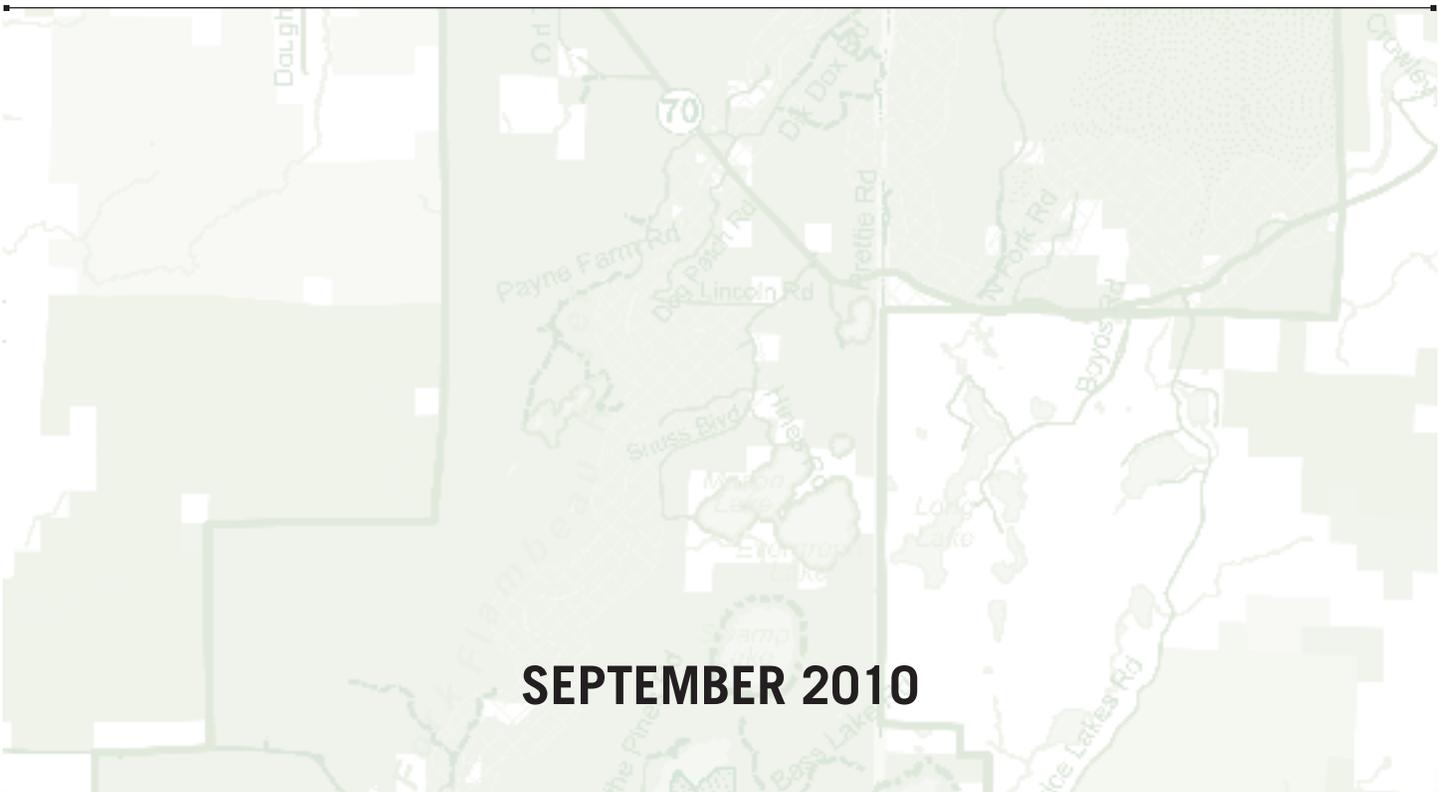




# FLAMBEAU RIVER STATE FOREST



SEPTEMBER 2010



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SEPTEMBER 2010



## ACKNOWLEDGEMENTS

This plan has been developed through a team effort by many individuals from the Department of Natural Resources. Through their hard work and expertise, these people have developed a plan that will guide the Flambeau River State Forest into the Future.

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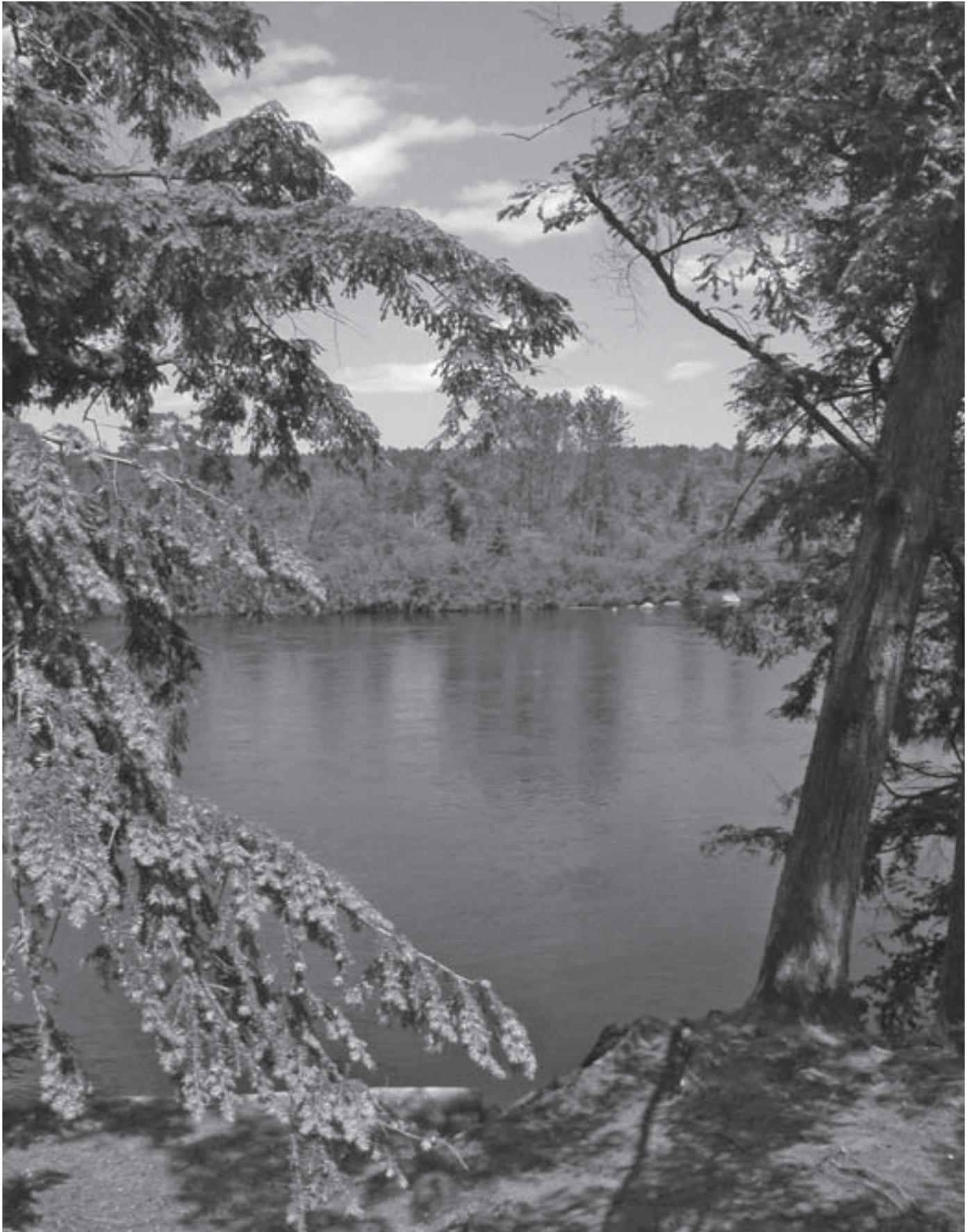
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# INTRODUCTION AND PLAN OVERVIEW

The Flambeau River State Forest (FRSF) is located in north central Wisconsin in Sawyer, Price, Rusk, Ashland, and Iron Counties. It surrounds portions of the North and South Forks of the Flambeau River, and its headquarters is located in the Town of Winter. With just over 90,000 acres, the forest is one of the largest public lands in the region. Extensive forests, wetlands, a high percentage of public lands, including portions of the Chequamegon-Nicolet National Forest, county forests, and other state lands are characteristic of this portion of the state. Large tracts of industrial forests are also common in the counties surrounding the forest. The Flambeau River State Forest provides a remote forested experience, with low road densities locally and regionally.

The FRSF supports a diversity of cover and community types, including large acreages of northern hardwoods and remnant stands of old-growth hemlock. Forest production management areas provide for sustainable timber production, while native community management areas and State Natural Areas protect important ecological communities and habitat for rare, threatened, and endangered species.

Land management on the forest utilizes a range of sustainable practices, from sustainable forest management to ecological restoration. The Flambeau River State Forest harvests approximately 2,200 acres annually, yielding an average of 22,000 cd. eq./year.

The forest is perhaps best characterized by the 75 miles of the North and South Forks of the Flambeau River that meander through the property. The forest is a popular destination for canoeists and kayakers who come to enjoy the rapids, camping, and remote forested nature of the Flambeau River. Hunting and fishing are also popular recreational activities, with a long tradition of hunting camps for large and small game. The motorized trails for ATVs and snowmobiles on the property connect to large regional trail systems, providing many additional trail miles for recreationists.

## PURPOSE OF THE MASTER PLAN

The Flambeau River State Forest Master Plan outlines how the property will be managed, used and developed, and the

benefits it will provide. It defines the forest management practices, recreational uses, other land management activities, and additional aspects of the property's future use and development. The revised plan reflects changing ecological, economic, and social conditions, and current management principles for resource and recreation management in the context of the larger landscape in which the forest is located, as required by Wisconsin State Statute 28.04. The master plan will receive a formal review approximately every 15 years and will be updated by plan amendments and variances as necessary through a formal process that includes public involvement.

Benefits of the Flambeau River State Forest Master Plan:

- Provides a vision and framework for the use, development, management and acquisition of the forest well into the future with an emphasis on the next 15 years.
- Identifies land management areas and plans for their future management.
- Describes general management objectives and specific management prescriptions for each area.
- Makes recommendations for forest production, recreation, and habitat conservation to meet current and future needs.
- Provides for continuing public involvement during plan implementation.

## OVERVIEW OF THE PLANNING PROCESS

There are several major phases in the master planning process as well as opportunity for public input and participation. These phases include completing the Regional and Property Analysis, establishing the property vision and goals, considering management alternatives, and finally creating a plan and an environmental analysis. The planning process is guided by State Statute 28.04 and Wisconsin Administrative code NR 44.

The development of the Flambeau River State Forest Master Plan has also been guided by a commitment to sustainable forestry. While individual definitions may vary slightly, there is general agreement that sustainable forestry focuses on meeting the ecological, environmental, economic, recreational and social needs of current generations while protecting the

forest's ability to fill the same role for future generations. Additionally, the previous property plan and extensive ecological, economic, and social assessments provided a data foundation for the development of this plan.

### **PUBLIC PARTICIPATION**

Public involvement has been an integral part of the planning process, beginning with public open house meetings and surveys to identify important planning issues and views on the forest's future direction. To create a shared vision for the future of the Flambeau River State Forest, the planning process relied on a solid foundation of public participation. In September of 2008, a Public Participation Plan was adopted, outlining the process, procedures, and tools used throughout the planning process to encourage public awareness, interaction, and input. The Department of Natural Resources also worked actively with local towns, tribes, non-governmental organizations, citizens, and businesses to develop the master plan. Public meetings were held in September of 2008, June 2009, and April 2010, and public comment forms seeking input on a range of resource and recreation management considerations were mailed and available on-line for each of those meetings. Generally, public comments showed support for the future use and development prescribed in the master plan.

### **ORGANIZATION AND CONTENT OF THIS DOCUMENT**

The master plan is presented in three chapters:

- |               |  |
|---------------|--|
| Chapter One   | Overview of the forest, the purpose of the master plan, and a planning process overview. |
| Chapter Two   | Use and development of the property.   |
| Chapter Three | Background information on the region and the property.                                   |

### **NEED TO REVISE THE FLAMBEAU RIVER STATE FOREST MASTER PLAN**

The last master plan for the Flambeau River State Forest was approved in 1980. The Department determined the need to revise the plan in light of changing ecological, economic, and social conditions, to incorporate new information learned since that time and to consider management in context of the larger landscape in which the forest is located as required by Wisconsin State Statute 28.04. This plan will receive a formal, rigorous review approximately every 15 years. When necessary, the plan may also be updated by plan amendments and variances through a formal process that includes public involvement.

## **SUMMARY OF THE MASTER PLAN**

### **LAND MANAGEMENT**

The Flambeau River State Forest encompasses over 91,000 acres. After removing private in-holdings, open water, and right-of-ways, the total is approximately 88,000 acres, of which approximately 80,000 are forested. The forest (88,000 acres) has been divided into 21 land management areas, with forest production areas comprising approximately 70% of the area. Native community management areas, which include the majority of the passively managed acres, equate to 7% of the forest. About 4% of the forest is classified as habitat management area. Scenic resources management areas, of which there are two, take up the second greatest area of the forest at roughly 18%, as they border the Flambeau River and Upper Flambeau River. The remaining acreage, only about 1% of the forest, includes both a wild resources management area and a recreation management area.

Of the 88,000 acres, approximately 63,000 acres are upland (71%) and 25,000 are lowland (21%). Roughly 6,800 acres have been designated for passive management, of which about 2,500 are upland. This equates to approximately 4% of the upland acreage on the forest designated for passive management. In terms of forested acreage, approximately 6,000 of the passively managed acres are forested (both upland and lowland forests), which equates to about 7% of the forested acreage on the property designated for passive management.

### **Cover Type Changes and Forest Production**

Over 61,000 acres are managed for forest production, representing approximately 70% of the current FRSF acreage. Overall, there will be no significant changes in forest cover types, but over time, the forest will become more structurally diverse with snags, den trees, coarse woody debris, and large-diameter canopy trees. Approximately 35,000 acres (40%) of the forest is classified as northern hardwoods, which will continue to be the dominant cover type. Forest production levels will increase; approximately 3,000 acres/year (about 3% of the forest land base) with slight annual variations. Forest production management techniques include even-aged management (39%) and uneven-aged management (61%) (thinnings are part of even-aged management regime).

### **Native Community Management**

Approximately 6,100 acres (7%) will be in native community management. These areas include many wetlands and important community types on the forest. Management to develop and retain old growth forests and forests with old growth characteristics will be an integral part in some of these areas, with an emphasis on hemlock-hardwoods, red and white pine, and yellow birch.

**Scenic River Corridor**

Approximately 15,000 acres along both sides of the Flambeau River and the Upper North Fork will be designated as scenic management areas. These areas retain most of the original quarter mile limited management buffer and include three areas that will be designated as native community management areas.

**State Natural Areas**

Within the native community management areas and the wild resources management area, there are two existing and six new State Natural Areas totaling just over 3,000 acres. Sites were chosen that contribute to critical habitat for rare species, provide ecological reference areas, or which contain significant geological or archaeological features.

**Wildlife Habitat**

Rare, Threatened, and Endangered Species will continue to be protected by improving and maintaining habitat. Forest management practices will continue to utilize and incorporate considerations for threatened and endangered species. Large and small game populations will also be maintained through forest and habitat management, providing an array of forest types and age classes. A 3,800 acre habitat management area near the southern end of the property will emphasize early successional species, such as aspen, for Ruffed Grouse habitat.

**Wetlands and Aquatic Resources**

Wetlands, forested and non-forested, account for approximately 29% of the forest, and will continue to be protected. They provide habitat for a diverse range of plants and wildlife, and are known to harbor many rare species. Wetlands are also critical in maintaining water quality for lakes, rivers, and streams. The diverse array of aquatic resources on the forest includes 75 miles of the North and South Forks of the Flambeau River, many streams, ephemeral ponds, and undeveloped lakes, most within an extensive forest matrix. These important resources will be maintained and protected.

**Research**

Research on the forest will continue to provide benefits for forest management and ecological values. There are two long-term research projects underway (one by the UW Madison, the other by the Department) studying the use of forest management to accelerate characteristics associated with old growth northern hardwood forests. These areas are represented in an overlay zone; the UW Madison project is an 800 acre project located in Area 14: Flambeau Forks Interior Forest Native Community Management Area, and the WDNR project is 500 acres and is located in Area 1: Exeland Plains Hardwoods and Area 5: Jump River Hardwoods.



## RECREATION

### Camping

A percentage of campsites at Connors Lake Campground will be upgraded with modern amenities and three new reservable, walk-in-only campsites with lake access will be developed. Lake of the Pines Campground will remain “rustic.” Both locations will receive general site improvements and code upgrades to accommodate a wider range of camping interests. A portion of campsites will be added to the statewide reservation system. A small campground (5-10 campsites) will be developed near the Forest Headquarters to provide a convenient day-trip opportunity and to disperse river users. A new shower building will be provided in a central location on the property to accommodate campers and other recreationists. Special permit camping will continue on the forest. A reservable outdoor group camp will be developed. Four hike-in primitive back pack campsites will be developed.

### River Recreation

The Flambeau River corridor will be designated as a scenic management area and continue to provide a remote, “wilderness-like” experience. River campsites and landings will be renovated or redeveloped as needed. Additional camping opportunities will include individual primitive river campsites, small group campsites, and a small rustic campground near the forest headquarters. An ADA accessible cabin will be developed to provide reservable camping opportunities with road or watercraft access.

### Day Use Areas

Day use areas on the forest will be increased. Slough Gundy, a scenic and frequently visited location on the forest, will be developed and improved for day use. Connors Lake Picnic area, a popular day use location will receive some new amenities. One over-used river camp, Hervas Landing, will be restored and re-designated as a day use/picnic area. A day use/picnic area will be added to site development of the new forest headquarters.

### Landings

Most landings will remain unchanged, however, some will be improved to meet users’ needs, e.g. handicap accessibility, ramp, fishing pier, boat washing station, or signage. Some landings will be redeveloped to protect shoreline or to improve the approach to water. Several landings will be improved to provide ADA accessibility. Information facilities will be installed to provide maps and details about water related conservation issues or recreational use.

### Motorized Recreation

The Flambeau snowmobile/ATV trail will be extended to the south and east forest boundaries providing connections to trail systems in Price and Rusk counties as opportunity allows and sustainability standards are met. Snowmobile/ATV trail facilities will be upgraded to accommodate users’ needs and enhance sustainability. An auto tour route is planned to interpret forest resources and management, and educate visitors about public benefits and opportunities.



**Non-Motorized Recreation**

River recreation – canoeing, kayaking, fishing, camping and sightseeing – will be maintained and enhanced along on the famous Flambeau River canoe trail. A river hiking /backpack trail will be developed to parallel the river and run the length of the forest. Hunter-walking trails in the forest will increase on the forest. Campground nature trails will be rejuvenated. The Oxbo area will be redeveloped to provide non-motorized summer and winter recreational opportunities. A new interpretive trail is planned using an existing trail to the Bass Lake Wilderness area. An accessible trail will be developed at the forest headquarters.

**Hunting, Fishing, and Trapping**

The state forest will continue to offer abundant opportunities for small and big game hunting and trapping. The diverse landscape of different forest types, lakes and wetlands found on the property will continue to provide important habitats for many game species. Hunter-walking trails will increase. Logging roads and non-designated trails will continue to provide hunting opportunities (see access plan). Non-motorized areas where one can seek a more remote, solitary walk-in hunting experience will remain at approximately current levels.

Access to water resources will be maintained at lakes and river corridors throughout the forest to provide opportunities for water recreation, boating, and fishing. Piers will be developed in some locations to enhance opportunities for shoreline fishing.

**Education and Interpretation**

A range of educational activities will be initiated to enhance visitor experience and alert them to the benefits and opportunities provided by Flambeau River State Forest. Preserving the history and traditions of the forest through educational activity is a key objective. Educational activities will enhance the forest's recreational niche by encouraging responsible behavior and use of forest resources. Information facilities will be installed or upgraded at key public contact points, landings and trailheads. A self-guided interpretive auto tour is planned.

**BOUNDARY EXPANSION**

The master plan calls for an expansion to the project boundary which will provide the basis for land acquisition from willing sellers. It includes six expansion opportunities totaling approximately 49,000 acres. Expansion focuses on protection of water resources and providing contiguous blocks of forested land for a wide range of opportunities, including protection of high conservation value forests and unique habitats and providing public access for recreation. The areas selected will provide

greater ecological, economic, and social values for the property and region.

**THE ENVIRONMENTAL ANALYSIS**

The Environmental Analysis (EA) analyzes the potential impacts of actions recommended in the master plan, ranging from land acquisition and facility development to forest management and operation. The EA for this plan concludes that the implementation of the master plan provides positive recreational, ecological, social, and economic benefits to the region with minimal adverse impacts.

**HOW THE STATUTORY AND OTHER PURPOSES AND BENEFITS OF THE STATE FOREST WILL BE REALIZED THROUGH THE PLAN****PURPOSE OF THE STATE FOREST**

State forests are defined by Wisconsin Statutes 28. The purposes and benefits of state forests are outlined in the following language of 28.04 (2):

- (a) The Department shall manage the state forests to benefit the present and future generations of residents of this state, recognizing that the state forests contribute to local and statewide economies and to a healthy natural environment. The Department shall assure the practice of sustainable forestry and use it to assure that state forests can provide a full range of benefits for present and future generations. The Department shall also assure that the management of state forests is consistent with the ecological capability of the state forest land and with the long-term maintenance of sustainable forest communities and ecosystems. These benefits include soil protection, public hunting, protection of water quality, production of recurring forest products, outdoor recreation, native biological diversity, aquatic and terrestrial wildlife, and aesthetics. The range of benefits provided by the Department in each state forest shall reflect its unique character and position in the regional landscape.
- (b) In managing the state forests, the Department shall recognize that not all benefits under par. (a) can or should be provided in every area of a state forest.
- (c) In managing the state forests, the Department shall recognize that management may consist of both active and passive techniques.

