Forest.

Geology, Soils and Topography

Landforms in the North Central Forest are characterized by end and ground moraines with some pitted outwash and bedrock-controlled areas. Kettle depressions and steep ridges are found in the northern portion of the Ecological Landscape. Drumlins are important landforms in some parts of the North Central Forest. Soils consist of sandy loams, sands, and silts. Organic soils, peats and mucks, are common in poorly drained lowlands.

Lakes, Streams, and Wetlands

There are several localized but significant concentrations of glacial kettle lakes associated with end and recessional moraines, including the Winegar Moraine, which these properties are associated with. Major lakes in the area include Presque Isle, Crab, Amour and Horsehead, along with dozens of additional small lakes and ponds. Presque Isle Parcel contains frontage along a small unnamed lake and with approximately 1,400 feet of frontage on the South Branch of the Presque Isle River. Forested and unforested wetlands are also widespread, with peatland types being common. These properties are within the Presque Isle watershed.

Current Cover Types and Natural Communities

Based on data from NHAL forest inventory, the upland areas are scattered and the lowland areas predominate the property (See Map 9). Native communities are mesic northern hardwoods and scattered aspen stands in the uplands. The swamp hardwood stands have a variety of species and occupy the areas adjacent the river and the creek and open wetland edges. Half of one of the former rearing ponds is on the property.

| Table 4. Acres of Cover Type on the Presque Isle Parcel. | | |
|--|------------|------------|
| Cover Type | Acres | % |
| Forested Types | | |
| Swamp Hardwood | 30 | 29 |
| Northern Hardwood | 19 | 18 |
| Aspen | 13 | 13 |
| Total | 62 | 60 |
| Non-forested Types | | |
| | 41 | 40 |
| Property Total | 103 | 100 |

Source: WDNR Forest Recon Database

Recreation Facilities

The west portion of this property adjoins Town of Presque Isle land near the village that has recently been developed into a park providing a picnic shelter, beach, fitness trail and ice-skating. The north pond, on the property, has been drained. A snowmobile trail crosses the property and a road around the south pond is used for biking and hiking. The town has requested a land use agreement with the forest to develop hiking/skiing trails on the state land north of the town park. A small parcel to the east lies adjacent to Statehouse Lake and is accessible from Town property but there is no developed access there.

Historical/Archeological

There are no known cultural or archeological features located within the Presque Isle parcel.

Administrative and Other Facilities

There are no administrative or other facilities present on the Presque Isle parcel.

Approved by NRB
October 2013

Presque Isle Block – Management and Use

This 101 acre block is located on the edge of Presque Isle Village and north of the town park. The parcel was re-designated state forest land after the Fisheries program abandoned use of a pair of rearing ponds on the site. This block also includes a very small parcel on Stateline Lake.

The entire block would be placed in the NHAL Master Plan Land Management Classification Area 1 – Winegar Moraines Forest Production Area.

Long-term Management Objectives (100 years)

- Maintain and enhance existing stands of northern-hardwoods to increase age diversity and to maintain stand health and vigor.
- Manage at a landscape level considering how these lands can complement the objectives in the adjacent Hemlock Hardwood Native Community Management Areas.
- Maintain areas of early successional forest (aspen, white birch) in mixed forest stands.
- Maintain diversity of forested and unforested wetlands.

Short-term Management Objectives (50 years)

- Develop a diversity of ages and stand sizes for aspen, white birch and northern hardwoods.
- Retain and encourage yellow birch, white pine and hardwood components on aspen dominated sites. Some harvesting of these species is permitted to meet stand goals.
- Maintain diversity of forested and unforested wetlands. Some black spruce and tamarack stands would be regenerated through active management. Priorities are in biologically mature stands on productive sites that can be regenerated by recommendations outlined in the General Management Prescription section of the NHAL Master Plan.
- Manage a small reduction of aspen acreage to northern hardwoods stands.
- Increase northern hardwoods with active management from aspen, white birch and fir-spruce types. Manage these stands for multiple age classes, tree sizes and a diversity of tree species.
- Encourage white pine and red pine components in natural stands and manage plantations for biological maturity.
- Maintain hemlock-hardwood stands at existing levels and encourage scattered hemlock in all stands.

Resource Management Prescriptions

- This area should be monitored for Emerald Ash Borer due to the high percentage of Black Ash.
- This parcel is to be actively managed under Master Plan Area 1 goals and objectives.

Recreation Management

- The property currently is used for a snowmobile trail and that would continue to be permitted.
- The township has sought land use agreements for development of skiing and hiking trails and this is compatible with the land management classification and would be permitted.
- Hunting and trapping would be allowed as permitted by local ordinance and Department policy related to the proximity to trails and development.
- A boat landing would be permitted to be built on Stateline Lake.

Approved by NRPB
October 2013

Papoose Block

Note: The Papoose Block was designated as a Forest Production Classification, Area 1 Winegar Moraines Area at the time of NRB purchase approval in May, 2013.

Papoose Lake Block – Management and Use

The 850.5 acre property is located in the Town of Winchester in northern Vilas County. Historical use was a long time ownership by the forest products industry in forest management and the land was open to public recreation.

Land Management Classification

The Papoose Lake Block would be placed in the NHAL Master Plan Land Management Classification Area 1 – Winegar Moraines Forest Production Area.

Long-term Management Objectives (100 years)

- Maintain and enhance existing stands of northern-hardwoods to increase age diversity and to maintain stand health and vigor.
- Manage at a landscape level considering how these lands can complement the objectives in the adjacent Hemlock Hardwood Native Community Management Areas.
- Maintain areas of early successional forest (aspen, white birch) in mixed forest stands.
- Maintain diversity of forested and unforested wetlands.

Short-term Management Objectives (50 years)

- Develop a diversity of ages and stand sizes for aspen, white birch, and northern hardwoods.
- Retain and encourage yellow birch, white pine and hardwood components on aspen dominated sites. Some harvesting of these species is permitted to meet stand goals.
- Maintain diversity of forested and unforested wetlands. Some black spruce and tamarack stands would be regenerated through active management. Priorities are in biologically mature stands on productive sites that can be regenerated by recommendations outlined in the General Resource Management Prescriptions section of the NHAL Master Plan.

Resource Management Prescriptions

- Manage a small reduction of aspen acreage to northern hardwoods stands.
- Increase northern hardwoods with active management from aspen, white birch and fir-spruce types. Manage these stands for multiple age classes, tree sizes and a diversity of tree species.
- Encourage white pine and red pine components in natural stands and manage plantations for biological maturity.
- Maintain hemlock-hardwood stands at existing levels and encourage scattered hemlock in all stands.

Recreation Management

- The area currently accommodates a snowmobile trail and that would continue to be authorized.
- The adjoining landowner is actively planning and constructing public trails for hiking, biking and skiing on his property in cooperation with the North Lakeland Discovery Center. Extension of those trails onto this property with a land use agreement would be permitted.
- The property offers a corridor linking the communities of Presque Isle with Manitowish Waters as part of a network of regional biking trails.

Dunn Lake SNA

PROPERTY DESCRIPTION

Dunn Lake State Natural Area is a 954-acre property located in Vilas County (See Map 12). Dunn Lake features a mosaic of communities surrounding the lake, giving the area a wilderness aspect. The site contains an outstanding example of northern mesic forest, with super-canopy white pine above large hemlock, yellow birch, sugar maple, and basswood. This undisturbed stand lies on the northeast side of Dunn Lake and extends eastward across the Presque Isle River. Another old-growth stand lies on an upland peninsula west of Sanborn Lake. The Presque Isle River is a meandering, soft, warm water stream that supports a high diversity of native aquatic plants. Bordering the stream are excellent examples of northern sedge meadow, alder thicket, and northern wet forest communities. Recent beaver activity has altered the composition of these communities. The uplands in the southern portion have had a history of timber management. Bald eagles have nested in the large white pines.