**LOCAL AND STATEWIDE ECONOMIES**

Under the plan, the forest would increase its contribution to the state and local economies through forest products and tourism. Annual harvest levels will increase slightly in the next years based on current inventory data. Providing a wide range

of diverse recreational opportunities and settings, maintaining scenic forest resources, and providing wildlife and fisheries habitat will ensure the forest's role as a destination in the region.

### **A HEALTHY NATURAL ENVIRONMENT AND THE LONG-TERM MAINTENANCE OF SUSTAINABLE FOREST COMMUNITIES AND ECOSYSTEMS**

Due to the size and variety of resources located on the Flambeau River State Forest, all of the prescribed benefits of a state forest may be realized on the property. By managing for these benefits, the goals of achieving a healthy natural environment and the long-term maintenance of sustainable forest communities and ecosystems will be realized.

#### **FULL RANGE OF BENEFITS**

##### **Protection of Soils and Water Quality**

Soils and water quality will continue to be protected by maintaining the majority of the forest in an undeveloped condition. Erosion control practices, such as the Best Management Practices (BMPs) for water quality, will be followed when conducting forest and other management activities. Expansion of the forest boundary provides opportunities to expand protection to new areas.

##### **Production of Recurring Forest Products**

Under the master plan, 90% of the potentially productive lands will be under active sustainable management producing forest products.

##### *Outdoor Recreation*

The Flambeau River State Forest Master Plan will continue to provide the existing recreational opportunities, while providing many improvements and upgrades throughout the property.

##### *Native Biological Diversity*

Native biological diversity will be maintained through enhanced forest structure and species composition in some areas. Aquatic resources and other unique habitats will be protected. Endangered and threatened species will continue to be protected.

##### *Terrestrial Wildlife*

The forest and wildlife management prescriptions in this plan have been developed to ensure that habitat and ecosystems for a wide range of terrestrial and aquatic wildlife will be sustained and improved.

##### *Aesthetics*

Over time, forest health and scenic qualities will be enhanced as longer-lived trees such as northern hardwoods, red and white pine, and yellow birch become more common through forest management. Hemlock will be maintained as much as possible for diversity and scenic qualities. The scenic quality of all shoreline, trails and forest roads will be maintained and enhanced through the application of aesthetic management techniques.

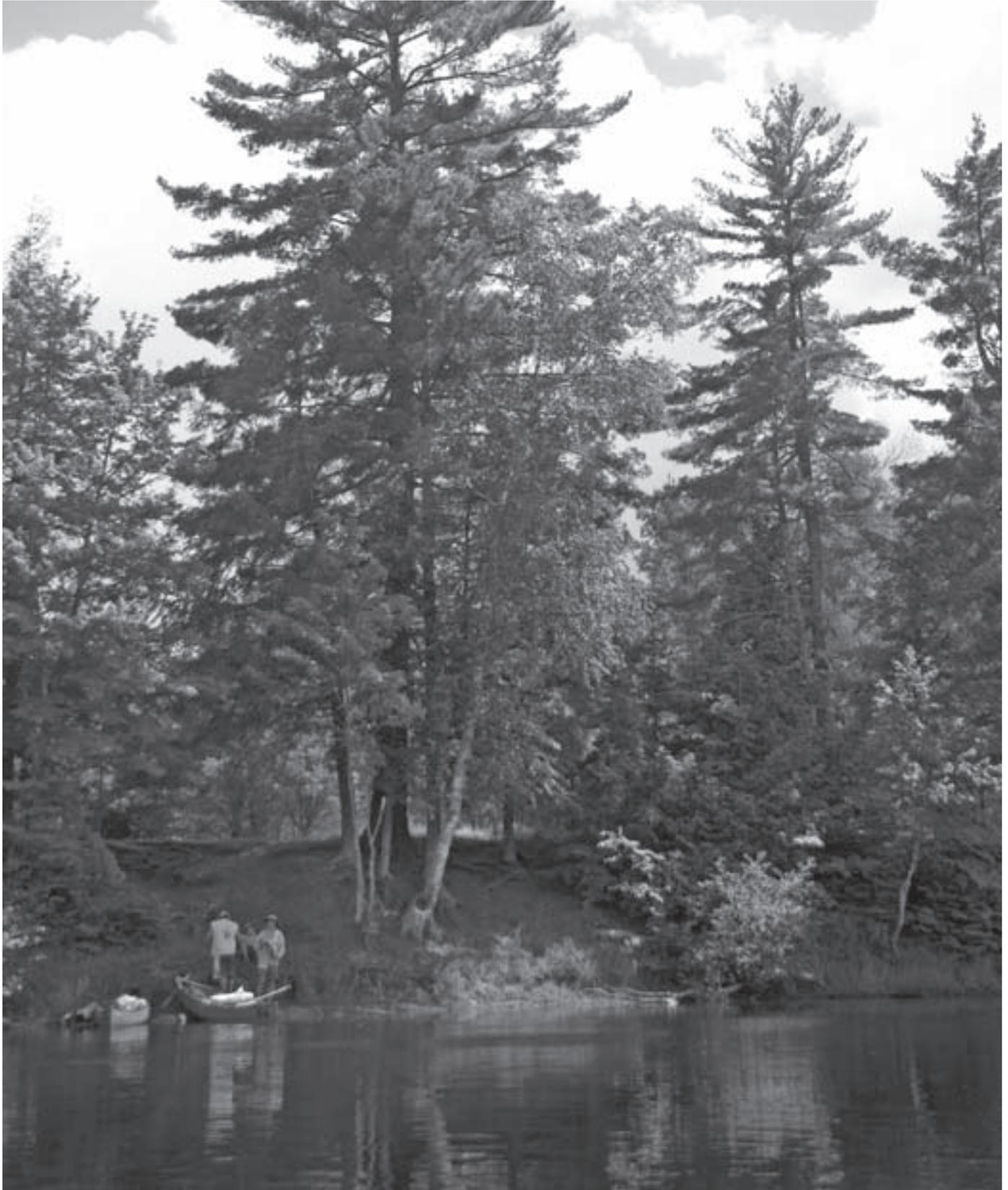
**This is your plan.** The Flambeau River State Forest master plan addresses people's desires for the future. Wisconsinites want their forest resources sustained for future generations. At the same time, they expect a full range of environmental, social, and ecological benefits today and in the future. This plan attempts to achieve that balance in a scientifically credible and sustainable way. It was developed with countless hours of public input and several rigorous scientific and technical reviews. Many hands were involved in shaping it.

**This is a visionary plan.** The Flambeau River State Forest master plan captures an idealized view of the state forest's long-term future. This points general direction for short-term actions. The diversity of the forest structure is enhanced over time, providing for a broad range of social and ecological values important to Wisconsin citizens, including recreation. Diverse forest communities contribute to the range of wildlife habitats necessary for all native species, and contribute to broad biodiversity.

**This is a focused plan.** The plan calls for active and passive management across the landscape and over time to achieve its goals and objectives. It relies on integrated and adaptive management of the forest resources and focuses on the compatibility of forest uses over time.

**This is a flexible and adaptive plan.** The plan calls for adaptive management and monitoring the response of the forest to strategies outlined in the plan. The responses are evaluated against the objectives. The plan calls for continuous monitoring and regular public reviews and a major review every 15 years.

**This is a sustainable plan.** A sustainable forest requires flexibility and adaptability. This plan will assure sustainable forest products, continued recreation opportunities as well as a sustainable ecosystem and healthy watersheds.





## MANAGEMENT AND DEVELOPMENT



# MANAGEMENT AND DEVELOPMENT

## VISION STATEMENT

The Flambeau River State Forest is a healthy, dynamic forest that contributes to the diversity of natural communities in the region. The forest is managed for present and future generations to provide ecological, cultural, social and economic benefits within its capabilities. Emphasis is placed on the Flambeau River by protecting and enhancing the predominantly undeveloped shoreline and aquatic resources while providing recreational opportunities consistent with its scenic beauty and remote setting. The forest is managed in consultation with federal, tribal, local, and other governments; and with the people who care about the forest, including those that live, work, and recreate around it.

## PROPERTY GOALS

- Maintain and enhance the undeveloped, remote scenic beauty of the state forest, especially those areas visible from the river, trails, and public roadways.
- Maintain and enhance Flambeau River State Forest's historic tradition as a "river trail" including opportunities to access and experience wild and remote river travel.
- Maintain and enhance the aquatic resources of the forest, especially along shorelands of undeveloped lakes and the Flambeau River.
- Manage the property within the ecological capability of the land using principles of ecosystem management and sustainable forestry to provide a variety of renewable forest products and to protect and enhance important natural communities, habitats and recreational values.
- Collaborate in forest research and demonstration to advance sustainable land management practices regionally and statewide. Develop and demonstrate productive forest management practices that protect and enhance water quality, soils, wildlife habitat and natural communities.
- Provide a diversity of natural communities and wildlife habitats consistent with the forest's capabilities and prop-

erty goals, including diverse forest types and age classes, with an emphasis on communities that are unique to the Flambeau River State Forest.

- Protect and enhance habitat for endangered and threatened species, biological diversity and areas of geological, archeological, or cultural significance.
- Maintain forest health and protect it from unacceptable levels of degradation from invasive plants, animals, insects and diseases.
- Provide opportunities for hunting, fishing, trapping, and wildlife viewing.
- Provide opportunities for motorized and non-motorized outdoor recreational activities that are compatible and can be sustained without harm to the trail network and forest ecosystems.
- Provide an appropriate balance of ecological diversity, forest management, recreational use, and research considering the opportunities and goals for the property.
- In consultation with tribal governments, provide for the availability and enhancement of treaty resources.
- Provide opportunities for greater landscape-scale habitat protection and management, for the permanent protection of additional shoreline and water resources and other significant natural resources or features; and provide opportunities for additional recreational uses through land acquisitions and easements.

## GENERAL MANAGEMENT STRATEGY OF THE STATE FOREST

The Flambeau River State Forest is part of a complex ecosystem, with a mix of biotic communities that provide habitat for a diversity of plants and animals. Forests will be managed using sustainable forestry practices and a combination of both active and passive management to provide ecological, economic, and social benefits. The forest is mainly comprised of northern hardwood, aspen, swamp hardwood, lowland brush, and fir-spruce cover types. Although northern

## MANAGEMENT AND DEVELOPMENT

hardwood forest remains the most common forest cover type of the FRSF, the composition, structure, and patch sizes differ significantly from pre-settlement conditions. Forest management on the FRSF has focused on improving the yield and timber quality of northern hardwood sawlogs through conversion to uneven-aged management. Some of the lowland forested acreage, especially the swamp hardwood cover type, is currently being actively managed for timber production. Several historical factors influenced the structure and composition of the FRSF and surrounding landscape; these include unregulated logging during the state's "cutover" period and subsequent land clearing and wildfires, as well as the more recent 1977 windstorm event that greatly affected approximately one third of the total FRSF land area. Currently, this forested landscape is heavily dominated by sapling to pole-sized trees. Old growth successional stages of all forest types are rare and larger blocks of older forest with mature forest structure are uncommon.

Figure 2.1 shows the general cover types on the Flambeau River State Forest (Map 2.1, Appendix). For inventory purposes, forest stands are classified by their dominant cover type. This means that forest stands listed as aspen have 50% or more of their basal area in aspen trees. Most forest stands contain a mix of tree species. For example, an "aspen" area probably includes a mixture of northern hardwoods, red maple, and white birch. Therefore, two forest stands with the same dominant cover type may not have the same overall forest composition. The tables in each management area include grouped cover types and breakdown as follows. The Forested Wetlands cover type includes Balsam Fir, Cedar, Black Spruce, and Tamarack. The non-forested wetlands cover type includes tag alder and kegs. The non-forested uplands cover type includes upland brush and grasses.

Forest management on the property will maintain a diversity of forest cover types and age classes for forest health, aesthetic appeal, and wildlife habitat. This will be accomplished through different management opportunities. Age class structure will be increased in northern hardwoods by applying gap management and extended rotations. Where seed sources exist, yellow birch, basswood, ash, and other mid-tolerant species will be encouraged and promoted. Aspen will be maintained and increased in mixed stands. Hemlock inclusions, along with large red and white pine will be maintained to provide larger, older trees and structural attributes consistent with older forests.

Recreation management is also an important component of the Flambeau River State Forest and will be implemented in a way that provides safe and sustainable recreational access while protecting the ecology and unique features of the forest.

The wetlands, streams, and lakes on the FRSF help protect water quality and provide habitat for a variety of fish, birds, insects, plants, and other animals.

Endangered and threatened species and their habitats will be protected through integrated and adaptive management techniques.

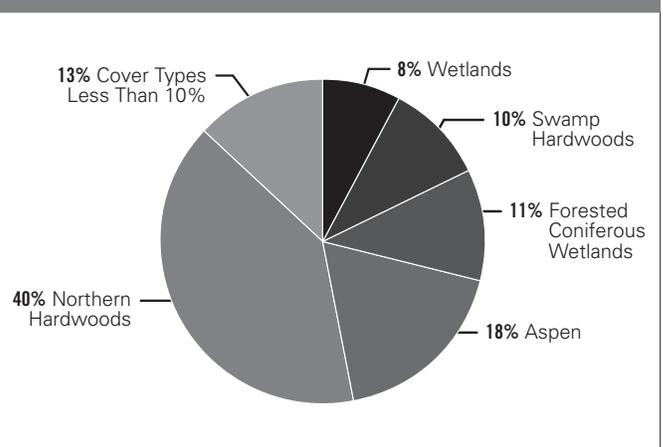
Aesthetics management is also an important objective in the plan, particularly along high use recreation areas including campgrounds, day use areas, lakes, and rivers. Aesthetics management will be implemented along the Flambeau River by promoting larger diameter, longer-lived species such as white pine.

### LAND MANAGEMENT AREAS

The Flambeau River State Forest has been divided into 21 land management areas: six Forest Production Management Areas, 10 Native Community Management Areas, one Habitat Management Area, two Scenic Management Areas, one Wild Resource Management Area, and one Recreation Management Area (Map 2.2, Appendix). Each management area describes a future desired condition that considers soils, topography, community type, and other factors which shape the objectives and management actions for each area.

Each management area has specific short-and long-term objectives that articulate the future desired condition based on the ecological capabilities. Because forests and landscapes change slowly, actions taken, or not taken, over the next 15 years may require 50-100 years to affect the forest as a whole. The long and short term objectives, as written, reflect the intent and ability to meet those objectives under ideal conditions. Biotic factors such as poor regeneration, lack of crop trees for some

**FIGURE 2.1 LAND COVER TYPES OF THE FLAMBEAU RIVER STATE FORESTS**



## MANAGEMENT AND DEVELOPMENT

**TABLE 2.1 LAND MANAGEMENT CLASSIFICATIONS AND AREAS**

Area #	Land Management Areas (% of forest)	Acres
<b>Forest Production Management Areas (70%)</b>		<b>61,794</b>
1	Exeland Plains Hardwoods	28,040
2	Wet-Mesic Hardwoods	12,462
3	River Sands Mixed Hardwoods <sup>a</sup>	8,768
4	Back Country Hardwoods	5,013
5	Jump River hardwoods	6,680
6	Big Block	831
<b>Native Community Management Areas (7%)</b>		<b>6,189</b>
7	Barnaby Rapids	283
8	North Fork Pines	87
9	Oxbo Pines	283
10	Hanson Lake Complex	336
11	Swamp Lake Forest	752
12	Bass Lake Forest and Muskeg	1,485
13	Hackett Creek Wetlands	1,289
14	Flambeau Forks Interior Forest	1,356
15	Lake of the Pines Conifer Hardwoods	53
16	Flambeau River Hardwood Forest	263
<b>Habitat Management Area (4%)</b>		<b>3,870</b>
17	Ruffed Grouse Habitat	3,870
<b>Scenic Resources Management Areas (18%)</b>		<b>15,466</b>
18	Flambeau River Scenic Area	14,388
19	Upper North Fork Flambeau River Scenic Area	1,078
<b>Wild Resources Management Area (1%)</b>		<b>733</b>
20	Wild and Wilderness Lakes	733
<b>Recreation Management Area (0%)</b>		<b>135</b>
21	Flambeau River Recreation Area and Forest Headquarters	135
<b>Overlay Zones* – 2 Zones</b>		<b>1,481</b>
<b>State Natural Areas* – 8 Areas</b>		<b>3,007</b>
<b>Total Acres**</b>		<b>88,187</b>

\* Overlay Zones and State Natural Areas do not contribute to total property acreage.

\*\* Total acres do not include private ownership or open water.

species, or major wind events may impact the ability to meet the stated objectives.

Each Land Management Area contains the following information:

- Overview and summary
- Description of the forest resource
- Current and projected land cover
- Soils and habitat types
- Short and long term management objectives
- Management prescriptions

### OVERLAY ZONES

In addition to these land management areas, there are two Overlay Zones: Scenic Lake Management and Zone Long-Term Research Areas. An overlay zone is a planning tool that allows for additional management prescriptions that can span multiple management areas. It is most often used when there is a particular resource that requires additional prescriptions to meet the objectives of the zone. The objectives and management prescriptions for overlay zones are in addition to the objectives and management prescriptions for the underlying management area.

### STATE NATURAL AREAS

Eight State Natural Areas (SNA) are designated on the FRSF totaling 3,007 acres. SNAs are similar to overlay zones in that they do not change the underlying management objectives or prescriptions for each land management area. Sites contribute to rare species habitat, provide ecological reference areas, or contain significant geological or archaeological features.



**FOREST PRODUCTION MANAGEMENT AREAS**



**FOREST PRODUCTION MANAGEMENT AREAS**

The general management objective of the forest production areas is the sustainable production of forest products. Forest production areas also meet a wide range of ecological, aesthetic, wildlife, and recreation objectives. The specific objectives for any given management area may vary depending on site capability, forest types, and societal needs. Desired associated benefits, desired future conditions, adjacent land uses, and local economic conditions all influence the objectives as well.

In addition, under limited or special circumstances, in areas of high recreation use or scenic value and where site conditions allow, management can promote the production of timber on extended rotations in a manner that promotes long-term visual appeal. Management activities may promote the development and maintenance of certain ecological attributes to protect and enhance unique habitats and biological diversity.

Generally, the Forest Management Prescriptions by Primary Forest Type describe the management techniques to achieve the desired future conditions specified in each forest production management area. Given the large size of forest produc-

**TABLE 2.2 FOREST PRODUCTION MANAGEMENT AREAS**

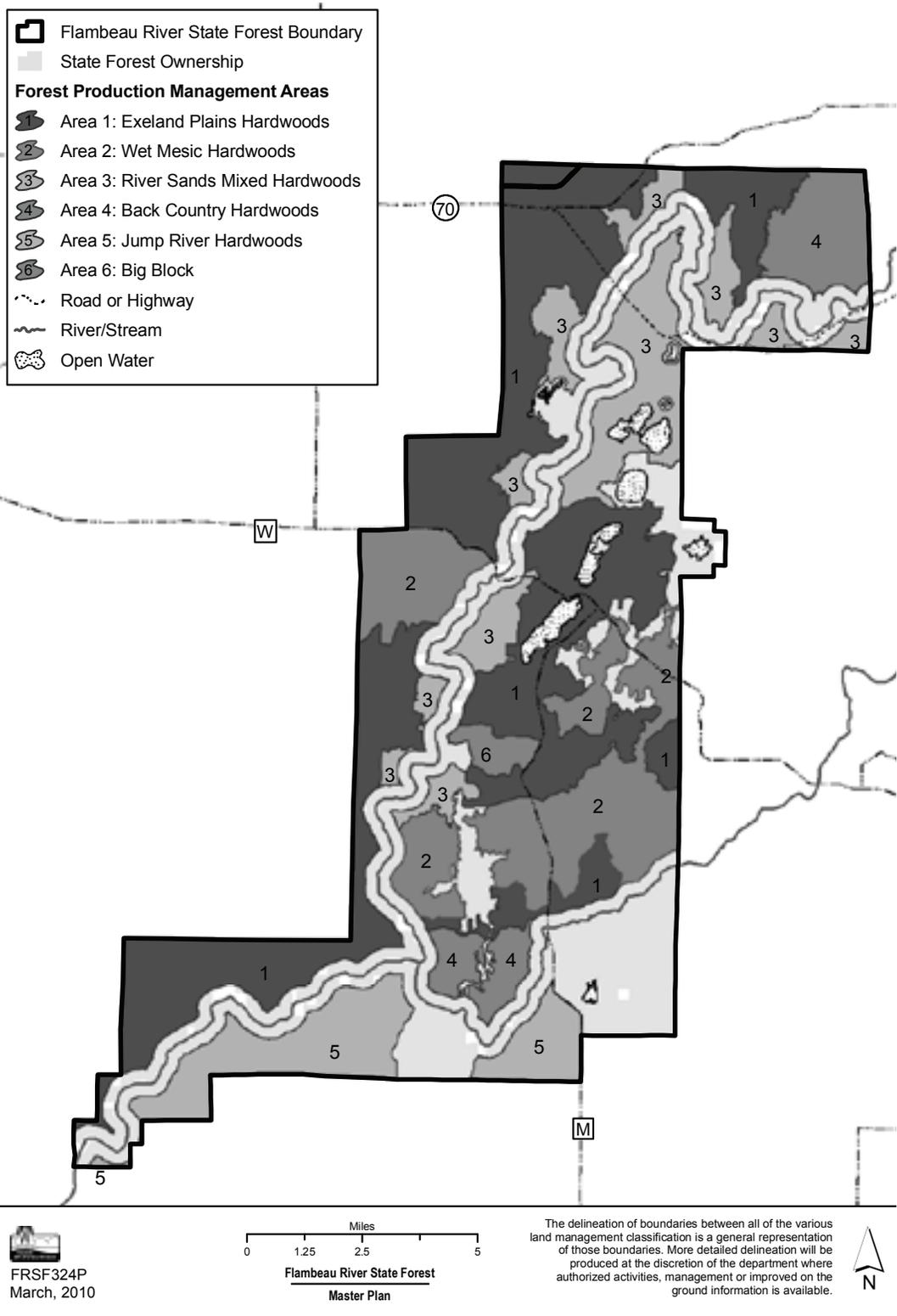
Area #	Forest Production Management Areas	Acres
1	Exeland Plains Hardwoods	28,040
2	Wet-Mesic Hardwoods	12,462
3	River Sands Mixed Hardwoods	8,768
4	Back Country Hardwoods	5,013
5	Jump River Hardwoods	6,680
6	Big Block	831
	<b>Total</b>	<b>61,794</b>

tion areas, a number of special circumstances occur that require a modification to the General Forest Management Prescriptions in order to maintain and enhance those unique features. Examples of unique features commonly located in forest production management areas include small acreages of High Conservation Value Forests (HCVF) (e.g. hemlock stands and wetland complexes), rustic campgrounds, and unique scenic geological and cultural features.