Landscape Classification

The Dunn Lake SNA is primarily within the Northern Highland Ecological Landscape, with a minor amount within the North Central Forest Ecological Landscape. The Northern Highland is approximately 2,081 square miles (1,331,970 acres), representing 3.7% of the total land area of the State of Wisconsin.

Geology, Soils and Topography

Most of the Northern Highland is an undulating, gently rolling glacial outwash plain with many kettle lakes, wetlands, and bogs. Remnant moraines and drumlins occur often, with their lower slopes covered with outwash sands. Most soils are sands and gravels, some with a loamy mantle. Soil productivity is low compared to glacial till but relatively high for outwash sands. Wetlands are numerous; most have organic soils of peat or muck.

Lakes, Streams, and Wetlands

Dunn Lake features a mosaic of communities surrounding the lake, giving the area a wilderness aspect. The site contains an outstanding example of northern mesic forest, with super-canopy white pine above large hemlock, yellow birch, sugar maple, and basswood. This undisturbed stand lies on the northeast side of Dunn Lake and extends eastward across the Presque Isle River. Another old-growth stand lies on an upland peninsula west of Sanborn Lake. The Presque Isle River is a meandering, soft, warm water stream that supports a high diversity of native aquatic plants. Bordering the stream are excellent examples of northern sedge meadow, alder thicket, and northern wet forest communities. Recent beaver activity has altered the composition of these communities. The uplands in the southern portion have had a history of timber management. Bald eagles have nested in the large white pines.

Current Cover Types and Natural Communities

Current land cover is characterized as 48% upland forest, 34% wetlands (both forested and non-forested), 13% open water, 5% grassland and open land, and 4% urban (See Map 12).

| Cover Type | Acres | % |
|---------------------------|------------|------------|
| Forested Types | | |
| Hemlock Hardwood | 178 | 19 |
| Aspen | 158 | 17 |
| Northern Hardwood | 142 | 15 |
| White Birch | 121 | 13 |
| Black Spruce | 95 | 10 |
| White Pine | 24 | 2 |
| Total | 718 | 76 |
| Non-forested Types | | |
| | 233 | 24 |
| Property Total | 951 | 100 |

Source: WDNR Forest Recon Database

Recreation Facilities

This remote property has very limited access via private roads. There are no recreational developments. Most recreation is probably by adjoining landowners and their guests. The property has frontage on Dunn, McCullough, and Morton Lakes.

Historical/Archeological

There are no known cultural or archeological features located within Dunn Lake SNA.

Administrative and Other Facilities

There are no administrative or other facilities present on the Dunn Lake SNA.

Approved by NRB
October 2013

Dunn Lake Block – Management and Use

This is a 954 acre parcel located in the Town of Presque Isle in far northern Vilas County. It has been managed by the Bureau of Natural Heritage Conservation. This amendment would designate the property as state forest. It would continue to be a state natural area.

Special Designation

This area has been designated a state natural area since 1990.

Land Management Classification

This area would be placed in the NHAL Master Plan Land Management Classification Area 12 – Mixed Forest Native Community Management.

Long-term Management Objectives (100 years)

- Maintain sites across the NHAL landscape with old-growth pine, oak and mixed hardwood characteristics and variable patch sizes, including some patches that are not limited to stand boundaries (i.e. may include all or portions of several forest stands). The mix of forest types reflects the diversity of the topography and site conditions across the landscape.
- Provide opportunities for research, education, and ecological interpretation as well as demonstration of old-growth mixed forest management.

Short-term Management Objectives (50 years)

- Enhance the development of a mixed forest dominated by old trees, large amounts of coarse woody debris, numerous standing dead snags, and a diversity of tree ages.
- Maintain mid-tolerant tree species composition while incorporating variable patch sizes and increase the overall age of the forest.
- Maintain four passively managed ecological reference sites – Lost Canoe (1,136 acres including 269 lake and spring acres), Allequash Lake and Pines (398 acres, includes 133 lake acres), Two Lakes Oak-Pine Forest (112 acres) and Dunn Lake (954 acres). Use these four sites as an ecological reference for adaptive old-growth management activities elsewhere in the mixed forest management area.