**FOREST PRODUCTION MANAGEMENT AREAS**

**MAP 2.3 FOREST PRODUCTION MANAGEMENT AREAS**





## AREA 1: EXELAND PLAINS HARDWOODS

### Overview and Summary of the Area

This area is approximately 28,040 acres and covers almost  $\frac{1}{4}$  of the entire forest. High or perched water tables and shallow rooting depth make soils in this area very susceptible to wind throw. The effects of several large wind events can be seen throughout this area, from the blowdown of 1977 to more recent events. Many small pockets of old-growth hemlock are scattered throughout the area, although much of the area is covered by northern hardwoods. The area also contains a Long-Term Research Overlay Zone, with sites located in the central and southwestern portions of the forest.

### Description of the Forest Resource

Approximately 44% of this area is of moderate quality northern hardwoods in the pole timber and small sawlog size classes. Scattered throughout this area are remnant pockets and individual large-diameter trees that have withstood major wind events and vary in quality. Wind events have created numerous, and in some cases large, canopy gaps with marginal regeneration success. Aspen covers about 20% of this area in varying age classes, although most are 30 years old. Northern hardwoods and balsam fir are the dominant secondary type within aspen stands. Unforested wetlands are poorly represented here, covering only approximately 8% of the area. Just under half of the forested wetlands contain swamp conifer, with only 7% dominated by white cedar. Swamp hardwoods cover approximately 8% of this area with limited regeneration. Only about 3 % of the area is identified as predominately hemlock/ hemlock hardwood forest. These stands are relatively small and are unique, scattered passively-managed inclusions. The remaining 6% of the area is made up of a small percentage of white spruce, red maple, oak, and red and white pine. The white pine is primarily large-diameter trees  $\geq 100$  years with little natural regeneration. Most of the red pine is in plantations with an average age of 55 years.

### Land Type Associations

The land type associations in this area are Flambeau silt capped Drumlins (212Xd02) and Exeland Plains (212Xd03). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. The majority of the forest falls under this land type association. The characteristic landform pattern of Flambeau silt capped Drumlins is rolling drumlins with swamps common, and soils are predominantly moderately well drained silt loam over acid sandy loam till.

### AREA 1 SUMMARY

- ▲ 28,040 acres
- ▲ Soils prone to windthrow
- ▲ Area covers approximately  $\frac{1}{4}$  of the forest
- ▲ Small groves of old-growth hemlock
- ▲ Hardwood regeneration limited

### AREA 1 LOCATOR MAP



### Soils

Sconsin, Butternut, and Chequamegon are the major soils in this area along with large areas of muck/organic soils. Forest stands on all soils in this management area are prone to wind damage due to restrictive layers limiting rooting development. The depth to a restrictive layer can be as little as 20 inches.

### Habitat Types

There are two primary habitat types within this area: AOCa (Sugar maple/Sweet cicely-Blue cohosh) and ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley).

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime with a rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages in this habitat.

ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley) has a mesic moisture regime with a medium nutrient regime. Trees



FOREST PRODUCTION MANAGEMENT AREAS  
**EXELAND PLAINS HARDWOODS**

AREA  
**1**





exhibiting good to excellent productive and competitive potential include sugar maple, basswood, white ash, yellow birch, and hemlock. Others demonstrating excellent productivity but limited competitive abilities include red maple, red oak, and white pine. Following disturbance, aspen and paper birch can demonstrate excellent productivity as pioneers. Herbaceous species characteristic of mesic, nutrient-rich sites occur sporadically on this habitat type. The shrub layer is moderately well developed in younger or early successional stands, but poorly represented in older stands.

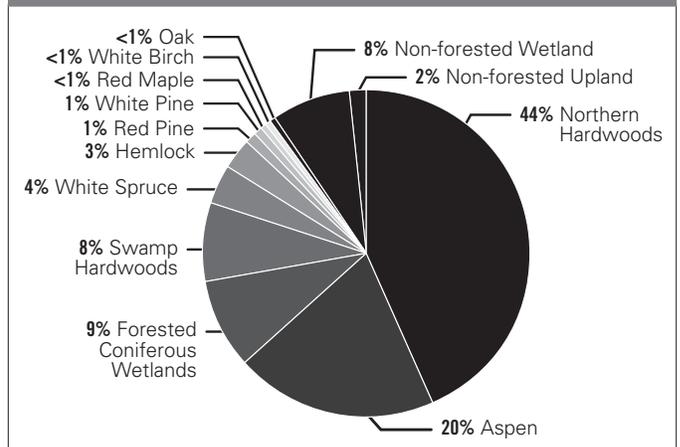
**Long Term Objectives**

Northern hardwoods will remain the dominant cover type. Existing stands will be maintained and enhanced to increase age diversity while maintaining a diversity of forest cover types for forest health, aesthetic appeal, and wildlife habitat. White pine, hemlock, and cedar components will be maintained for large-diameter trees and older forests. Wind events may change the proportion of mid-late successional species to early successional species.

**Short Term Management Objectives**

- Maintain acreage of northern hardwoods and enhance quality of sawlogs on appropriate sites.
- Maintain high quality red maple in northern hardwood stands to increase species diversity.
- Encourage and promote yellow birch, basswood, ash, and other mid-tolerant species where seed sources exist.
- Maintain a diversity of forest cover types and age classes for overall health of the forest, aesthetic appeal, and to provide wildlife habitat.
- Improve the establishment of natural regeneration where possible.
- Encourage understory development and diversity.
- Limit gap management on sites with poor regeneration.
- Maintain aspen in mixed stands.
- Maintain current levels of pine, tamarack, hemlock, cedar, balsam fir, and spruce.
- Evaluate wind damaged stands for adequate crop tree stocking levels.
- Provide research opportunities consistent with area management objectives.

**FIGURE 2.2 EXELAND PLAINS HARDWOODS CURRENT LAND COVER**



**TABLE 2.3 EXELAND PLAINS HARDWOODS CURRENT AND PREDICTED COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested Types</b>				
Northern Hardwoods	12,226	44%	12,338	44%
Aspen	5,541	20%	5,888	21%
Forested Coniferous Wetlands	2,474	9%	2,524	9%
Swamp Hardwoods	2,336	8%	1,963	7%
White Spruce	1,184	4%	1,122	4%
Hemlock	831	3%	841	3%
Red Pine	239	1%	280	1%
White Pine	166	1%	280	1%
Red Maple	140	<1%	0	<1%
White Birch	64	<1%	280	1%
Oak	13	<1%	0	<1%
<b>Non-forested Types</b>				
Wetlands	2,338	8%	2,243	8%
Upland	488	2%	280	1%
<b>Total</b>	<b>28,040</b>	<b>100%</b>	<b>28,040</b>	<b>100%</b>

*This area also includes 712 acres of open water*



### Management Prescriptions

- Apply uneven-aged management, such as crop tree release, thinning, and canopy gap formation techniques, to northern hardwoods where site and stand conditions allow.
  - Consider even-aged management on northern hardwood sites where crop trees are lacking to achieve long-term uneven-aged stand management. Even-aged management methods include overstory removal and shelterwood cuts.
  - Conduct mechanical site preparation as needed. Mowing, scarification, herbicide or other methods may be utilized to enhance regeneration.
  - Use standard single tree selection (and no gap management) when little northern hardwood regeneration is present and less desirable species can dominate.
  - Use gap management techniques when abundant northern hardwood regeneration is present.
- Consider artificial regeneration of pine or spruce or other appropriate species where natural regeneration is absent or in non-forested openings generally  $\geq 5$  acres.
  - Convert plantations with predominantly northern hardwood understories to more naturally appearing stands. Maintain other plantations.
  - For mid-tolerant species such as basswood, ash and birch, encourage natural regeneration through site preparation.
  - Continue to conduct silvicultural trials to improve the establishment of natural regeneration.

The General Forest Management Prescriptions by Primary Forest Type are authorized unless restricted by a prescription above or an overlay zone prescription.





## AREA 2: WET-MESIC HARDWOODS

### Overview and Summary of the Area

This area is approximately 12,462 acres and represents the wet, red maple type on the forest. Extensive muck/organic soils, which are very prone to wind damage, characterize this area. Much of this area was affected by the 1977 windstorm. Forested wetlands, swamp hardwoods, red maple, northern hardwoods and aspen are major components in this area.

### Description of the Forest Resource

Forested coniferous wetlands constitute approximately 15% of this area and are primarily poletimber sized black spruce and tamarack along with some sawlog sized cedar stands over 100 years old. Non-forested wetlands cover approximately 11% of the area, primarily palustrine wetlands consisting of marshes, sedge and scrub/shrub types. Northern hardwoods cover approximately 23% of the area. Quality varies, from poorer quality hardwoods found in transition areas from upland to lowland sites. Regeneration in northern hardwood stands is, in most cases, inadequate without scarification. Swamp hardwoods cover 20% of this area. These stands are primarily small sawtimber stands with some sawtimber sized stands throughout the area. Ages of the swamp hardwood on average are between 50-100 years old. Aspen covers approximately 18% of this area. Aspen stands in this area are relatively young. Approximately 80% of the stands are 35 years or younger. Red maple, an important cover type on the forest, covers 5% of the area. Scarification is necessary in many stands due to a lack of regeneration. The quality of the red maple is variable, ranging from larger diameter stands to pole sized trees, with the poorer quality trees exhibiting multiple stems or a root-sprung condition due to previous wind events. Hemlock covers only about 1% of the area, in a range of size classes, unlike other stands on the forest where it is limited to larger size classes. White spruce plantations also cover 3% of the area, ranging in age from 20-60 years old. Red and white pine is underrepresented in this area with both species covering less than 1% of the area. The red pine is in plantations that are 50-75 years old, with stand size averaging 15 acres. The white pine stands are natural stands with large-diameter trees. The acreage of the white pine stands average 25 acres.

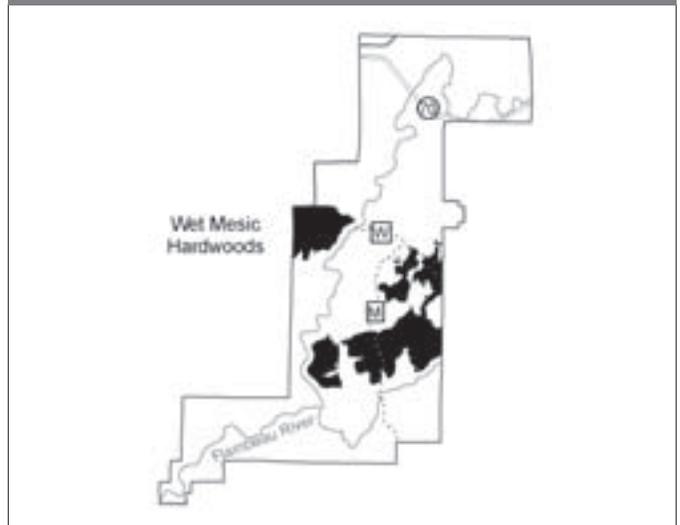
### Land type Associations

The land type associations in this area are Flambeau silt capped Drumlins (212Xd02) and Exeland Plains (212Xd03). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. The majority of the FRSF falls under this land type association. The characteristic landform pattern of Flambeau silt capped Drumlins is rolling drumlins with swamps

### AREA 2 SUMMARY

- ▲ 12,462 acres
- ▲ Wet soils with extensive wetlands
- ▲ Damaged in the 1977 windstorm

### AREA 2 LOCATOR MAP



common. Soils are predominantly moderately well drained silt loam over acid sandy loam till.

### Soils

The major soils in this area are comprised of very poorly drained muck. The parent material of these soils is herbaceous organic material more than 51 inches thick. There is a fair amount of Magnor, very stony-Magnor complex. This complex is somewhat poorly drained. Ossmer and Pesabic are also somewhat poorly drained soils that are scattered throughout this area. The scattered uplands in this area are mostly on Sconsin soil along with small areas of Freeon and Chequamegon soils.

### Habitat Types

The primary habitat type is ArAbCo (Red maple-Balsam fir/Bunchberry). Other habitat types in this area are AOCa (Sugar maple/Sweet cicely-Blue cohosh) and TMC (Eastern hemlock/Wild lily-of-the-valley-Goldthread).

ArAbCo (Red maple-Balsam fir/Bunchberry) has a wet-mesic moisture regime with a medium nutrient regime. This habitat





type is strongly associated with silt loams that are subject to a high water table, therefore there is a high chance for “swamping,” or flooding. This type is best suited for balsam fir, white spruce, aspen, and red maple. Habitat diversity could be improved by increasing the conifer component on this type. Windthrow is the primary disturbance factor due to shallow rooting on the somewhat poorly drained soils. The herb layer is moderately well developed with a lack of species diversity.

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime and a rich to very rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages. The herb layer is often developed and species rich while the shrub layer is typically not well developed.

TMC (Eastern hemlock/Wild lily-of-the-valley-Goldthread) has a mesic to wet-mesic moisture regime and a medium nutrient regime. Aspen, red maple, white birch, and yellow birch grow well on this type. Sugar maple, basswood, and white ash typically display poor vigor and quality and are not well represented on this type. Conifers are almost a constant component of stands on this type. There is a chance for “swamping” on soils associated with this type. Windthrow is almost always a potential hazard on this type. Herb layer is composed primarily of species characteristic of northern forests and raw humus substrate.

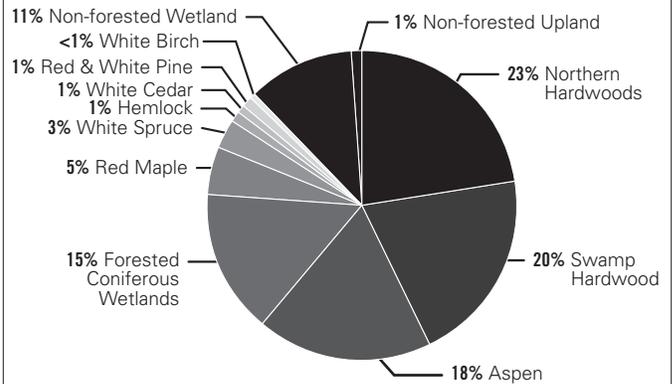
**Long Term Objectives**

Maintain the extensive high quality complex of native wetland community types in this management area. Coniferous forest types will be maintained to provide valuable habitat for a wide variety of conifer-dependent wildlife species. Red maple and swamp hardwoods will decrease due to regeneration challenges while aspen acreages are expected to increase. Planting of white and black spruce along with other appropriate species may be needed to maintain a forested cover type.

**Short Term Management Objectives**

- Maintain the diversity of forest cover types and age classes for overall health of the forest, aesthetic appeal, and to provide wildlife habitat.
- Increase aspen when mixed with red maple and lower quality hardwoods due to regeneration challenges for these species, especially in transition zones between uplands and wetlands.
- Maintain acreage of northern hardwoods and enhance quality of sawlons on appropriate sites.
- Maintain aspen in mixed stands.
- 

**FIGURE 2.3 WET-MESIC HARDWOODS CURRENT LAND COVER**



**TABLE 2.4 WET-MESIC HARDWOODS CURRENT AND PREDICTED COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested Types</b>				
Northern Hardwoods	2,842	23%	2,742	22%
Swamp Hardwood	2,510	20%	2,492	20%
Aspen	2,281	18%	2,492	20%
Forested Coniferous Wetlands	1,915	15%	1,869	15%
Red Maple	589	5%	623	5%
White Spruce	423	3%	374	3%
Hemlock	145	1%	125	1%
White Cedar	109	1%	125	1%
Red & White Pine	86	1%	125	1%
White Birch	35	<1%	0	<1%
<b>Non-forested Types</b>				
Non-forested Wetland	1,346	11%	1,371	11%
Non-forested Upland	181	1%	125	1%
<b>Total</b>	<b>12,462</b>	<b>100%</b>	<b>12,462</b>	<b>100%</b>



- Develop a diversity of ages and stand sizes for red maple, swamp hardwoods, aspen, and northern hardwoods.
- Retain and encourage yellow birch, white pine, hemlock and northern hardwood components on red maple dominated sites.
- Increase the presence of large, longer lived trees such as white pine on suitable sites.
- Maintain red maple on sites with adequate natural regeneration or where appropriate. For areas with little or no regeneration, encourage and allow other tree species to predominate, including aspen, northern hardwoods, or other desirable species.

### Management Prescriptions

- Maintain yellow birch, white pine, hemlock and northern hardwood components on red maple dominated sites. Some harvesting of these species is permitted to meet stand goals and management objectives.
- Even-aged management of northern hardwoods where crop trees are lacking shall consist of the following

methods: overstory removal and shelterwood harvests. Site preparation may be required in some areas.

- Non-forested openings generally less than 5 acres shall be allowed to naturally regenerate unless identified as a maintained wildlife opening.
- Harvest aspen surrounding non-forested areas >5 acres for natural regeneration to reduce edge effect.
- Site preparation techniques such as mowing, scarification, herbicide application or other methods may be utilized if regeneration is lacking to meet management objectives in red maple and northern hardwood stands. Strip cuts may be used in swamp hardwoods and conifer wetlands.
- Use coppice techniques to regenerate aspen in mixed stands as necessary to ensure regeneration after salvage operations.
- Continue to conduct regeneration trials in conifer wetlands, red maple, and swamp hardwood types.

The General Forest Management Prescriptions by Primary Forest Type are authorized unless restricted by a prescription above or an overlay zone prescription.





## AREA 3: RIVER SANDS HARDWOODS

### Overview and Summary of the Area

This area is approximately 8,768 acres and tends to follow the Flambeau River corridor. Much of the area is in the northern part of the forest near Oxbo along Highway 70. There are two lakes within this management area: Mason, and Evergreen.

### Description of the Forest Resource

Northern hardwoods and aspen are the two dominant community types, comprising 53% and 22% of the area respectively. The northern hardwoods are primarily poletimber and small sawtimber stands, with excellent regeneration, especially of sugar maple and ash species. The aspen is primarily pole size with secondary types of balsam, spruce, white pine, or northern hardwoods and ranges in age from 20-80 years old, with the over mature stands located within a ¼ mile of the river. Some stands exhibit low level regeneration of white pine, balsam fir, and northern hardwoods. White pine and red pine together cover approximately 4% of the area. The white pine is primarily large sawtimber, ≥100 years of age. Secondary types within white pine stands include aspen, fir-spruce, and northern hardwoods, with some stands showing a low density of white pine regeneration. The red pine is primarily small sawtimber size with good growth potential. The majority of pine stands within the forest are located in this area and along the river. There are equal amounts of hemlock and swamp hardwoods, both of which cover about 2% of the area. White spruce covers approximately 5% of the area while white birch covers only 1%. Balsam fir is a minor component, covering only 1% of the area. Forested wetlands cover approximately 6% of the area and is primarily black spruce, tamarack, and some cedar, with the tamarack having better growth potential than black spruce and cedar. Unforested wetlands cover 3% of the area. Unforested uplands include upland brush and grass openings in 2% of the area.

### Land Type Associations

The land type associations in this area are Flambeau silt capped Drumlins (212Xd02) and Exeland Plains (212Xd03). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. The majority of the FRSF falls under this land type association. The characteristic landform pattern of Flambeau silt capped Drumlins is rolling drumlins with swamps common. Soils are predominantly moderately well drained silt loam over acid sandy loam till.

### AREA 3 SUMMARY

- ▲ 8,768 acres
- ▲ Sandy loam soils
- ▲ Greatest opportunity for increasing white and red pine
- ▲ Most of this area is in the northern portion of the forest

### AREA 3 LOCATOR MAP



### Soils

Pence and Shanagolden soils are the major soils in this area along with Padus and Vilas-Lindquist complex. Soils in this area are less prone to wind damage, with the depth to the restrictive feature greater than 60 inches.

### Habitat Types

There are three primary habitat types in this area: PARVAa (White Pine-Red maple/Blueberry-Wild sarsaparilla), AVVb (Sugar maple/Blueberry-Maple-leaved viburnum), and ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley).

PARVAa (White Pine-Red maple/Blueberry-Wild sarsaparilla) has a dry to dry-mesic moisture regime and poor to medium nutrient regime. This type is particularly suited for management of pines, because growth potential for these species is high and competition pressure from understory vegetation and shade tolerant hardwoods is relatively low. White pine is sufficiently shade-tolerant to regenerate in the understory of most communities that typically develop on this habitat type. Aspen and white birch could also be considered, depending on site goals. Historically, pure and mixed stands of pine were most



FOREST PRODUCTION MANAGEMENT AREAS  
**RIVER SANDS MIXED HARDWOODS**

AREA  
**3**





prevalent with white pine being well represented. Bracken fern and large-leaved aster are typically the dominant herbs, and the shrub layer is often well-developed and dominated by beaked hazel.