Resource Management Prescriptions

- Passively manage the Dunn Lake site as a reserve for northern mesic forest, northern wet forest and alder thicket, as an aquatic reserve and wetland protection area, and as an ecological reference area. Opportunities will be provided for research and education on the highest quality native northern mesic forest. Management is only authorized for 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 the state natural area's management objectives.

Recreation Management

- There is limited public access to the Dunn Lake property. It is best suited for remote recreation like hunting, fishing, hiking and trapping. No additional recreation facilities are planned or authorized.

Approved by NRB
October 2013

MARY LAKE SNA

PROPERTY DESCRIPTION

Mary Lake State Natural Area is a 44-acre property located in the township of Winchester in Vilas County (See Map 10). The landownership directly adjacent is primarily small private parcels. Past management includes the passive management of native species, 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.

- Roadside easement area and utility corridor may be managed sporadically by township and utility.
- Ditches may be plugged with woody materials during dry ditch periods to restrict flow of different water into Mary Lake.

Adjacent land uses include timber production, forestland recreation and lake recreation. The primary management is occasional inspection to search for invasive species.

Landscape Classification

The Mary Lake SNA falls into the North Central Forest Ecological Landscape. This ecological landscape encompasses 9,543 square miles (6,107,516 acres) in size, representing 17.1% of the total land area of the state. Forests cover approximately 75% of this Ecological Landscape. The mesic northern hardwood forest is dominant, made up of sugar maple, basswood, and red maple, with some stands containing scattered hemlock, yellow birch, and/or white pine pockets. The aspen-birch forest type group is also abundant, followed by spruce-fir. Forested and non-forested wetland communities are common and widespread. These include Northern Wet-mesic Forest (dominated by either northern white cedar or black ash), Northern Wet Forest (acid conifer swamps dominated by black spruce and/or tamarack), non-forested acid peatlands (bogs, ens, and muskegs), alder thicket, sedge meadow, and marshes (including wild rice marshes) are widespread in the North Central Forest.

Geology, Soils and Topography

Landforms in the North Central Forest are characterized by end and ground moraines with some pitted outwash and bedrock-controlled areas. Kettle depressions and steep ridges are found in the northern portion of the Ecological Landscape. Drumlins are important landforms in some parts of the North Central Forest. Soils consist of sandy loams, sands, and silts. Organic soils, peats and mucks, are common in poorly drained lowlands.

Lakes, Streams, and Wetlands

The 3-acre Mary Lake is one of very few known meromictic lakes in Wisconsin. Meromixis, the permanent thermal stratification of the water, results from the lake having an extremely small surface area in comparison to its depth. Mary Lake has a small 3-acre surface area but is disproportionately very deep - 67 feet. Due to the extreme relative depth in relation to surface area, watershed soils, and its protection from surrounding uplands, Mary Lake never "turns over" and circulates as the water temperature changes in the spring and fall as is typical of most other Wisconsin lakes. Instead, the lake stays stratified creating unusual chemical and biological layers. Internationally known to limnologists, extensive research has been conducted on the physical, biological, and chemical properties of the lake since the 1920s. Mary Lake is second in a chain of five interconnected lakes and is primarily fed by land runoff and inflow from a small stream that connects Mary Lake to nearby Lake Rose.

Current Cover Types and Natural Communities

Mary Lake is nestled in a small basin and surrounded by dense forest, which helps shelter the lake from wind action. The surrounding forest is primarily second-growth northern hardwood forest, swamp hardwoods, and swamp conifers (See Map 11). Dominant species include sugar maple, hemlock, and a mix of northern hardwoods. There are two rare natural communities or habitats present at the site: Northern Mesic Forest – old-growth and Lake - Meromictic. The current cover types for this parcel are 72% upland forest, 9% lowland forest and 19% open wetlands.

| Table 6. Acres of Cover Type on the Mary Lake SNA. | | |
|---|--------------|------------|
| Cover Type | Acres | % |
| Forested Types | | |
| Hemlock | 23 | 41 |
| Northern Hardwood | 16 | 29 |
| Balsam Fir | 1 | 2 |
| Swamp Hardwood | 3 | 5 |
| White Cedar | 2 | 4 |
| Total | 44 | 81 |
| Non-forested Types | 11 | 19 |
| Property Total | 56 | 100 |

Source: WDNR Forest Recon Database

Recreation Facilities

Primary public uses on this very small parcel include recreation such as hiking, nature appreciation, education, hunting, fishing and trapping. The former residence and outbuildings are scheduled to be razed during the spring/summer of 2013. There is an existing gated road that leads to the home site.

Historical/Archeological

There are no known cultural or archeological features located within Mary Lake SNA.

Administrative and Other Facilities

There are two public, town-owned roads of 1/4 mile each located within the property.

Approved by NRB
October 2013

Mary Lake Block – Management and Use

This 44 acre parcel is located in Winchester Township in far northern Vilas County. It contains two small but very deep lakes that are important for limnology research.

Special Designation

This area is already designated as the Mary Lake State Natural Area.

Land Management Classification

The Mary Lake Block would be placed in the NHAL Master Plan Land Management Classification Area 9 – Hemlock Hardwood Native Community Management Area.

Long-term Management Objectives (100 years)

- Maintain multiple sites across the NHAL landscape that support old-growth hemlock hardwood communities. These sites support very old trees, complex old growth forest dynamics and provide habitat for those species that do best in these ecological conditions.
- Use these sites as ecological reference areas and also for research, education, and interpretation.
- Provide old-growth wildlife viewing opportunities and sites where people can experience the inspirational aesthetic and philosophical values associated with an old-growth hemlock forest.

Short-term Management Objectives (50 years)

- Increase the age diversity, composition, and the patch size of stands within the forested area, emphasizing hemlock, white pine, sugar maple, yellow birch and basswood.
- Increase the extent of white pine.
- Establish and maintain large amounts of coarse woody debris, numerous standing dead snags, and an age diversity of trees.
- Maintain six passively managed ecological reference sites; Catherine Lake (867 acres, includes lake and private acres), part of North Bass Lake West (213 acres), part of Sweeney Lake (60 acres), Tomahawk Lake Hemlocks (226 acres), Van Vliet Hemlocks (433 acres) and Mary Lake (44 acres).
- Maintain small areas of red oak, white birch, and aspen in the actively managed zones.

Resource Management Prescriptions

- The Mary Lake site would be passively managed as an ecological reference site. Management is only authorized for 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 the state natural area's management objectives

Recreation Management

- This block is best suited to passive remote recreation like hunting, hiking, fishing, and trapping.
- Both lakes will be designated "non-motor" for boats.
- Trail access to the lakes through the former home site would be allowed. Roadside access is also available from Adelaide Road.
- No additional recreation facilities are planned or authorized.