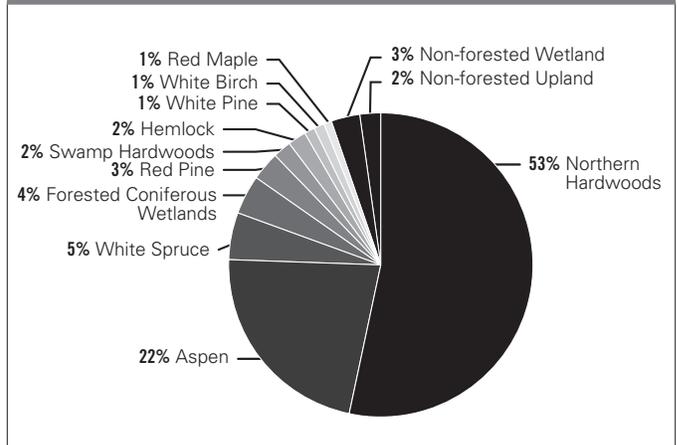
AVVb (Sugar maple/Blueberry-Maple-leaved viburnum) has a dry-mesic moisture regime and a medium nutrient regime. This type was dominated by white and red pine in the pre-logging era and it is still common to see large charred stumps. Aspen, white birch, red oak and red maple appear to be well suited for this type. In the absence of disturbance, stands on this type are often gradually taken over by sugar maple, but this type is suboptimal for growth and yield of sugar maple. In some areas, white pine can be abundant in the understory where a seed source is present and conditions are favorable. Bracken fern and large-leaved aster are typically the dominant herbs, and the shrub layer is typically diverse and well-developed.

ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley) has a mesic moisture regime with a medium nutrient regime. Trees exhibiting good to excellent productive and competitive potential include sugar maple, basswood, white ash, yellow birch, and hemlock. Others demonstrating excellent productivity but limited competitive abilities include red maple, red oak, and white pine. Following disturbance, aspen and paper birch can demonstrate excellent productivity as pioneers. Herbaceous species characteristic of mesic, nutrient-rich sites occur sporadically on this habitat type. The shrub layer is moderately well developed in younger or early successional stands, but poorly represented in older stands.

**Long Term Objectives**

Early successional forest types will be maintained as a strong component of the landscape. Mixed stands with aspen will see the proportion of aspen increased naturally. Across this management area, there will be an increase in the presence and age of red and white pine on suitable sites, with an emphasis on regenerating natural stands of red and white pine. Current levels of red pine plantation acreage will be maintained. The northern hardwood component will be maintained on appropriate sites and where possible, will be converted from even-aged to uneven-aged management.

**FIGURE 2.4 RIVER SANDS MIXED HARDWOODS CURRENT LAND COVER**



**TABLE 2.5 RIVER SANDS MIXED HARDWOODS CURRENT AND PREDICTED COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested Types</b>				
Northern hardwoods	4,671	53%	4,647	53%
Aspen	1,923	22%	2,017	23%
White Spruce	477	5%	438	5%
Forested Coniferous Wetlands	355	4%	351	4%
Red pine	259	3%	351	4%
Swamp hardwoods	193	2%	175	2%
Hemlock	175	2%	175	2%
White pine	126	1%	175	2%
White Birch	47	1%	88	1%
Red maple	45	1%	88	1%
<b>Non-forested Types</b>				
Wetlands	293	3%	263	3%
Upland	204	2%	0	<1%
<b>Total</b>	<b>8,768</b>	<b>100%</b>	<b>8,768</b>	<b>100%</b>

*This area also contains 422 acres of open water*



### Short Term Management Objectives

- Maintain the diversity of forest cover types and age classes for forest health, aesthetic appeal, and wildlife habitat.
- Maintain or increase aspen in mixed stands.
- Maintain red and white pine, hemlock, and cedar for species diversity.
- Promote the growth and retention of large red and white pine in mixed and natural stands.
- Maintain the conifer component in mixed stands.
- Maintain high quality northern hardwoods.
- Retain oak on suitable sites.
- Promote regeneration of mid-tolerant species such as basswood, ash, and birch within northern hardwood stands.
- Maintain reserve trees and islands to promote travel corridors and age class diversity among managed even-aged aspen stands.

### Management Prescriptions

- Maintain or increase natural stands of red and white pine through shelterwood harvests and site preparation. Increase pine component on non-forested upland openings generally  $\geq 5$  acres.

- Natural conversion techniques such as crop tree release through thinning and scarification around existing seed sources may be used to maintain and increase red and white pine.
- For northern hardwoods where crop trees are lacking use overstory removal and shelterwood harvests. Site preparation may be required in some areas.
- Retain oak when possible for diversity. Oak regeneration will be promoted by releasing crop trees through single tree selection and scarification around existing seed sources.
- Regenerate mid-tolerant species such as basswood, ash, and birch using gap management and scarification techniques where sites and stands are suitable. This area has the best opportunity to maintain mid-tolerant species, which are lacking on more mesic sites in the forest.

The General Forest Management Prescriptions by Primary Forest Type are authorized unless restricted by a prescription above or an overlay zone prescription.





## AREA 4: BACK COUNTRY HARDWOODS

### Overview and Summary of the Area

This area is approximately 5,013 acres and is divided into 2 blocks; the Butternut Creek Area (3,100 acres) in the northeast part of the forest and the Bear Creek Road Area (2,072 acres) in the southern part of the forest. Unique to this area is limited motorized vehicle access (for management purposes only) and winter only timber harvesting. Northern hardwoods will be an important component to retain in this area, along with maintaining and increasing conifer species. Species associated with mature interior forest conditions are known to use this area.

### Description of the Forest Resource

Northern hardwoods cover approximately 39% of this area, ranging in size from seedling/sapling to large sawtimber. The average size of northern hardwood stands in this area is 43 acres, varying in quality and regeneration. The second largest cover type here is forested coniferous wetlands (21%), primarily black spruce and tamarack with an average age of 80 years, and low growing potential. A large, older stand of cedar (>50 years) of (79 acres) is found near Butternut Creek. Young aspen makes up 10% of this area with an average age of 28 years with good growth potential. Red maple covers 6% of the area and swamp hardwoods 11%, with an average age of about 70 years and medium growth potential for both species. Hemlock inclusions are a minor, but important component in this area, covering <1% of the area. These large sawtimber hemlock stands average approximately 100 years old on stands up to 20 acres. White pine covers only 3% of the area, in small and large sawlog size classes. White pine and cedar are the most underrepresented conifers in all sizes and ages here.

### Land Type Associations

Flambeau silt capped Drumlins (212Xd02) and Exeland Plains (212Xd03) are the land type associations for this area. The characteristic landform pattern of the Exeland Plains is undulating outwash plains with predominantly well drained silt loam over outwash soils. The majority of the FRSF falls under this land type association. The characteristic landform pattern of the Flambeau silt capped Drumlins is rolling drumlins with wetlands common with predominantly moderately well drained silt loam over acid sandy loam till soils.

### Soils

Sconsin, Butternut, and Chequamegon are the major soils in this area along with large areas of muck/organic soils. Forest stands on all soils in this management area are prone to wind damage due to restrictive layers limiting root development. The depth to a restrictive layer can be as little as 20 inches.

### AREA 4 SUMMARY

- ▲ 5,013 acres
- ▲ Small old-growth hemlock groves
- ▲ Many small streams and drainages
- ▲ Limited motor vehicle access promoting a remote back-country experience
- ▲ Winter only harvesting

### AREA 4 LOCATOR MAP



### Habitat Types

There are two primary habitat types in this area are AOCa (Sugar maple/Sweet cicely-Blue cohosh) and ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley).

AOCa has a mesic moisture regime and a rich to very rich nutrient regime. Most tree species exhibit excellent growth and productivity on this habitat type if competition is controlled. Northern hardwoods have excellent productive potential and competitive advantages on this habitat type. The herb layer is often developed and species rich with an undeveloped shrub layer.

ATM has a mesic to dry-mesic moisture regime and a medium nutrient regime. Sugar maple, basswood, white ash, yellow birch, and hemlock exhibit productive and competitive advantages on this type. Other species with excellent productivity but limited competitive abilities on this type include red maple, red oak, and white pine. Following intense disturbance, aspen and paper birch are often pioneer species with excellent





productivity. Herb species characteristic of mesic, nutrient-rich sites occur only sporadically on this habitat type. The shrub layer is moderately well developed in younger and early successional stands, but is poorly represented in older stands.

**Long Term Objectives**

Motorized vehicle access will be restricted to only forest management and game improvement activity. This area will provide a public backcountry recreational experience and provide walk-in hunting opportunities. Northern hardwoods will remain the dominant cover type with scattered pockets of early to mid-successional species and older hemlock stands. White pine, hemlock, and cedar components will be maintained for large-diameter trees and older forests.

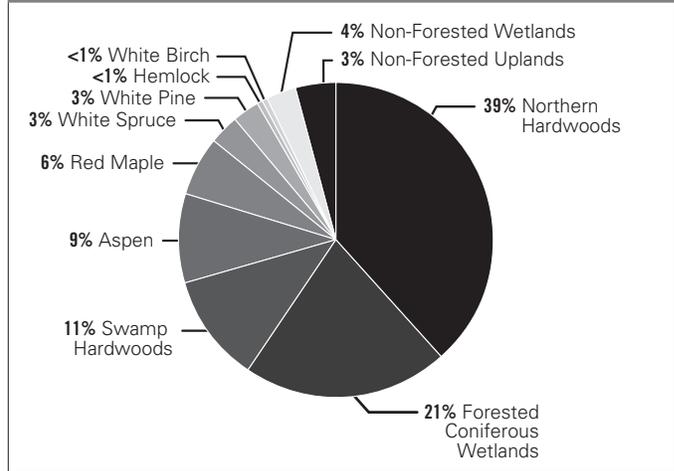
**Short Term Management Objectives**

- Restrict timing of harvest activities to winter only.
- Maintain a diversity of forest cover types and age classes with northern hardwoods as the dominant cover type for forest health, aesthetic appeal, and wildlife habitat.
- Maintain high quality red maple as a compositional component in northern hardwood stands.
- Encourage yellow birch, basswood, and ash and other mid-tolerant species where seed sources exist.
- Improve sawlog quality in northern hardwood stands.
- Improve regeneration of all cover types.
- Limit gap management techniques on sites absent of northern hardwood regeneration.
- Maintain aspen in mixed stands to biological rotation age.
- Maintain red and white pine, tamarack, hemlock, cedar, balsam fir, and spruce at current levels.

**Management Prescriptions**

- Maintain access for management purposes only. Gates will be maintained or placed to limit access on existing logging roads.
- Develop uneven-aged management for northern hardwoods through gap management and thinnings. Site preparation may be required in some areas.
- Conduct timber harvests from December 1st to March 31st.
- Regenerate mid-tolerant species such as basswood, ash, and birch using gap management and scarification techniques where sites and stands are suitable.
- Use mowing, scarification, herbicide application or other methods as appropriate.
- Coppice aspen in mixed stands as necessary to ensure regeneration after salvage operations.
- Evaluate crop tree stocking in wind damaged stands to determine appropriate future management.

**FIGURE 2.5 BACK COUNTRY HARDWOODS CURRENT LAND COVER**



**TABLE 2.6 BACK COUNTRY HARDWOODS CURRENT AND PREDICTED COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested Types</b>				
Northern Hardwoods	1,935	39%	1,941	39%
Forested Coniferous Wetlands	1,071	21%	1,045	21%
Swamp Hardwood	557	11%	547	11%
Aspen	447	9%	498	10%
Red Maple	279	6%	249	5%
White Spruce	171	3%	149	3%
White Pine	128	3%	199	4%
Hemlock	21	<1%	21	<1%
White Birch	16	<1%	16	<1%
<b>Non-forested Types</b>				
Non-forested Uplands	168	3%	149	3%
Non-forested Wetlands	220	4%	199	4%
<b>Total</b>	<b>5,013</b>	<b>100%</b>	<b>5,013</b>	<b>100%</b>

*This area also includes 12 acres of water.*



- Use standard single tree selection (and no gap management) when little northern hardwood regeneration is present and less desirable species can dominate.
- Use gap management techniques when abundant northern hardwood regeneration is present.
- Existing wildlife openings will be naturally re-vegetated and no new wildlife openings will be created or maintained within this management area.

The General Forest Management Prescriptions by Primary Forest Type are authorized unless restricted by a prescription above.





## AREA 5: JUMP RIVER HARDWOODS

### Overview and Summary of the Area

This area is approximately 6,680 acres and is located in the southern most portion of the forest. This area has several unique features that are attributed to a different land type association than the rest of the forest. Soils are also much less susceptible to wind throw as well as tree species diversity are higher here than on other parts of the forest, and conditions here support a range of unique mid-tolerant tree species such as northern red oak, bitternut hickory and butternut. This area also contains an extensive mesic to wet-mesic hemlock, yellow birch and white pine dominated forest along a two mile stretch of George Ladd Creek. There is also a long-term research overlay zone here along Hervas Road.

### Description of the Forest Resource

Quality northern hardwoods of varying sizes and ages cover 37% of this area. Red oak, bitternut hickory, and butternut are all components of northern hardwood stands, but they are all mid-tolerant species and this is the northern end of their ranges. Most of the butternut suffers from butternut canker disease, which eventually girdles and kills infected trees. Aspen covers 24% of this area with an average age of 40-45 years with good growth potential. In aspen stands, northern hardwoods, red maple, and balsam fir are common secondary types. Swamp hardwoods cover 10% and red maple covers less than 1% of the area. Black ash stands have 2-3 age classes here, with some stands aged 120 years or older. Generally, these stands will be managed for pulp and bolts. Average age of the red maple in this area is close to 70 years. Growth potential for red maple is good; however, regeneration in swamp hardwoods and red maple has been difficult without scarification. Non-forested wetlands cover 10% of the area, most of which is lowland brush – alder. Hemlock covers about 4% of the area, with numerous patches of good quality hemlock, especially near Hervas Road. Hemlock stands range in size from 1- 52 acres, although most average 20 acres. There is also 63 acres of white cedar located in 3 different stands, which serve as a deer yards. The northern white cedar along with black spruce, tamarack make up 6%. Large sawtimber ( $\geq 100$  years) white pine stands represent 3% of the area. Red pine and white spruce are scattered throughout mixed stands.

### Land Type Associations

The land type associations in this area are Exeland Plains (212Xd03) and the Jump River Ground Moraine (212 Xd05). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. The majority of the FRSF falls

### AREA 5 SUMMARY

- ▲ 6,680 acres
- ▲ Nutrient rich soils
- ▲ Well developed herbaceous and shrub layers
- ▲ Rich diversity of species including butternut, bitternut hickory, and oaks

### AREA 5 LOCATOR MAP



under this land type association. The characteristic landform pattern of Jump River Ground Moraine is undulating moraine and stream terraces. Soils are predominantly somewhat well drained silt loam over dense, acid sandy loam till. This land type association is only found along portions of the southern edge of the forest.

### Soils

The major soils in this area are comprised of Magnor, very stony-Magnor complex and the Freeon, very stony-Freeon complex. The Magnor complex is somewhat poorly drained, while the Freeon complex is moderately well drained. Both complexes are silt loam over sandy loam. The Capitola-Cebana complex is scattered throughout this area also. This complex is very poorly drained and has about 5" of muck over silt loam, which is over sandy loam. Another scattered soil in this area is comprised of very poorly drained muck. The parent material of this soil is herbaceous organic material more than 51 inches thick. The Capitola-Cebana complex and the muck are both susceptible to wind due to wetness along with a restrictive layer below 40".





**Habitat Types**

There are three habitat types within this area: ArAbCo (Red maple-Balsam fir/Bunchberry), AOCa (Sugar maple/Sweet cicely-Blue cohosh), and TMC (Eastern hemlock/Wild lily-of-the-valley-Goldthread).

ArAbCo (Red maple-Balsam fir/Bunchberry) is strongly associated with silt loams that are subject to a high water table. This type is best suited for balsam fir, white spruce, aspen, and red maple. Windthrow is the primary disturbance factor on this type due shallow rooting on the somewhat poorly drained soils. The herb layer is moderately well developed and relatively species poor.

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime and a rich to very rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages. Red oak can also grow exceptionally well but regeneration is usually limited to gaps due to absence of major disturbance. The herb layer is often developed and species rich, with an undeveloped shrub layer.

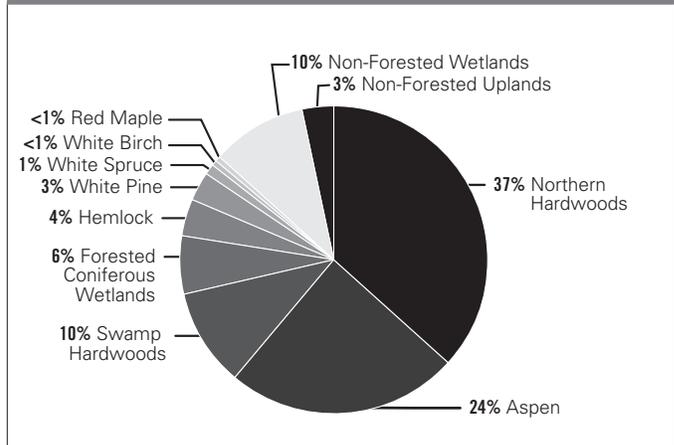
**Long Term Objectives**

High quality northern hardwoods and aspen will predominate in this area. Hemlock/hardwood inclusions throughout the area will provide larger, older trees and structural attributes consistent with older forests. This area of the forest will increase in forest composition, age, and vertical structure.

**Short Term Management Objectives**

- Maintain acreage of northern hardwoods and enhance quality of sawlogs on appropriate sites.
- Increase age and maintain a diversity of forest cover types and age classes for forest health, aesthetic appeal, and wildlife habitat.
- Maintain aspen in mixed stands.
- Maintain and increase white pine.
- Increase and maintain northern red oak, hickory, and butternut.
- Provide opportunities for research consistent with area management objectives.
- Increase mid-tolerant species such as basswood, ash, and birch within northern hardwood stands.

**FIGURE 2.6 JUMP RIVER HARDWOODS CURRENT LAND COVER**



**TABLE 2.7 JUMP RIVER HARDWOODS CURRENT AND PREDICTED COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested Types</b>				
Northern Hardwood	2,497	37%	2,538	38%
Aspen	1,627	24%	1,670	25%
Swamp Hardwoods	638	10%	735	11%
Forested Coniferous Wetland	408	6%	401	6%
Hemlock	271	4%	267	4%
White Pine	179	3%	200	3%
White Spruce	63	1%	67	1%
White Birch	21	<1%	0	<1%
Red Maple	7	<1%	0	<1%
<b>Non-forested Types</b>				
Non-forested Wetland	656	10%	668	10%
Non-forested Upland	183	3%	134	2%
<b>Total</b>	<b>6,680</b>	<b>100%</b>	<b>6,680</b>	<b>100%</b>

This area also contains 4 acres of water.



### Management Prescriptions

- Consider even-aged management on northern hardwood sites where crop trees are lacking to achieve long-term uneven-aged stand management. Even-aged management methods include overstory removal and shelterwood harvests. Conduct mechanical site preparation as needed.
- Use mowing, scarification, herbicide application or other methods as necessary to meet management objectives.
- Use coppice techniques to regenerate aspen in mixed stands as necessary to ensure regeneration after salvage operations.
- Encourage mid-tolerant species through gap management and scarification around existing seed sources.
- Increase white pine through active management on suitable soils including natural and artificial methods.

The General Forest Management Prescriptions by Primary Forest Type are authorized unless restricted by a prescription above or an overlay zone prescription.





## AREA 6: BIG BLOCK

### Overview and Summary of the Area

The Big Block Area is approximately 831 acres with motorized public vehicle access restricted to promote a backcountry recreational experience. Historically, the Big Block area was occupied by a stand of landmark old growth hemlock-hardwood forest, representing the largest remaining remnant of state-owned old-growth forest. On July 4, 1977, most of this area (approximately 1,300 acres) was blown down by a down-burst wind event and was salvaged after the storm. The area regenerated to aspen and northern hardwoods with a high proportion of low quality rock elm. However, due to extreme weather and microclimatic conditions, along with deer browse, the hemlock did not regenerate after the down burst. Regeneration trials have been unsuccessful. In addition, numerous large openings lacking regeneration are present in this area.

Northern hardwoods will be an important component to retain in this area, along with other mid-tolerant species such as basswood, ash, and birch. Due to the 1977 wind storm, there is primarily one age class which is approximately 30 years old. Aspen and other early-mid successional species play a much larger role in this area now than they did previously. Long-term research plots are located within this area to compare salvaged and unsalvaged portions of the Big Block (Lang et al. 2008)

### Description of the Forest Resource

This area is in an early to mid-successional phase. Poor quality seed origin aspen is the primary early successional species here covering 34% of the area. Northern hardwoods cover approximately 50% of the area. There is a high percentage of tree species present providing a rich diversity throughout the area. Tree species present include red oak, basswood, yellow birch, maple, ash, cherry and rock elm, which is a significant component here. Prior to 1977, this area was a closed canopy forest. Non-forested uplands comprise about 10% of the area. Non-forested wetlands and a minor conifer component make up the remainder of the area.

### Land Type Associations

The land type association in this area is Exeland Plains. The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. This land type association covers most of the forest.

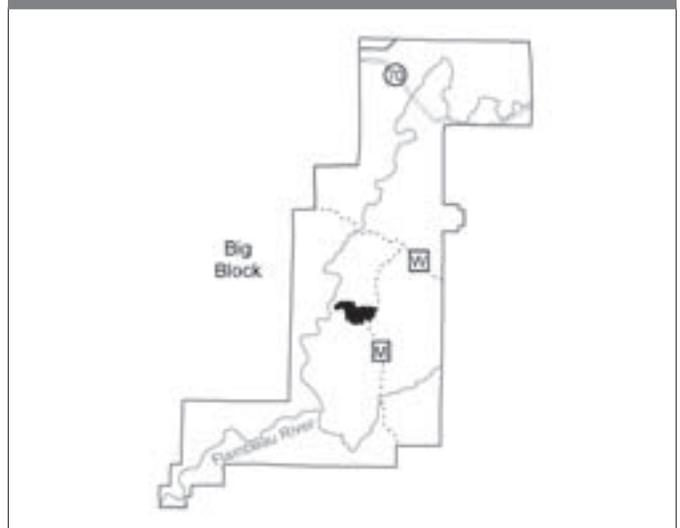
### Soils

Sconsin is the major soil in this area. This soil is prone to wind damage due to restrictive layers limiting rooting development. The distance to a restrictive layer can be as little as 20 inches.

### AREA 6 SUMMARY

- ▲ 831 acres
- ▲ Opportunity for backcountry recreational experience
- ▲ Old-growth hemlock-hardwood forest blown down in 1977 windstorm
- ▲ Numerous large openings throughout
- ▲ Size class primarily saplings and pole timber

### AREA 6 LOCATOR MAP



### Habitat Types

The primary habitat type within this area is AOCa (Sugar maple/Sweet cicely-Blue cohosh), which has a mesic moisture regime rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages.

### Long Term Objectives

Motorized vehicle access will be restricted to forest management and game improvement activities. This area will provide a public backcountry recreational experience and provide walk-in hunting opportunities. Northern hardwoods will be maintained and enhanced to improve age and species diversity and forest health. Aspen, where suitable, will also be maintained for species diversity. The conifer component may be increased through planting especially in the non-forested openings.





**Short Term Management Objectives**

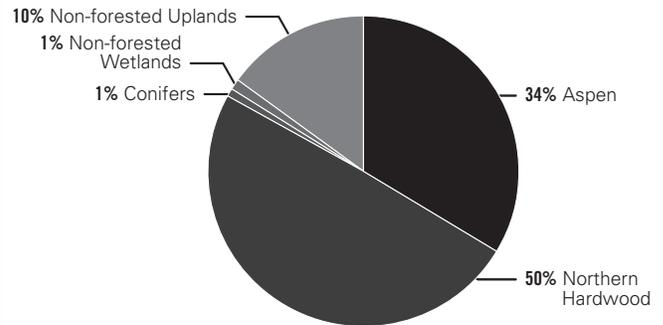
- Provide public non-motor use area that emphasizes back-country recreational opportunities and walk-in hunting access.
- Increase and maintain existing stands of northern hardwoods.
- Increase and maintain yellow birch, basswood, ash, and other mid-tolerant species where seed sources exist.
- Increase the conifer component.

**Management Prescriptions**

- Maintain access for management purposes only. Maintain or place gates where needed to limit public vehicular access. Allow motorized access for forest management and forest game habitat improvement activities.
- Consider even-aged management on northern hardwood sites where crop trees are lacking. Even-aged management includes prescriptions for shelterwood harvest coupled with site preparation if needed. Future management on these sites could be converted to uneven-aged management as stand conditions warrant.
- Use regeneration techniques such as scarification, gap management, or mowing as needed.
- Use thinning and other silviculture techniques to release and favor red oak and yellow birch.
- Intermediate treatments such as: tree release, thinning and improvement, salvage and sanitation and pruning may be used to enhance stand composition, structure, growth, health and quality.
- Increase conifer component by appropriate artificial regeneration methods.
- Convert non-forested upland openings generally  $\geq 5$  acres to suitable species such as white pine, spruce, and other appropriate species.

The General Forest Management Prescriptions by Primary Forest Type are authorized unless restricted by a prescription above or an overlay zone prescription.

**FIGURE 2.7 BIG BLOCK CURRENT LAND COVER**



**TABLE 2.8 BIG BLOCK CURRENT AND PREDICTED COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested Types</b>				
Aspen	287	34%	299	36%
Northern Hardwood	412	50%	407	49%
Conifers	0	1%	83	10%
<b>Non-forested Types</b>				
Non-forested Wetlands	7	1%	8	1%
Non-forested Uplands	125	15%	33	4%
<b>Total</b>	<b>831</b>	<b>100%</b>	<b>831</b>	<b>100%</b>

*This area also includes 2 acres of road right of way*



**NATIVE COMMUNITY MANAGEMENT AREAS**



**NATIVE COMMUNITY MANAGEMENT AREAS**

Native community management areas are managed with the primary objective of representing, restoring, and perpetuating native plant and animal communities, whether upland, wetland, or aquatic and other aspects of native biological diversity. Management activities are designed to achieve land management objectives through natural processes or management techniques that mimic natural processes when possible. Areas that do not have the desired community conditions but have a reasonable potential to be restored to those conditions are included in the Native Community Classification.

Native community management areas also provide low-impact public access for uses such as hiking, bird-watching, photography, and nature study. Opportunities are also available for research, ecological interpretation and education.

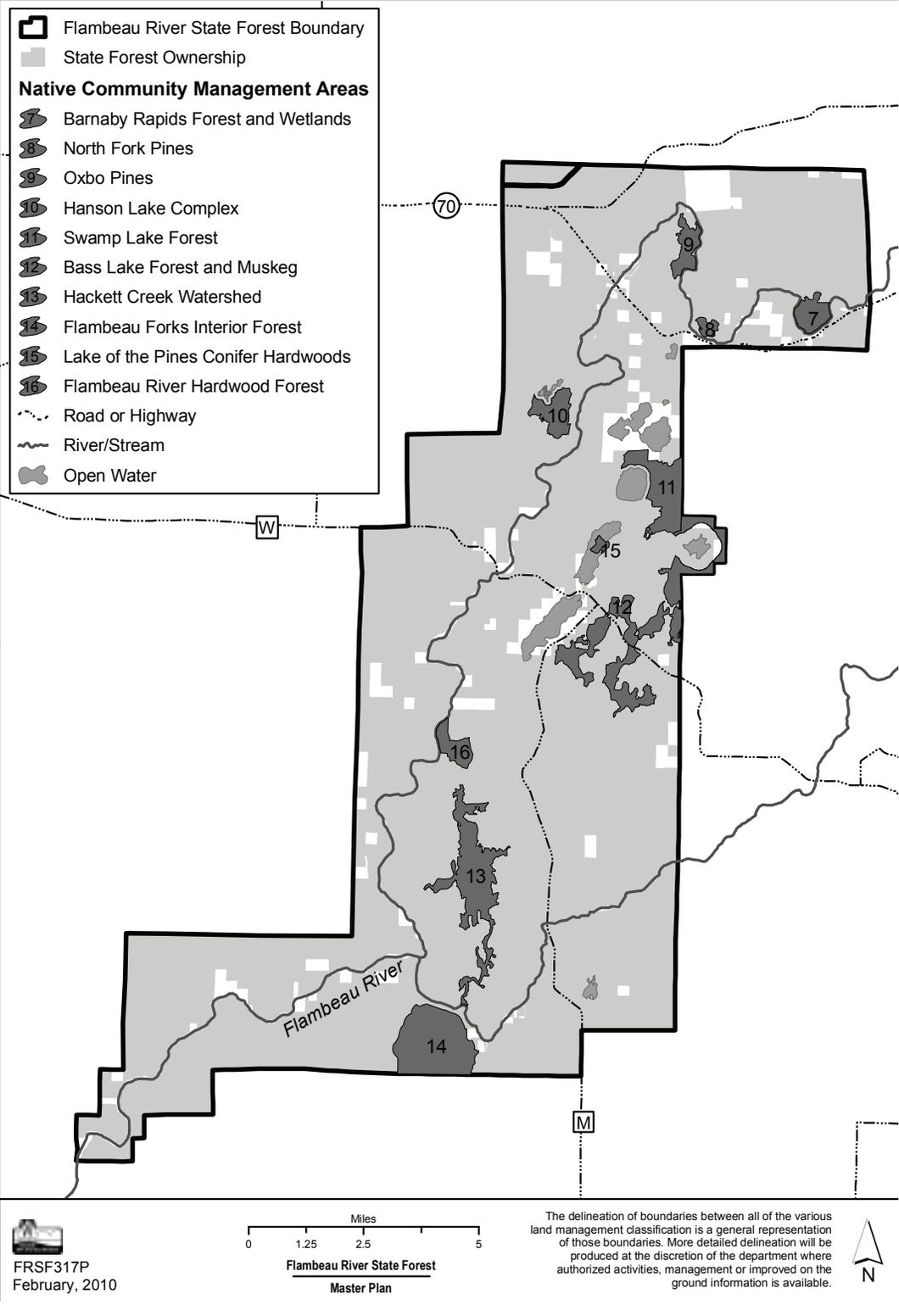
**TABLE 2.9 NATIVE COMMUNITY MANAGEMENT AREAS**

Area #	Native Community Management Areas	Acres
7	Barnaby Rapids	283
8	North Fork Pines	87
9	Oxbo Pines	283
10	Hanson Lake Complex	336
11	Swamp Lake Forest	752
12	Bass Lake Forest and Muskeg	1,485
13	Hackett Creek Wetlands	1,289
14	Flambeau Forks Interior Forest	1,358
15	Lake of the Pines Conifer-Hardwoods	53
16	Flambeau River Hardwood Forest	263
	<b>Total</b>	<b>6,189</b>



**NATIVE COMMUNITY MANAGEMENT AREAS**

**MAP 2.4 NATIVE COMMUNITY MANAGEMENT AREAS**





## AREA 7: BARNABY RAPIDS FOREST AND WETLANDS

### Overview and Summary of the Area

Located in the northeastern portion of the forest, in a bend of the North Fork of the Flambeau River, this area includes a block of mature Northern Mesic Forest with mixed conifers and hardwoods, embedded wetlands and Ephemeral Ponds. This site is located directly adjacent to the river and is within a roadless portion of the forest, further enhancing its ecological value. The area has been used by rare forest birds for several years and is one of three new management areas designed to develop and maintain old-growth Northern Mesic Forest (see also Area 14 and the Bass Lake portion of Area 20).

### Description of the Forest Resource

Northern hardwoods cover approximately 86% of this area, which vary from pure stands to mixed conifer-hardwoods. Mature sugar maple, basswood, and yellow birch are the dominant tree species, with trees over 20 inches in diameter common in the eastern portion of the area. The presence of intact structural features such as standing dead snags and abundant coarse woody debris add to the value of this area. In the western portion of the site, just east of the river, large, super-canopy white pines are common and hemlock is dominant. Northern white cedar is also present in this area and covers about 7%. The cedar is mostly large saw size and occurs in mixed stands with hemlock. An undisturbed Ephemeral Pond featuring 18"-20" dbh black and green ash is located adjacent to the mature hemlock hardwoods stand. Black spruce makes up about 2% of the area, and is located in the northern portion of the site. The black spruce is primarily poletimber sized with high growth potential. These wetlands are part of a large peatland complex that stretches for several miles to the north of the area (see Area 4).

### Land Type Associations

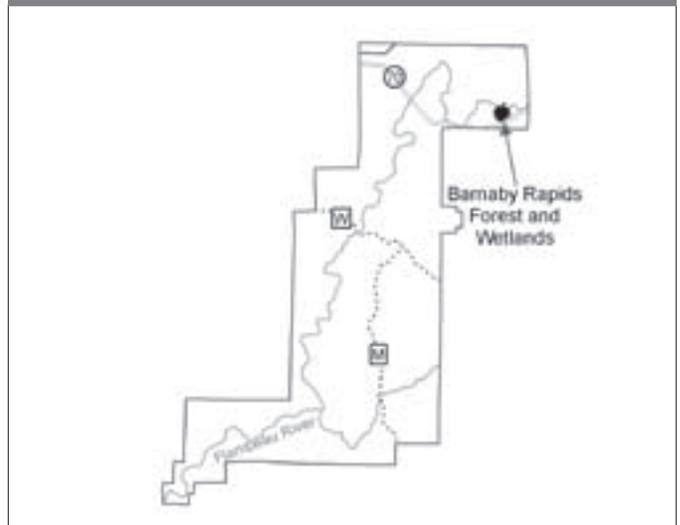
The characteristic landform pattern of the Exeland Plains (212Xd03) is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. This LTA comprises the southern portion of the management area, extending further south to cover the majority of the FRSF.

The characteristic landform pattern of Flambeau silt capped Drumlins (212Xd02) is rolling drumlins with swamps. Soils are predominantly moderately well drained silt loam over acid sandy loam till. This land type association is found along the northern and western portions of the FRSF; this is the only Native Community Management Area within this LTA.

### AREA 7 SUMMARY

- ▲ 283 acres
- ▲ Opportunity to develop and maintain a forest with old-growth characteristics, along with Ephemeral Ponds and other wetlands through passive management
- ▲ Provides habitat for forest interior wildlife species near the Flambeau River

### AREA 7 LOCATOR MAP



### Soils

The major soil in this area is the moderately well-drained Shangolden fine sandy loam. Other soils cover only small, scattered portions of the management area. These soils include the poorly drained Cable silt loam, the somewhat poorly drained Peeksville fine sandy loam, and the very poorly drained muck soils of Lupton and Cathro and Loxley and Beseman.

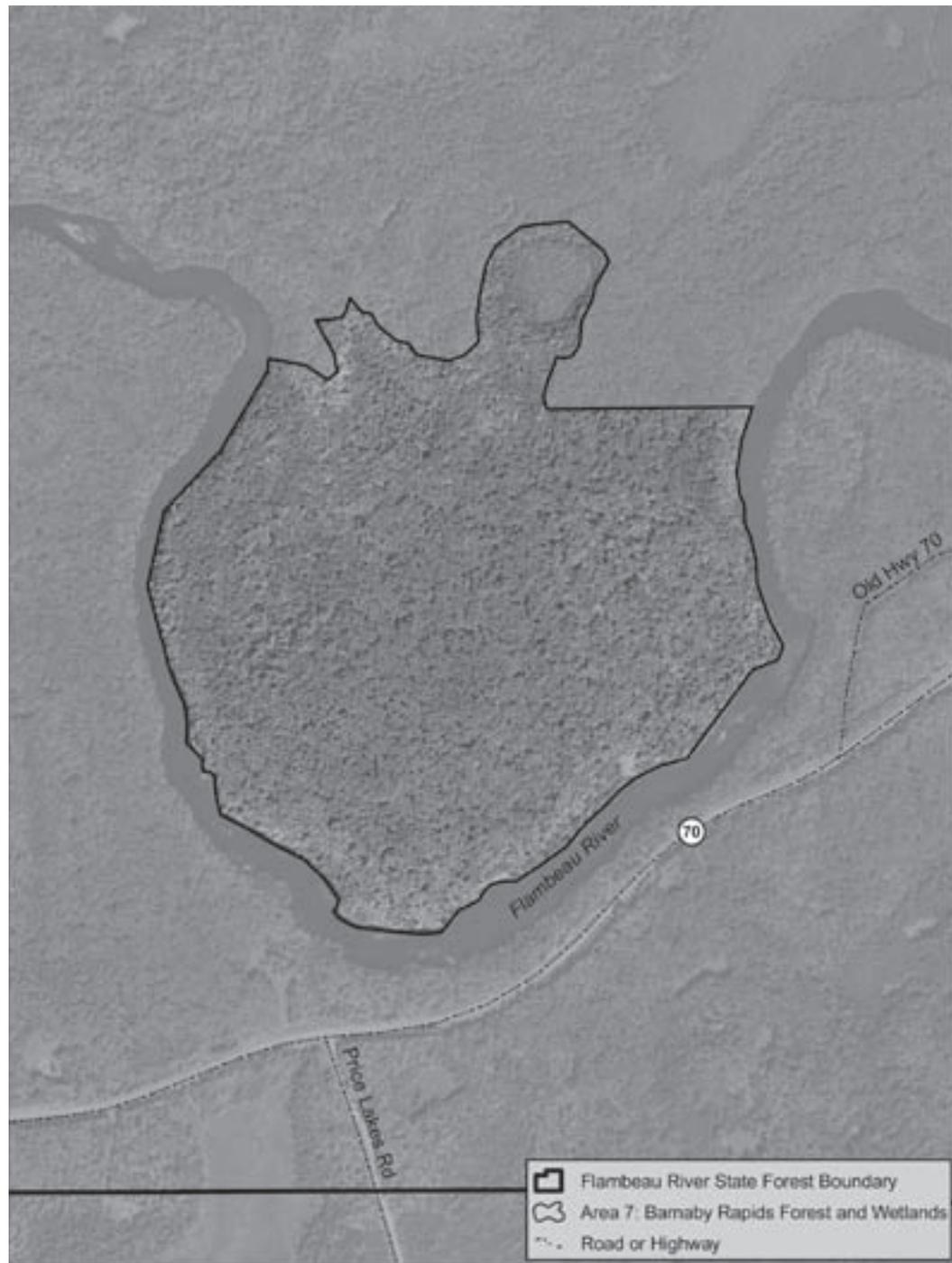
### Habitat types

The primary habitat types within this area are AOCa (Sugar maple/Sweet cicely-Blue cohosh), and ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley). There is also a small amount of TMC (Eastern hemlock/Wild lily-of-the-valley-Goldthread). Currently there are no habitat types assigned to the muck soils.

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime with a rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern



**MAP 2.5 BARNABY RAPIDS**



  
 FRSF307P  
 March, 2010



The delineation of boundaries between all of the various land management classifications is a general representation of those boundaries. More detailed delineation will be produced at the discretion of the department where authorized activities, management or improved on the ground information is available.





hardwoods demonstrate excellent productive potential and competitive advantages in this habitat type. The herb layer is often developed and species rich while the shrub layer is typically not well developed.

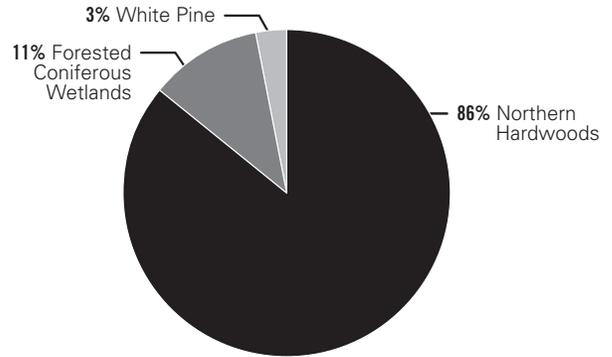
ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley) has a mesic moisture regime with a medium nutrient regime. Trees exhibiting good to excellent productive and competitive potential include sugar maple, basswood, white ash, yellow birch, and hemlock. Others demonstrating excellent productivity but limited competitive abilities include red maple, red oak, and white pine. Following disturbance, aspen and paper birch can demonstrate excellent productivity as pioneers. Herbaceous species characteristic of mesic, nutrient-rich sites occur sporadically on this habitat type. The shrub layer is moderately well developed in younger or early successional stands, but poorly represented in older stands.

TMC (Eastern hemlock/Wild lily-of-the-valley-Goldthread) has a mesic to wet-mesic moisture regime and a medium nutrient regime. Aspen, red maple, white birch, and yellow birch grow well on this type. Sugar maple, basswood, and white ash typically display poor vigor and quality and are not well represented on this type. Conifers are almost a constant component of stands on this type. There is a chance for “swamping” on soils associated with this type. Windthrow is almost always a potential hazard on this type. Herb layer is composed primarily of species characteristic of northern forests and raw humus substrate.

**Long Term Objectives**

Maintain a contiguous block of Northern Mesic Forest (northern hardwood and conifer) with old-growth characteristics, embedded wetlands and Ephemeral Ponds. Maintain and protect the integrity of the wetland features and their hydrological connections to the river. Provide habitat for forest interior wildlife species. Provide opportunities for research, education and interpretation.

**FIGURE 2.8 BARNABY RAPIDS CURRENT LAND COVER**



**TABLE 2.10 BARNABY RAPIDS CURRENT AND PREDICTED COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested Types</b>				
Northern Hardwood	243	86%	243	86%
Forested Coniferous Wetland	32	11%	32	11%
White Pine	8	3%	8	3%
<b>Total</b>	<b>283</b>	<b>100%</b>	<b>283</b>	<b>100%</b>

Area also includes 4 acres of minor streams.



### Short Term Management Objectives

- Develop old-growth characteristics, including large trees, abundant coarse woody debris and standing dead snags through natural processes.
- Maintain the remote nature of this area.

### Management Prescriptions

- Passively manage the entire management area, except to control invasive species, allowing natural processes to occur with the eventual goal of developing an old-growth hardwood forest.
  - Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy, including a funding source, if any species are found.
  - Pesticide use is permitted for invasive species management.
  - Monitor this area within the next 10 years for the presence of additional rare species, as resources allow.
  - New recreational features shall not be developed in this area.
- New roads or trails shall not be developed in this area.
  - Harvest of fine woody material, as defined in the department's Woody Biomass Harvesting Guidelines, is not authorized in this area.
  - Existing wildlife openings will be naturally re-vegetated and no new wildlife openings will be created or maintained within this management area.
  - Salvage operations due to catastrophic wind, ice, fire, disease or insects may take place. Prior to salvage an interdisciplinary team will be consulted to determine if salvage operations or additional management could be considered with due deliberation regarding the original objectives of the area.





## AREA 8: NORTH FORK PINES

### Overview and Summary of the Area

Along with Oxbo Pines, this is one of the two largest and best quality examples of white pine forest on the property. This 87 acre area exhibits larger trees, higher canopy closure, a different landscape context, and more mesic conditions than Oxbo Pines. North Fork Pines provides an opportunity to maintain a significant block of white pine forest with old-growth characteristics while protecting a portion of the riverbank. The northern hardwoods will be maintained through active management using old forest-extended rotation techniques. As mature conifer forests are uncommon in the local landscape, this area will provide a valuable benchmark to compare to managed areas throughout the state forest and surrounding landscape, a unique habitat for animals associated with upland conifer forests, and an ecological connection to both the river and the richer adjacent hardwood forest. Blackburnian Warbler and Pine Warbler are known from the site - both nest in mature conifers and should benefit from the presence of the large pines found here.