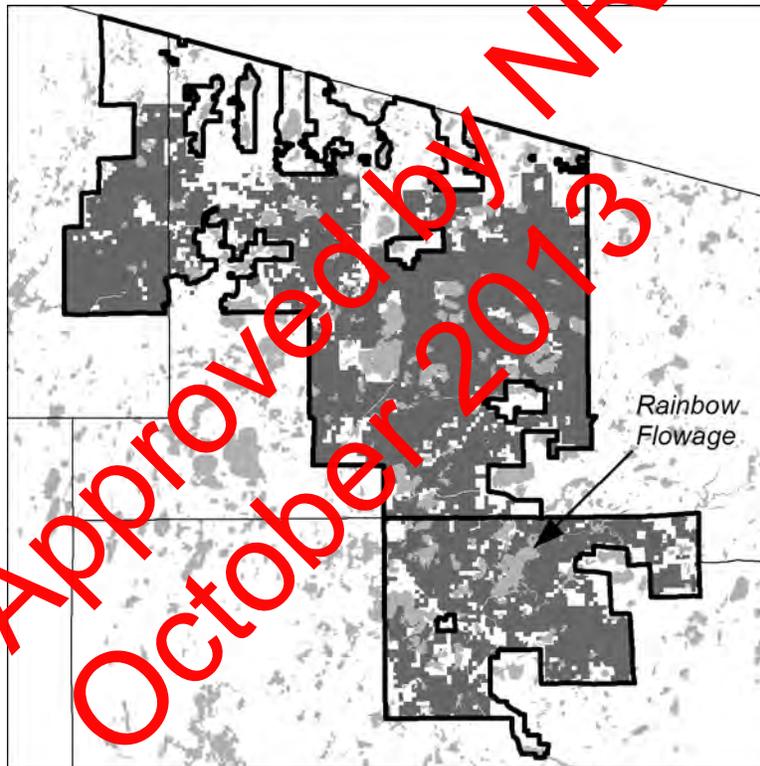
Approved by NRB
October 2013

RAINBOW FLOWAGE CAMPING Proposals

The Rainbow Flowage section on the NHAL does not currently offer any camping opportunities. This amendment authorizes a mix of camping opportunities to accommodate varied users, including groups, canoeists, and longer term stays.

Camping on the Rainbow Flowage area of the NHAL State Forest is authorized as follows:

- Develop three water-access group sites accommodating up to 15 people each would be made available as “remote-reservable” and would require fee payment at the group camp rates. Stays would be limited to ten days.
- Develop 10 water-access sites similar to the canoe camping program on the NHAL. Camping would be limited to one camping party and for only one night.
- A traditional drive-to group camp is authorized when a suitable site can be found. This camp would accommodate as many as 60 people in three sites.



RANGE OF MANAGEMENT ALTERNATIVES CONSIDERED

Van Vliet Hemlocks

Agency intent at the time of purchase was to make this a state natural area. There is a limited range of management alternatives for this area based on that intent and the ecological conditions presented there. Access could be increased or decreased and the current level seems sustainable, with some trail work.

Ontonagon Block

Research interest in this block limits access and some options for management. Current information does not reveal attributes that would lead to state natural area designation. Further inventory may support parts being placed in native community management though this management remains an option with the forest production classification.

Harris Lake Block

The larger area has been actively managed and current inventory does not suggest it is a good fit for native community management.

The smaller Nell Lake block could be considered for native community management or to be passively managed within the forest production classification. Preliminary inventory suggests it contains attributes that would support designation as a state natural area. The limited access and small lake size do not support highly developed boat access to the lake. There is private ownership on the far west end of the lake so Wild or Wilderness Lake designation is not possible.

Presque Isle Block

This relatively small parcel offers few alternatives. Given the current conditions, native community management would not be indicated nor would any special designation as a state natural area. Community interest in recreational development on the property is compatible with the forest type and the management described. Boat landing development on Stateline Lake is described as a "low priority".

Mary Lake Block and Dunn Lake Block

These two sites are already designated state natural areas with a limited range of management alternatives. The preferred alternatives reflect the management described in the state natural area management plan.

Papoose Lake Block

This parcel has a long history of active management. It lacks attributes that would support native community management or state natural area designation. There is strong public interest in recreational development on this property that is compatible with the forest types and management described.

Rainbow Flowage Camping Alternatives Considered

The Rainbow Flowage is fully included within the NHAL State Forest and was acquired about the time the Master Plan was being completed. There is currently no camping allowed on the state owned land on the Rainbow Flowage. A full range of options exist from continuing with no camping to developing the full spectrum of camping from traditional campsites to group sites to a variety of water-based sites. There are private campgrounds on the flowage that will accommodate the niche for traditional camping.

The region lacks group camping opportunities and this site seems better suited to a group camp than the relatively small Buffalo Lake, a few miles away.

Water-access sites are described as two alternatives that somewhat mesh with the water-accessed camping on the NHAL State Forest but add the dimension of accommodating larger groups on reserved sites so that they are able to plan and know where they will stay. This management is borrowed from the Turtle-Flambeau Flowage. An alternative to that would be to develop pairs of sites that are considered "remote reservable" and could be reserved as necessary to match group size. In addition to that opportunity the more typical NHAL-style "canoe campsites" will accommodate through-travelers on the Wisconsin River as well as one-night-only boat access campers.