### Description of the Forest Resource

A block of natural white pine here is bordered by northern hardwoods to the north and bottomland hardwoods and alder to the south. The pine stand is mostly contiguous mature white pine, although there are at least two small areas that have experienced some wind damage in the past. The openings have retained mature pine but include a thick shrub component and, in some areas, smaller diameter hardwoods such as yellow birch and sugar maple. Large-diameter white pine, well over 100 years old, can be found in the stand. Hardwoods such as sugar and red maple, white and yellow birch, ironwood, red oak, and pole size aspen are found in the sub-canopy and sapling layers, along with some white pine. There are few white pine seedlings in the understory, although white pine saplings are found to some degree in the windthrow areas.

### Land Type Associations

The land type association in this area is Exeland Plains (212Xd03). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. This land type association comprises the majority of the FRSF.

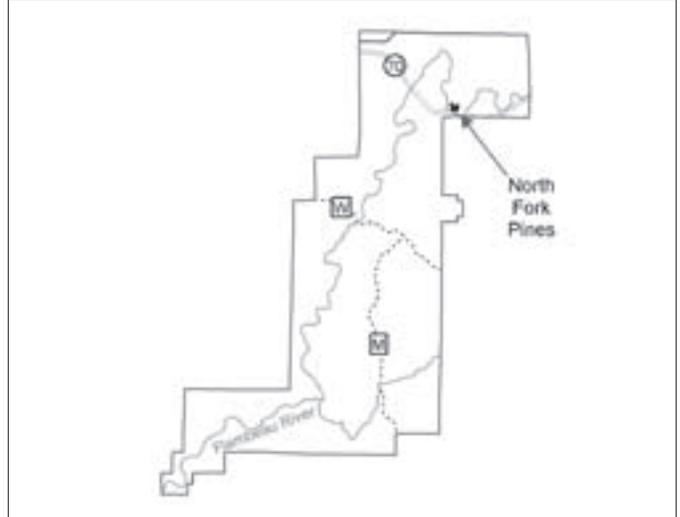
### Soils

The major soil map unit in this area is Padus sandy loam. This soil is well drained, and the depth to the restrictive layer is very deep at more than 60 inches. The Moppet-Fordum complex is also located in this area along the river. This complex is occasionally to frequently flooded but moderately well drained.

### AREA 8 SUMMARY

- ▲ 87 acres
- ▲ One of the two best examples of mature, natural origin pine forest on the property
- ▲ Opportunity to develop a significant block of old-growth white pine forest while managing other portions of the site using old forest-extended rotation silvicultural techniques and encouraging regeneration of white pine
- ▲ The new North Fork Pines State Natural Area (87 acres) will overlay the entire management area

### AREA 8 LOCATOR MAP



### Habitat Types

The primary habitat type within this area is ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley).

ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley) has a mesic moisture regime with a medium nutrient regime. Trees exhibiting good to excellent productive and competitive potential include sugar maple, basswood, white ash, yellow birch, and hemlock. Others demonstrating excellent productivity but limited competitive abilities include red maple, red oak, and white pine. Following disturbance, aspen and paper birch can demonstrate excellent productivity as pioneers. Herbaceous species characteristic of mesic, nutrient-rich sites occur sporadically on this habitat type. The shrub layer is moderately well developed in younger or early successional stands, but poorly represented in older stands.



**MAP 2.6 NORTH FORK PINES**





**Long Term Objectives**

Maintain a block of contiguous old forest dominated by pines and northern hardwoods. Allow the forest to develop structural, compositional and functional characteristics associated with old-growth forest. Assess opportunities to develop regeneration and maintenance of white pine in the future, using tools from the department’s Old Growth Handbook (WDNR 2006c). Protect ecological site values including water quality, hydrology, native flora, high-quality natural communities, and potential and known rare species habitats.

**Short Term Management Objectives**

- Develop old-growth characteristics, including large trees, abundant coarse woody debris and standing dead snags through natural processes.
- Provide opportunities for comparison with actively managed areas found elsewhere on the property.
- Maintain potential rare species habitats and high-quality natural communities.

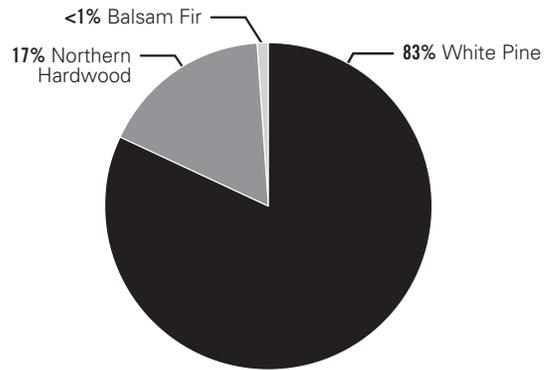
**Management Prescriptions**

- Active management is limited to clearing existing trails (material shall be left on site) and to maintain limited low impact public access providing opportunities for education, research and interpretation of the natural community. Salvage operations due to catastrophic wind, ice, fire, disease or insects may take place. Prior to salvage an interdisciplinary team will be consulted to determine if salvage operations or additional management could be considered with due deliberation regarding the original objectives of the area.
- Monitor this area within the next 10 years for the presence of additional rare or endangered species, as resources allow.
- Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy including a funding source if any species are found.
- Pesticide use shall be permitted for invasive species management.
- Harvest of fine woody material, as defined in the department’s Woody Biomass Harvesting Guidelines, is not authorized in this area.
- Existing wildlife openings will be naturally re-vegetated and no new wildlife openings will be created or maintained within this management area.

**State Natural Area Designation**

- The 87 acre North Fork Pines State Natural Area will overlay the entire management area.

**FIGURE 2.9 NORTH FORK PINES CURRENT LAND COVER**



**TABLE 2.11 NORTH FORK PINES CURRENT AND PREDICTED COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested Types</b>				
White Pine	72	83%	55	63%
Northern Hardwood	15	17%	17	20%
Balsam Fir	0	<1%	15	17%
<b>Total</b>	<b>87</b>	<b>100%</b>	<b>87</b>	<b>100%</b>





## AREA 9: OXBO PINES

### Overview and Summary of the Area

This 283-acre Native Community Management area features natural origin, pine-dominated Northern Dry-mesic Forest, an uncommon community in North Central Forest Ecological Landscape. The more mature forested areas have large-diameter white and red pine with spruce/fir component imbedded in the forest matrix. White and red pine maintenance and enhancement will be important in this area while protecting the wetlands, including the acid peatlands surrounding a small bog lake in the eastern portion of the area. This area will also provide opportunities for ecological and silvicultural demonstrations related to the pine resource through both active and passively managed stands. Two areas with mature white and red pine are designated as ecological reference areas for developing old-growth attributes through natural processes.

### Description of the Forest Resource

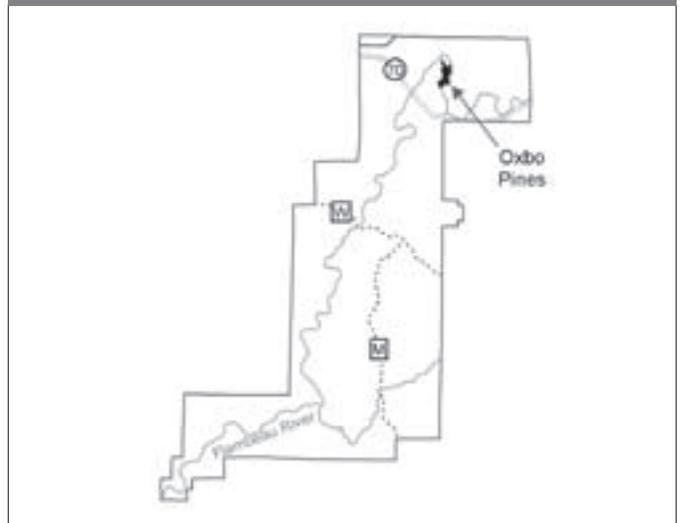
This native community management area is located within a sharp oxbow bend of the Flambeau River. Although it contains several natural communities and forest cover types, natural origin pine forest is the most notable ecological feature here. Although pine is abundant in this area on a broad scale, its coverage varies and is patchy across the site. There is a core area of approximately 95 acres dominated by mature (>100 years old with some trees 24"-30" dbh) Northern Dry-mesic Forest dominated by white pine with red pine, aspen, balsam fir, northern hardwoods, and white spruce as canopy associates. The white pine has good growth potential, although there are some signs of white pine tip weevil damage in parts of the area. Saplings include white pine, red maple, and balsam fir, although white pine regeneration is sparse in most areas. Two smaller (15-20 ac.) pine-dominated stands occur to the north and south of this core area. Much of the eastern half of the site has an unusual composition for the property and is comprised of tree and herb species associated with boreal forest. The forest here is dominated by pole to small sawtimber white birch with a strong component of large sawtimber sized white pine, and in some areas, dense pole-sized white pine, along with a patchy but sometimes heavy white spruce and balsam fir component. Balsam fir cover is particularly heavy near the site of a former cross-country ski trail. The white birch and aspen in this area are starting to deteriorate. Many areas of the site have a dense shrub layer of hazel.

Acid peatland communities are found here within low depressions and are dominated by 50-year-old black spruce and tamarack over a deep, continuous carpet of sphagnum mosses. These areas of Black Spruce Swamp contain several characteristic understory plants associated with peatland communities

### AREA 9 SUMMARY

- ▲ 283 acres
- ▲ One of the two best examples of natural origin mature pine forest on the property, this one being the drier of the two and containing several wetland communities and a small bog lake.
- ▲ Opportunity to develop two ecological reference areas with old-growth pine forest while using other parts of the site to practice alternative regeneration techniques for pine, along with managed old-growth techniques.
- ▲ The new Oxbo Pines State Natural Area (287 acres) will overlay a portion of the management area.

### AREA 9 LOCATOR MAP



and surround Oxbo Lake, a four-acre bog lake. Other lowland areas along the river are dominated by alder.

### Land Type Associations

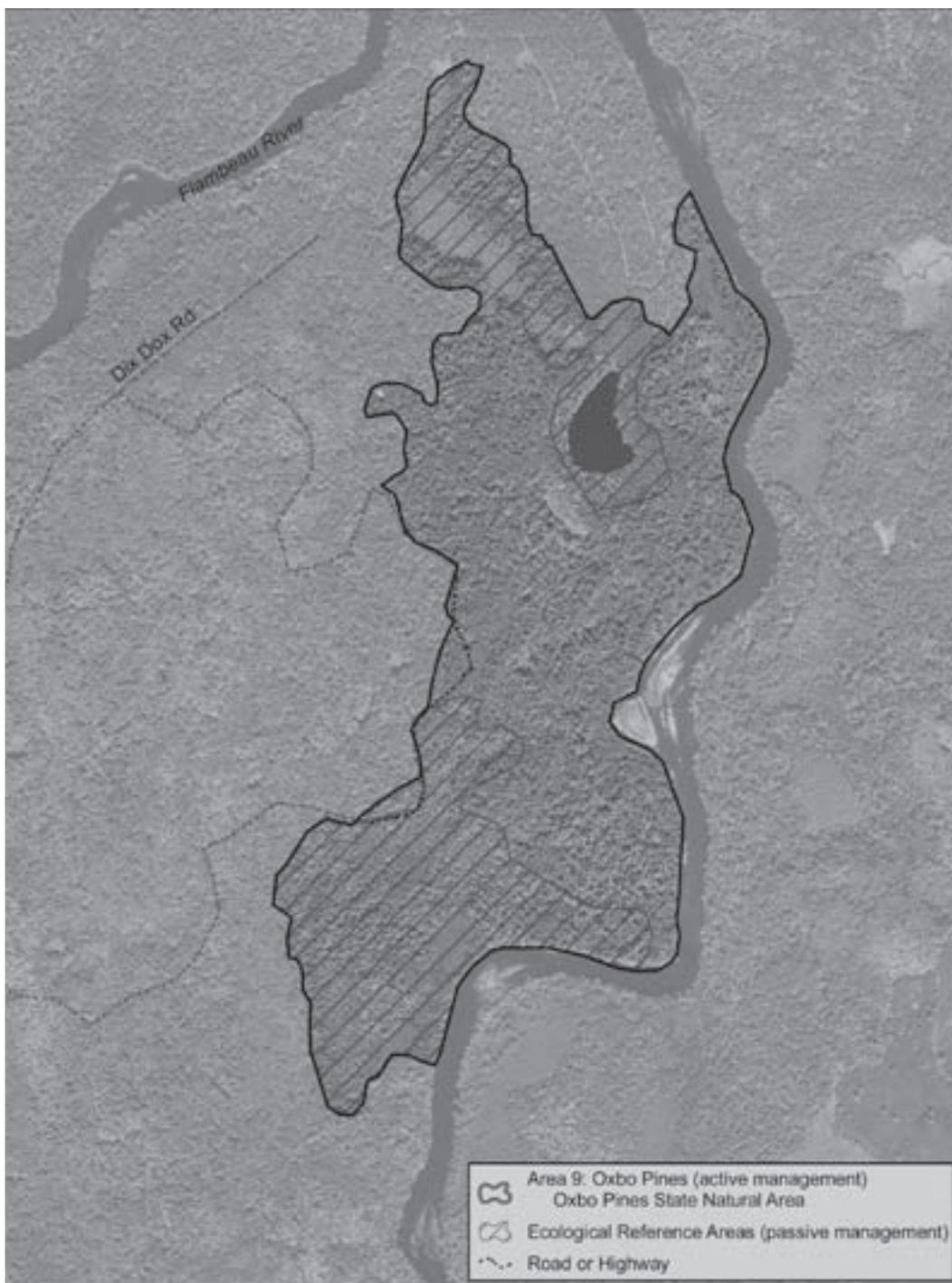
The land type association in this area is Exeland Plains (212Xd03). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. The majority of the FRSF falls under this land type association.

### Soils

The major soil map unit in this area is Pence sandy loam, a somewhat excessively drained soil with a very deep depth to a restrictive layer at more than 60 inches. Another soil type in the area is the Vilas-Lindquist complex which is excessively



MAP 2.7 OXBO PINES



FRSF309P  
March, 2010

Miles  
0 0.05 0.1 0.2  
Flambeau River State Forest  
Master Plan

The delineation of boundaries between all of the various land management classification is a general representation of those boundaries. More detailed delineation will be produced at the discretion of the department where authorized activities, management or improved on the ground information is available.





drained. The frequently flooded but moderately well drained Moppet-Fordum complex is located along the river. There is also a small amount of Loxley and Beseman muck in the wetlands that is very poorly drained.

**Habitat Types**

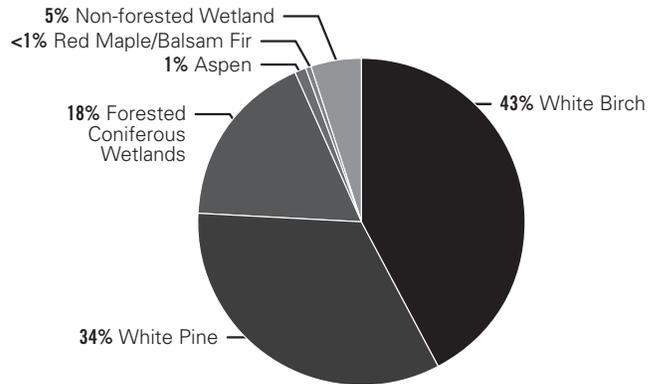
The primary habitat types within this area are PARV (White pine-Red maple/Blueberries), PARVAa (White Pine-Red maple/Blueberry-Wild sarsaparilla), and AVVb (Sugar maple/Blueberry-Maple-leaved viburnum).

PARV (White pine-Red maple/Blueberries) has a dry moisture regime and poor nutrient regime. This habitat type is not common on the forest and it is associated with sandy outwash soils. Red and white pine exhibit good growth potential and productivity. Timber productivity for red maple, red oak, white spruce, and balsam fir, is poor, although these species provide aesthetic and wildlife benefits. Bracken fern is typically the dominant herb, along with other dry and dry-mesic herb species. The shrub layer is usually well-developed with dense clumps common, including hazel.

PARVAa (White Pine-Red maple/Blueberry-Wild sarsaparilla) has a dry to dry-mesic moisture regime and poor to medium nutrient regime. This type is particularly suited for management of pines, because growth potential for these species is high and competition pressure from understory vegetation and shade tolerant hardwoods is relatively low. White pine is sufficiently shade-tolerant to regenerate in the understory of most communities that typically develop on this habitat type. Aspen and white birch could also be considered, depending on site goals. Historically, pure and mixed stands of pine were most prevalent with white pine being well represented. Bracken fern and large-leaved aster are typically the dominant herbs, and the shrub layer is often well-developed and dominated by beaked hazel.

AVVb (Sugar maple/Blueberry-Maple-leaved viburnum) has a dry-mesic moisture regime and a medium nutrient regime. This type was dominated by white and red pine in the pre-logging era and it is still common to see large charred stumps. Aspen, white birch, red oak and red maple appear to be well suited for this type. In the absence of disturbance, stands on this type are often gradually taken over by sugar maple, but this type is suboptimal for growth and yield of sugar maple. In some areas, white pine can be abundant in the understory where a seed source is present and conditions are favorable. Bracken fern and large-leaved aster are often the dominant herbs, and the shrub layer is typically diverse and well-developed.

**FIGURE 2.10 OXBO PINES CURRENT LAND COVER**



**TABLE 2.12 OXBO PINES CURRENT AND PREDICTED COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested Types</b>				
White Birch	121	43%	57	20%
White Pine	95	34%	74	26%
Forested Coniferous Wetland	50	18%	40	14%
Aspen	3	1%	3	1%
Red Maple/Balsam Fir	0	<1%	96	34%
<b>Non-forested Types</b>				
Non-forested Wetland	14	5%	14	5%
<b>Total</b>	<b>283</b>	<b>100%</b>	<b>283</b>	<b>100%</b>

Area also includes 4 acres of lakes/streams.

**Long Term Objectives**

Allow portions of the area to develop in structural, compositional and functional characteristics associated with old-growth forest, while providing opportunities to actively regenerate pine in other areas. Provide demonstration areas for using alternative techniques to regenerate white and red pine. Protect ecological site values including water quality, hydrology, native flora, high-quality natural communities, and potential and known rare species habitats. Protect and maintain the many wetland communities in this area such as Alder Thicket, and



Black Spruce Swamp / Northern Wet Forest that are interspersed throughout the forest matrix.

### Short Term Management Objectives

- Increase tree age throughout the area by passively managing two ecological reference areas of approximately 123 acres (and 4 acres of water) and using old forest-extended rotation techniques in some of the actively managed portions.
- Evaluate and attempt regeneration strategies for white pine in parts of the management area.
- Provide for education/demonstration of silviculture trials.
- Maintain potential rare species habitats and high-quality natural communities.
- Maintain existing red and white pine, cedar, and hemlock whenever possible.

### Management Prescriptions:

#### Entire Management Area (283 acres)

- Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy, including a funding source, if any species are found.
- Pesticide use is permitted throughout the management area for invasive species management.
- Monitor this area within the next 10 years for the presence of additional or endangered species, as resources allow.
- Existing wildlife openings will be naturally re-vegetated and no new wildlife openings will be created or maintained within this management area.
- Salvage operations due to catastrophic wind, ice, fire, disease or insects may take place. Prior to salvage an interdisciplinary team will be consulted to determine if salvage operations or additional management could be considered with due deliberation regarding the original objectives of the area.
- Harvest of fine woody material, as defined in the department's Woody Biomass Harvesting Guidelines, will not occur in this area.

### Management Prescriptions:

#### Ecological Reference Areas (123 acres)

- Passively manage the ecological reference areas except for invasive species management, allowing the stands to develop old growth characteristics such as large trees, standing snags, and abundant coarse woody debris.
- Monitor these sites; as this is an uncommon cover type on the forest, they provide opportunities for comparison with actively managed sites found elsewhere on the property.

### Management Prescriptions: Areas Outside of the Ecological Reference Areas (160 acres)

- Property staff and department biologists / ecologists, including staff from the State Natural Areas program will work together to plan and implement management.
- Manage smaller patches of white/red pine using techniques for regeneration harvest to achieve ecological objectives. Techniques include patch clear cuts, mechanical scarification, prescribed burning, or any combination of these treatments. Emphasis will be given to maintaining large-diameter pines wherever possible.
- Maintain a mix of deciduous and conifer forest types on appropriate sites, favoring pine but maintaining other species such as white birch for diversity. Consider underplanting white pine in portions of the white birch stands.
- Regenerate white pine through prescribed burning and/or mechanical techniques on smaller patches of white pine and compare to the passively managed ecological reference areas.

### State Natural Area Designation

- The Oxbo Pines State Natural Area (287 acres, including 4 acres of water) will overlay the entire management area.





## AREA 10: HANSON LAKE COMPLEX

### Overview and Summary of the Area

The Hanson Lake Complex Native Community Management Area encompasses a variety of open and forested wetland communities and several small, shallow, soft water seepage lakes and ponds with widely fluctuating shoreline habitats. Seepage lakes with fluctuating shorelines are uncommon to the landscape; these and several of the wetland habitats, have the potential to support rare species. The wetland features are embedded within the context of a diverse Northern Mesic Forest dominated mosaic. This matrix of open water, wetland and forested communities makes the area valuable for the preservation of hydrological and ecological features, rare species habitat, and providing scenic qualities.

### Description of the Forest Resource

The forested uplands cover approximately 64% of the site and are comprised mainly of Northern Mesic Forest dominated by sugar maple, basswood, ash, and yellow birch in various size classes. Large-diameter (and often over 100 years old) white pine and hemlock are found in some areas, especially near Hanson Lake. Herbaceous species in the uplands are characteristic of moderately rich sites. The forested wetlands are mostly Black Spruce Swamp, with black spruce covering about 26% of the area. Unforested wetlands include Northern Sedge Meadow, leatherleaf-dominated open bog, and smaller areas of Alder Thicket. Portions of the site, especially near the bog lake at the south end of the site, have experienced damage in recent windstorms.

### Land Type Association

The land type association in this area is Exeland Plains (212Xd03). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. This land type association comprises the majority of the FRSF.

### Soils

The dominant soil map unit on the uplands is the well drained Antigo silt loam. Pence, Annalake, Cublake, and Sayner soils make up small scattered amounts throughout the rest of the upland areas. Muck soils comprise the remainder of the area, namely Lupton and Cathro and Loxley and Beseman.

### Habitat Types

The primary habitat type for the uplands within this area is AOCa (Sugar maple/Sweet cicely-Blue cohosh). Habitat types have not yet been developed for forested wetlands.

### AREA 10 SUMMARY

- ▲ 336 acres
- ▲ Designed to protect water quality and maintain native wetland and aquatic communities within a forested mosaic
- ▲ Opportunity to use extended rotation forestry to maintain an older forest of longer-lived species on the uplands, including conifer types that are becoming less common on the landscape
- ▲ The new Hanson Lake Wetlands State Natural Area (302 acres) will overlay a portion of the management area

### AREA 10 LOCATOR MAP



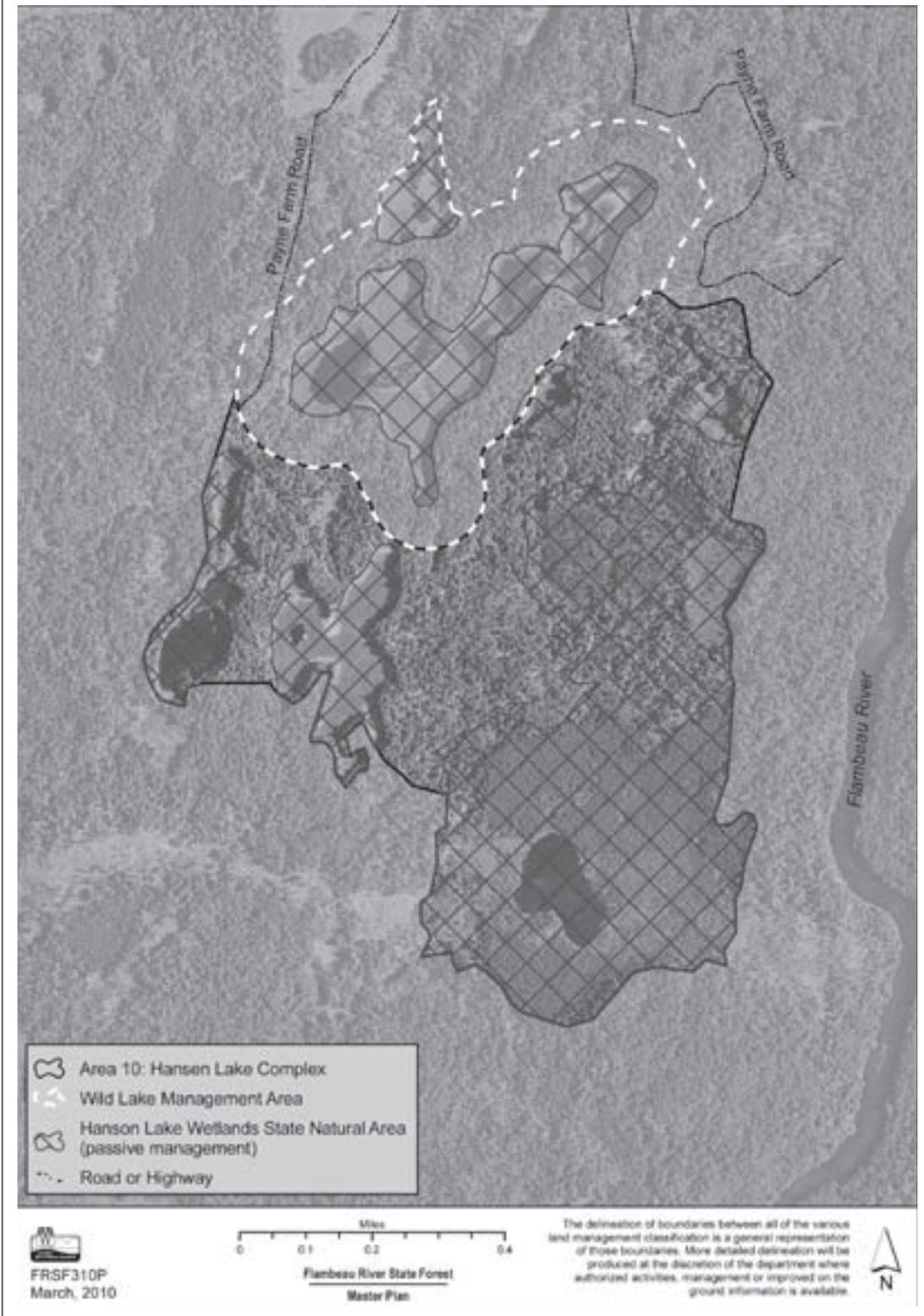
AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime with a rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages in this habitat type. The herb layer is often developed and species rich while the shrub layer is typically not well developed.

### Long Term Objectives

Protect and maintain the hydrology, water quality and scenic value of Hanson Lake and other aquatic features. Maintain a diverse mosaic of high-quality natural communities, including potential and known rare species habitats. Maintain contig-



MAP 2.8 HANSON LAKE COMPLEX





uous forest cover comprised mainly of longer-lived species connecting the diverse wetland and aquatic communities, unless precluded by natural disturbances and site limitations. The site will have structural attributes associated with old-growth forest such as large trees, standing snags, and abundant coarse woody debris.

**Short Term Management Objectives**

- Maintain the hydrology, aesthetic values, and water quality of the lakes, ponds, and wetlands.
- Establish and maintain ecological reference areas totaling 211 acres around the area’s wetlands.
- Use extended rotation management to maintain an older forest of longer-lived species on the uplands, including conifer types where possible.

**Management Prescriptions:**

**Entire Management Area (336 acres)**

- Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy, including a funding source, if any species are found.
- Pesticide use is permitted throughout the management area for invasive species management.
- Monitor this area within the next 10 years for the presence of additional or endangered species, as resources allow.
- Harvest of fine woody material, as defined in the department’s Woody Biomass Harvesting Guidelines, is not authorized in this area.
- Existing wildlife openings will be naturally re-vegetated and no new wildlife openings will be created or maintained within this management area.
- Intensive use is not encouraged, although currently established, non-motorized trails may be maintained.

**Management Prescriptions:**

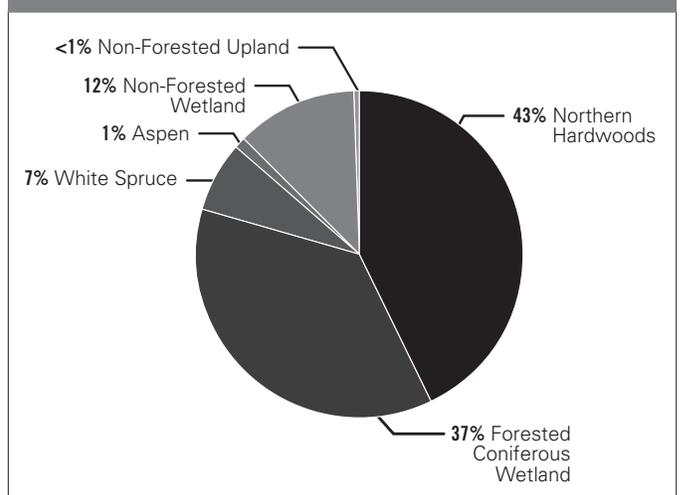
**Ecological Reference Areas (211 acres)**

- Active management is limited to clearing existing trails (material shall be left on site) and to maintain limited low impact public access providing opportunities for education, research and interpretation of this natural community. Salvage operations due to catastrophic wind, fire, disease or insects may take place. Prior to salvage an interdisciplinary team will be constructed to determine if salvage operations or additional management could be considered with due deliberation regarding the original objectives of the area.

**Management Prescriptions: Outside of Ecological Reference Areas (125 acres)**

- Retain red and white pine, cedar, and hemlock whenever possible.

**FIGURE 2.11 HANSON LAKE COMPLEX CURRENT LAND COVER**



**TABLE 2.13 HANSON LAKE COMPLEX CURRENT AND PREDICTED COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested Types</b>				
Northern Hardwoods	146	43%	144	43%
Forested Coniferous Wetland	123	37%	124	37%
White Spruce	22	7%	24	7%
Aspen	4	1%	3	1%
<b>Non-forested Types</b>				
Non-forested Wetland	40	12%	40	12%
Non-forested Upland	1	<1%	0	<1%
<b>Total</b>	<b>336</b>	<b>100%</b>	<b>335</b>	<b>100%</b>

Area also includes a 27 acre lake.

- Retain numerous standing dead snags and coarse woody habitat in both the uplands and forested wetlands.
- Manage stands isolated by wetlands only under frozen conditions.
- Use old forest-extended rotation management wherever possible, with special emphasis on safeguarding the area’s wetland characteristics and water quality.
- Salvage operations due to catastrophic wind, ice, fire, disease or insects may take place. Prior to salvage an interdisciplinary team will be consulted to determine if



salvage operations or additional management could be considered with due deliberation regarding the original objectives of the area.

- Maintain access for management purposes only. Gates will be maintained or placed to limit access on existing logging roads.

#### State Natural Area Designation

- The Hanson Lake Wetlands State Natural Area (302 acres) will overlay the ecological reference areas, covering 211 acres of this management area (and 27 acres of water).

The remainder of this state natural area occurs within the Hanson Lake portion of Area 20.





## AREA 11: SWAMP LAKE FOREST

### Overview and Summary of the Area

Located along the east central boundary of the Forest, this area features mature upland forest adjoining the Swamp Lake portion of Area 20 (Wild and Wilderness Lakes). The area also contains several forested wetland types and an extensive block of hemlock-hardwood forest, making this one of the best opportunities on the property to develop a hemlock-dominated Northern Mesic Forest with old-growth characteristics. State Threatened birds have been documented in the forested areas, and a rare plant is known from the open wetlands. The area connects to the Bass Lake Muskeg management area to the southeast.

### Description of the Forest Resource

The majority of the acreage is forested. The uplands are dominated by Northern Mesic Forest, both hemlock and hardwood dominated types. A stand of mature hemlock-dominated forest occurs east of Swamp Lake, comprising approximately 20% of the area; this is the largest known hemlock stand on the property and is likely one of the larger blocks in the local landscape. Hemlock, yellow birch and sugar maple are the dominant tree species and diameters commonly range from 20 to 30 inches. The remaining forested uplands are dominated by northern hardwoods, ranging from pole sized to large sawtimber sized sugar maple. These stands are located both within and adjacent to the large block of hemlock-hardwoods. Small pockets with Ephemeral Ponds are scattered in the area, and there are places with abundant tip-ups and coarse woody debris.

Northern Hardwood Swamp, dominated by black ash and sometimes containing cedar, covers approximately 12% of the area with ponds and rivulets in some areas. The swamp hardwoods are mostly pole sized and average 100 years old. Cedar and tamarack stands are scattered throughout the wetlands. The cedar is well stocked, mostly pole or small saw size, and close to 150 years old with poor growth potential. Forested peatlands, dominated by Black Spruce Swamp with smaller amounts of tamarack and cedar dominated forest, cover approximately 15% of this site. The black spruce is pole size and smaller with an average age of 80 years old and contains characteristic peatland plant species. Additional black spruce / tamarack forest with scattered cedars continues west of the Swamp Lake (in Area 20) and harbors at least one rare plant species. More open wetland communities such as Muskeg, Open Bog and Poor Fen comprise roughly 6% of the site.

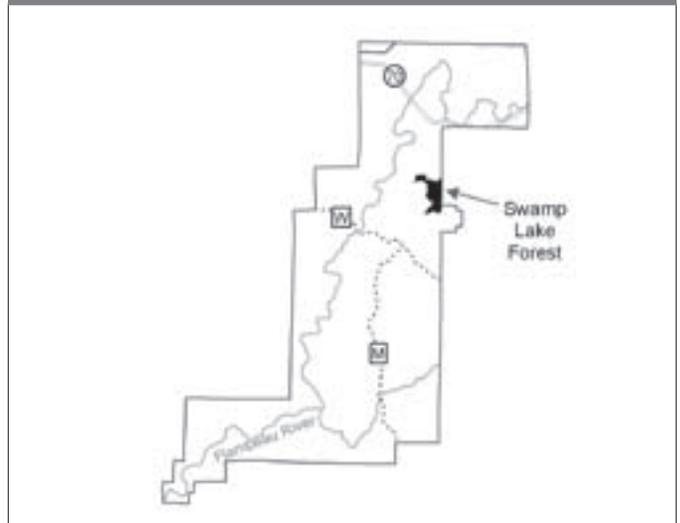
### Land Type Associations

The land type association in this area is Exeland Plains (212Xd03). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly

### AREA 11 SUMMARY

- ▲ 752 acres
- ▲ Designed to develop and maintain a significant block of old-growth hemlock hardwood forest while protecting native wetland and aquatic communities
- ▲ Opportunity to manage at a landscape level within a mosaic of hemlock-hardwood dominated uplands with old-forest attributes, along with forested and open wetlands
- ▲ Management objectives closely coordinated with Area 20
- ▲ The new Swamp Lake State Natural Area (1,042 acres) will overlay portions of both this area and Area 20.

### AREA 11 LOCATOR MAP



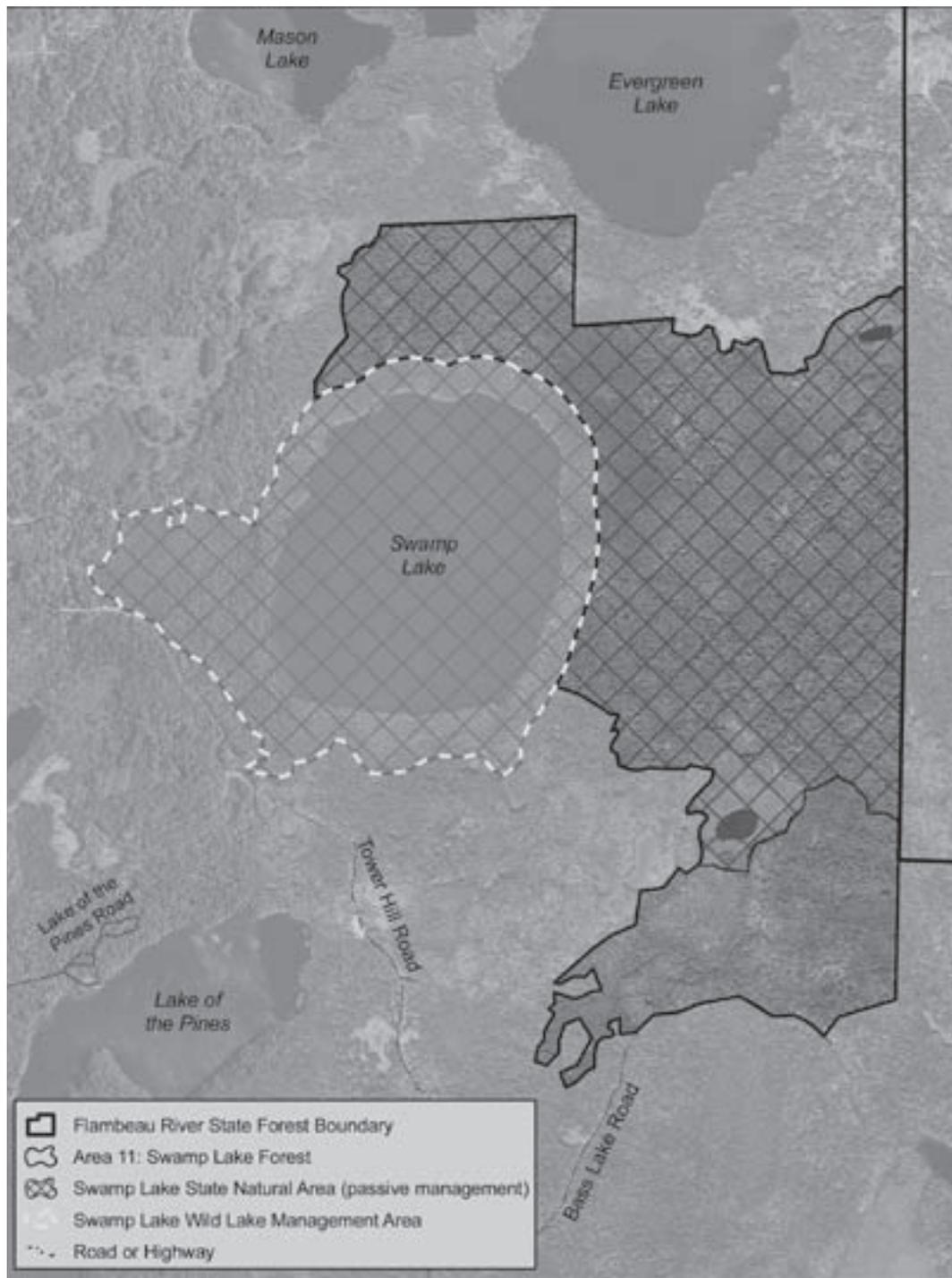
well drained silt loam over outwash. This land type association comprises the majority of the FRSF.

### Soils

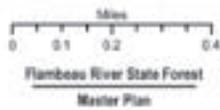
Almost half of the soils in this management area are classified as Loxley and Beseman soils - very poorly drained organic soils, with thick organic layers (16" - 51" and deeper). These soils underlie virtually all of the forested wetlands, along with a few small stands classified as northern hardwoods. The next most prevalent soils are Sconsin silt loams, moderately well drained soils that underlie the major hemlock-dominated portions of the management area. Two well drained soils, Antigo silt loam and Padus silt loam, each comprise approximately 5% of the area, underlying areas of northern hardwoods and hardwoods with



MAP 2.9 SWAMP LAKE FOREST



  
 FRSF311P  
 March, 2010



The delineation of boundaries between all of the various land management classification is a general representation of those boundaries. More detailed delineation will be produced at the discretion of the department where authorized activities, management or improved on the ground information is available.





brushy openings, respectively. Several other soil map units are scattered throughout the area, each comprising 4% or less of the management area. The depth to the restrictive feature for the Sconsin soil is 20-38" making this soil type prone to wind damage. The depth to the restrictive feature for the other soils ranges from 40" to over 60".

**Habitat Types**

The muck soils do not have habitat types associated with them at this time. Habitat types are currently being developed. The primary habitat type on the uplands within this area is AOCa (Sugar maple/Sweet cicely-Blue cohosh).

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime with a rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages in this habitat type. The herb layer is often developed and species rich while the shrub layer is typically not well developed.

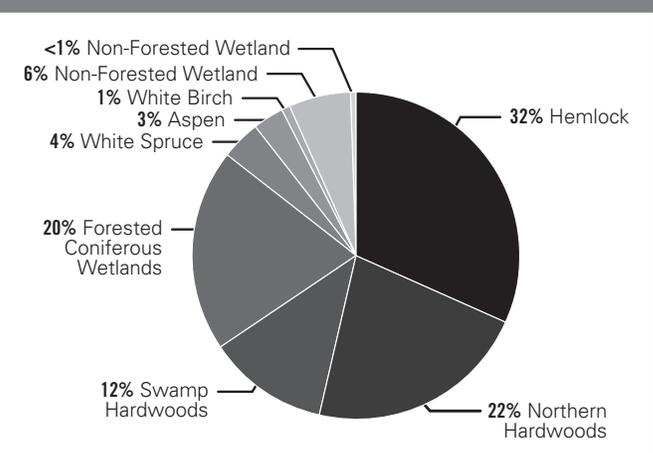
**Long Term Objectives**

Maintain a contiguous block of mature and old-growth Northern Mesic Forest that includes a matrix of upland and wetland types, including conifers. Maintain forest structural diversity, increasing the dominance of longer-lived trees, and develop characteristics associated with old growth including large trees grown to biological maturity and abundant snags and downed coarse woody debris. Protect ecological site values including water quality, hydrology, native flora, high-quality natural communities, and rare species habitats. Provide opportunities for research, education, and interpretation, as well as opportunities for visitors to experience an old-growth forest.

**Short Term Management Objectives**

- Establish and maintain a 582 acre (and 5 acres of water) ecological reference area.
- Passively manage the Ecological Reference Area comprising the large stand of hemlock-hardwood forest east of Swamp Lake.
- Develop old-growth attributes on the uplands outside of the ecological reference area using old forest - extended rotation techniques emphasizing the retention of large trees, coarse woody debris and standing dead snags. Encourage hemlock, yellow birch and white pine where possible.
- Monitor hemlock stands for growth and regeneration levels.
- Maintain a mosaic of high-quality wetland communities and forested uplands considering ecological connections to both Area 20 and Area 12.

**FIGURE 2.12 SWAMP LAKE FOREST CURRENT LAND COVER**



**TABLE 2.14 SWAMP LAKE FOREST CURRENT AND PREDICTED COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested Types</b>				
Hemlock	239	32%	218	29%
Northern Hardwoods	163	22%	188	25%
Swamp Hardwoods	89	12%	113	15%
Forested Coniferous Wetlands	151	20%	158	21%
White Spruce	32	4%	30	4%
Aspen	25	3%	0	<1%
White Birch	8	1%	0	<1%
<b>Non-forested Types</b>				
Non-forested Wetland	44	6%	45	6%
Non-forested Upland	1	<1%	0	<1%
<b>Total</b>	<b>752</b>	<b>100%</b>	<b>752</b>	<b>100%</b>



### Management Prescriptions:

#### Entire Management Area (752 acres)

- Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy, including a funding source, if any species are found.
- Pesticide use is permitted throughout the management area for invasive species management.
- Monitor this area within the next 10 years for the presence of additional or endangered species, as resources allow.
- Harvest of fine woody material, as defined in the department's Woody Biomass Harvesting Guidelines, is not authorized in this area.
- Existing wildlife openings will be naturally re-vegetated and no new wildlife openings will be created or maintained within this management area.
- New recreational features shall not be developed in this management area.

### Management Prescriptions:

#### Ecological Reference Area (582 acres)

- Active management is limited to clearing existing trails (material shall be left on site) and to maintain limited low impact public access providing opportunities for education, research and interpretation of this natural community. Salvage operations due to catastrophic wind, fire, disease or insects may take place. Prior to salvage an interdisciplinary team will be constructed to determine if salvage operations or additional management could be considered with due deliberation regarding the original objectives of the area.

### Management Prescriptions: Outside of Ecological Reference Area (170 acres)

- Use old forest-extended rotation management wherever possible, with special emphasis on safeguarding the area's wetland characteristics and water quality.
- Protect natural white pine, red pine, cedar, and hemlock regeneration.
- Encourage development of conifer tree species in upland forest outside of the ecological reference area where advantageous and consistent with area objectives.
- If hemlock regeneration trials are attempted, conduct them outside of the ecological reference area to the south (e.g., stands 12 and 17 Compartment 101).
- Retain numerous standing dead snags and coarse woody habitat in both the uplands and forested wetlands.
- Salvage operations due to catastrophic wind, ice, fire, disease or insects may take place. Prior to salvage an interdisciplinary team will be consulted to determine if salvage operations or additional management could be considered with due deliberation regarding the original objectives of the area.

### State Natural Area Designation

- The Swamp Lake State Natural Area (1,042 acres) will overlay the ecological reference area, covering 582 acres of this management area (and 5 acres of water). The remainder of this state natural area will comprise the Swamp Lake portion of Area 20.





## AREA 12: BASS LAKE FOREST AND MUSKEG

### Overview and Summary of the Area

This site features a large complex of high quality peatlands connected to an undeveloped Wilderness Lake (see Bass Lake portion of Area 20). The wetlands are extensive, surrounding portions of the lake and extending south for several miles. There are excellent examples of several native peatland community types including Muskeg, Open Bog and Poor Fen. At least two rare plants inhabit the wetlands. Small areas of northern hardwoods connect to larger forested areas in Area 20 dominated by rich northern hardwood, hemlock, and white pine surrounding the Bass Lake. This management area also connects to the Swamp Lake Native Community Management Area to the northwest, furthering its value as a landscape-level management opportunity.

### Description of the Forest Resource

Black Spruce Swamp and Muskeg cover almost all of the management area. Sapling to pole sized black spruce and tamarack averaging 90-100 years old dominate much of these areas. Growth potential for both species is poor in this area. The remaining wetlands are a combination of Open Bog, Poor Fen, and less dense Muskeg containing stunted black spruce and tamarack with a sedge-dominated herb layer and sphagnum groundlayer. These forested and open peatland communities form a complex extending for three miles from Pot Lake (outside of the state forest) south to CTH W. Two additional wetland blocks are located on the south side of CTH W. The wetland itself extends outside of the both the native community management area and the property boundary. Uplands comprise a very small portion of the area and are primarily small, moderately rich stands of Northern Mesic Forest.

### Land Type Associations

The land type association in this area is Exeland Plains (212Xd03). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. This land type association comprises the majority of the FRSF.

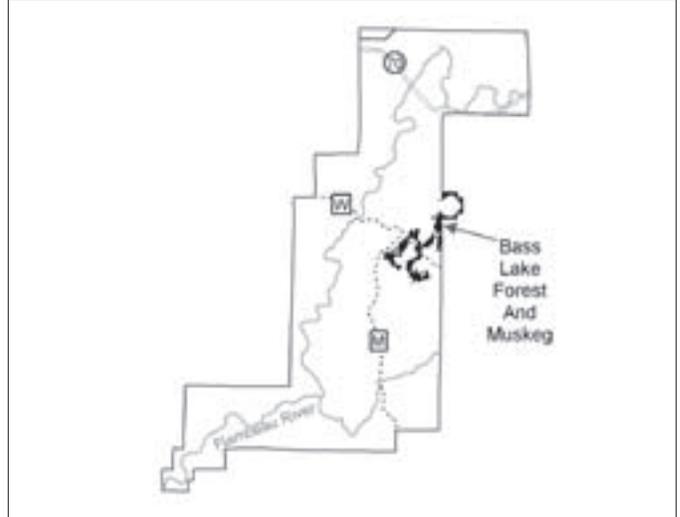
### Soils

Almost all of the management area, including virtually all of the peatland types, is underlain by very poorly drained organic soils classified as Loxley and Beseman soils. These soils are typically associated with depressions from moraines, outwash plains, or lake plains.

### AREA 12 SUMMARY

- ▲ 1,485 acres
- ▲ Very large expanse of acid peatlands that connects to a Wilderness Lake (Area 20); management objectives are closely coordinated between the two areas.
- ▲ Opportunity to protect hydrology and continue to provide rare species habitat
- ▲ The new Bass Lake Peatlands State Natural Area (742 acres) will overlay portions of both this management area and Area 20

### AREA 12 LOCATOR MAP



There is also a small amount of Lupton and Cathro mucks in this area. The depth to a restrictive feature for these mucks is very deep at over 60". The uplands around Bass Lake are on Sconsin silt loam or Antigo silt loam. These soils are well drained. The depth to the restrictive feature for the Sconsin soil is 20-38" making this soil type prone to wind damage. The depth to the restrictive feature for the Antigo soil is very deep at over 60".

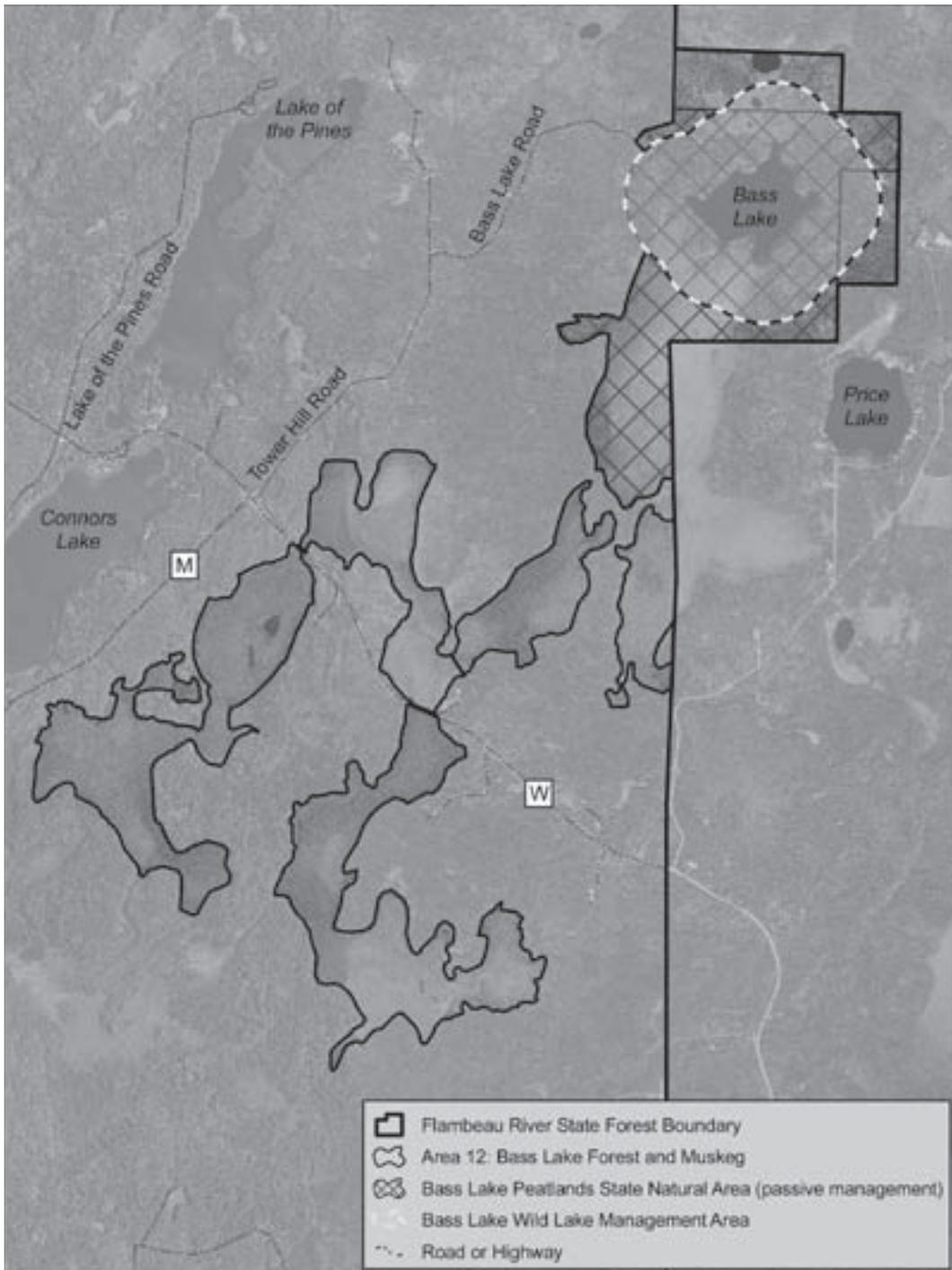
### Habitat Types

The muck soils do not have habitat types associated with them at this time. The primary habitat type on the uplands within this area is AOCa (Sugar maple/Sweet cicely-Blue cohosh).

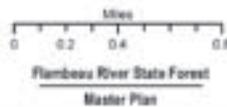
AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime with a rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment



**MAP 2.10 BASS LAKE FOREST AND MUSKEG**



FRSF312P  
March, 2010



The delineation of boundaries between all of the various land management classification is a general representation of those boundaries. More detailed delineation will be produced at the discretion of the department where authorized activities, management or improved on the ground information is available.





opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages in this habitat type. The herb layer is often developed and species rich while the shrub layer is typically not well developed.

**Long Term Objectives**

Maintain a high quality complex of native peatland communities. Protect ecological site values including water quality, hydrology, native flora, high-quality natural communities, and potential and known rare species habitats. Hydrologic function is critical in regulating these communities, so hydrology should be protected and restored where possible. Provide opportunities for research, education and ecological interpretation and low-impact uses such as hiking, bird-watching, photography, and nature study. The uplands are part of a more extensive forest in Area 20; in these portions of the area, maintain a contiguous block of mature forest and develop characteristics associated with old growth including large trees grown to biological maturity with abundant snags and downed coarse woody debris.

**Short Term Management Objectives**

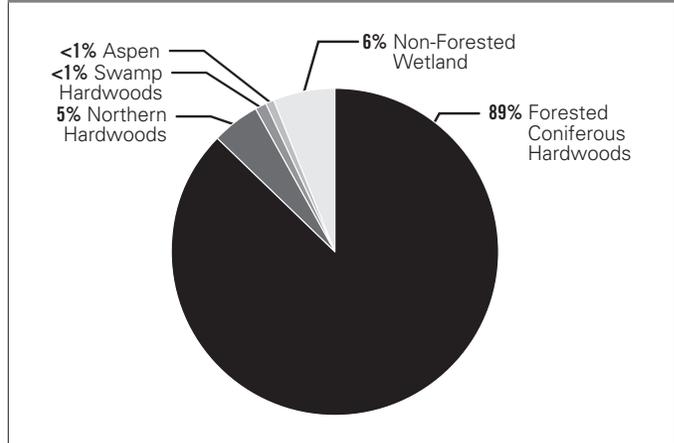
- Protect and maintain rare species habitats and high quality natural communities.
- Passively manage this area, allowing natural development of old-growth characteristics, including large trees, abundant coarse woody debris and standing dead snags in the uplands.

**Management Prescriptions:**

**Entire Management Area (1,485 acres)**

- Passively manage this site. Active management is limited to clearing existing trails (material shall be left on site) and to maintain limited low impact public access providing opportunities for education, research and interpretation of this natural community. Salvage operations due to catastrophic wind, ice, fire, disease or insects may take place. Prior to salvage an interdisciplinary team will be constructed to determine if salvage operations or additional management could be considered with due deliberation regarding the original objectives of the area.
- Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy, including a funding source, if any species are found.
- Pesticide use is permitted throughout the management area for invasive species management.
- Monitor this area within the next 10 years for the presence of additional or endangered species, as resources allow.
- Harvest of fine woody material, as defined in the department’s Woody Biomass Harvesting Guidelines, is not allowed in this area.

**FIGURE 2.13 BASS LAKE FOREST AND MUSKEG CURRENT LAND COVER**



**TABLE 2.15 BASS LAKE FOREST AND MUSKEG CURRENT AND PREDICTED COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested Types</b>				
Forested Coniferous Wetlands	1,320	89%	1,322	89
Northern Hardwoods	74	5%	74	5%
Swamp Hardwoods	5	<1%	0	<1%
Aspen	2	<1%	0	<1%
<b>Non-forested Types</b>				
Non-forested Wetland	84	6%	89	6%
<b>Total</b>	<b>1,485</b>	<b>100%</b>	<b>1,485</b>	<b>100%</b>

Area also includes 130 acres of inholdings and 5 acres of ROW.



- Existing wildlife openings will be naturally re-vegetated and no new wildlife openings will be created or maintained within this management area.
- Existing recreational trails shall be allowed.
- Maintain limited low impact public access to Bass Lake and provide opportunities for education and interpretation of the native community.

**State Natural Area Designation**

- The Bass Lake Peatlands Natural Area (743 acres) will overlay the large northernmost portion of the peatland, covering 301 acres of this management area. The remainder of this state natural area will comprise the Bass Lake Wilderness portion of Area 20.





## AREA 13: HACKETT CREEK WATERSHED

### Overview

Located in one of the more remote and roadless locations of the FRSF, this area has a number of ecologically significant qualities. This area includes the headwaters of the Hackett Creek and its entire watershed and consists largely of wetland community types. Hackett Creek itself is a Class A coldwater stream and is classified by the Wisconsin DNR Water Quality Standards Program as an "Exceptional Resource Water." The wetlands include some areas with a significant cedar component, an uncommon forest type on the FRSF with the potential to support rare species. A small bog lake and its surrounding forest harbors at least one species of rare plant. As this area is designed to protect hydrology and maintain high-quality wetland communities, it will be important to consider wetland impacts when managing the adjoining uplands.

### Description of the Forest Resource

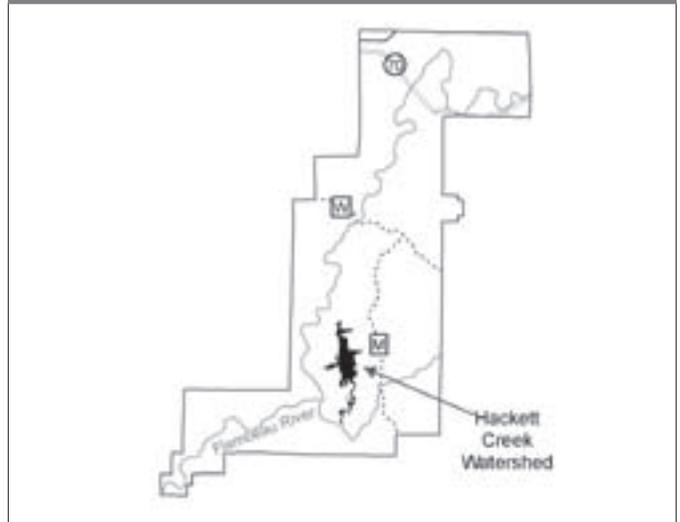
Wetlands comprise the majority of this area in both forested and non-forested natural community types. Northern Hardwood Swamp makes up almost one-quarter of the area, with mostly sapling to pole-sized trees in stands ranging from 30 to 110 years old, often lacking regeneration. Other forested wetlands cover 31% of this area, including roughly equal proportions of Black Spruce Swamp, Tamarack (poor) Swamp, Northern Wet-mesic Forest (cedar swamp), and other wet forests dominated by balsam fir. The Black Spruce Swamps are dominated by pole-sized trees that range from 64-130 years old; notable examples of the type include a fairly extensive "arm" on the western portion of the site and another portion surrounding a small bog lake in an area known to harbor an endangered plant. The tamarack is pole and small saw size, ranging between 63-122 years old with swamp hardwoods as a common secondary cover type. The Northern Wet-mesic Forest is dominated by cedar in various size classes, often with a continuous layer of Sphagnum and interspersed with tamarack and ash. In some places large-diameter (e.g., 18") cedars are present that average close to 140 years old. Areas dominated by balsam fir are primarily under 5" diameter and between 30-65 years old. Approximately one-third of the management area is comprised of unforested wetlands, including Alder Thicket and bluejoint-dominated Northern Sedge Meadow, primarily located along Hackett Creek and associated tributaries.

Uplands comprise only 18% of the management area, the majority forested in aspen, hemlock, northern hardwoods, and white spruce. Thirty-one year old aspen stands are located in small patches near the center of the site. Hemlock is concentrated in only a couple of small patches where trees are 5-15" in diameter and over 120 years in age. Mature, super-canopy

### AREA 13 SUMMARY

- ▲ 1,289 acres
- ▲ Surrounds the entire watershed of a high-quality stream, including several wetland types
- ▲ Designed to protect water quality and maintain native wetland and aquatic communities, as well as rare species habitat

### AREA 13 LOCATOR MAP



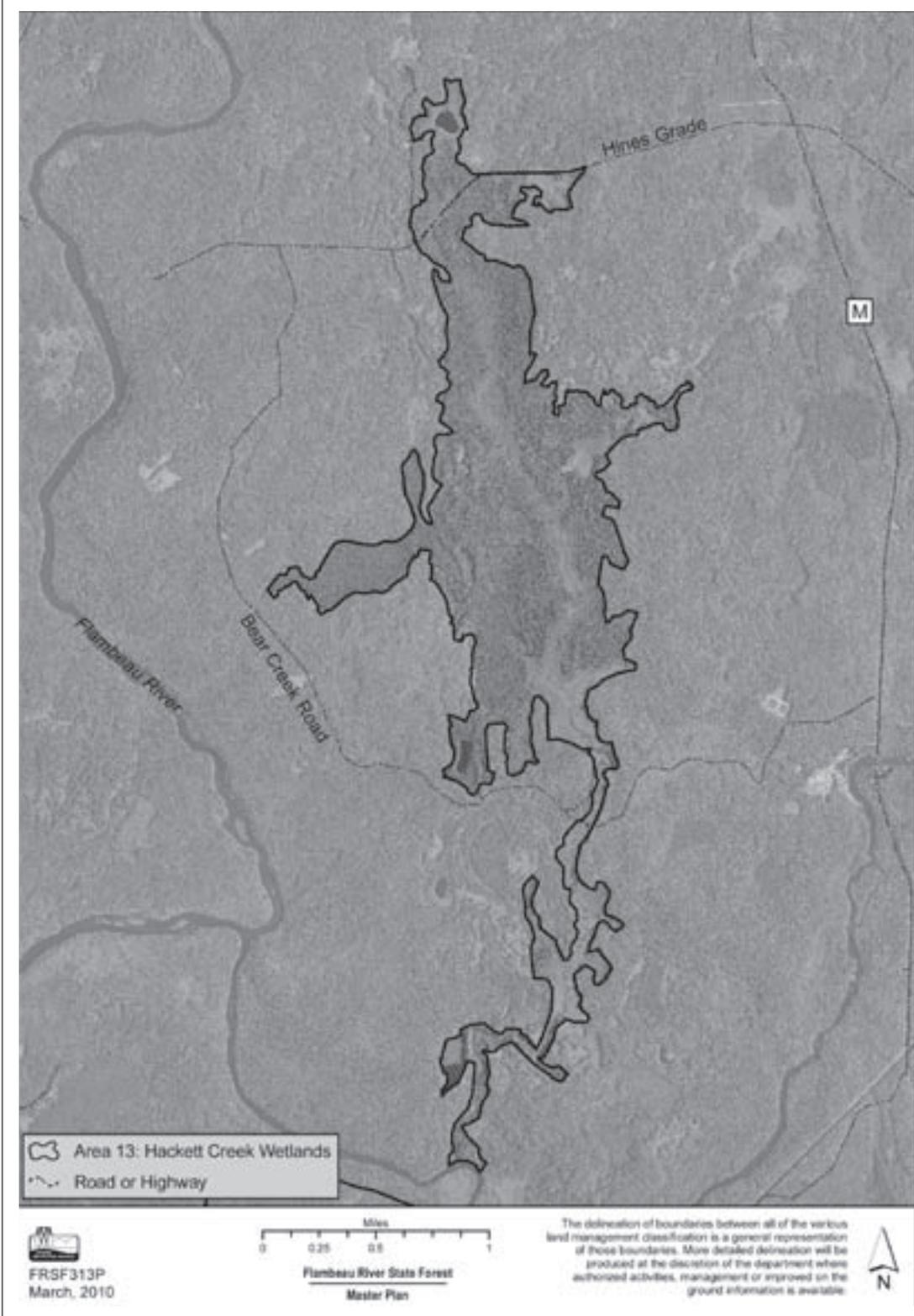
white pine occurs in some areas. Northern Mesic Forest covers approximately two-percent of the area, mostly in one small patch near the center of the site, and is dominated by mature sugar maple, basswood, and occasional hemlock and yellow birch. The groundlayer is sparse in much of the uplands, but there are pockets with herbs associated with richer habitats.

### Land Type Associations

The land type association in this area is Exeland Plains (212Xd03). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. This land type association comprises the majority of the FRSF.



MAP 2.11 HACKETT CREEK WETLANDS





**Soils**

The majority of the soils in this management area are either hydric or poorly drained. Moderately well drained to excessively drained soils make up only 14% of the area. Over half of the soils in this area are the Lupton and Cathro soil map units. These soils are very deep, poorly drained mucks with over 51" of herbaceous and woody organic material that can be found in depressions on moraines, outwash plains, and lake plains. Minocqua muck makes up the next most extensive (13%) map unit in this area. It is found in depressions and drainage ways on outwash plains and stream terraces. The Bowstring muck runs along Hackett Creek in the southern half of this area. This poorly drained muck can be found in overflow channels and depressions on flood plains. There is a small amount of the Moppet-Fordum complex located where Hackett Creek flows into the Flambeau River. This complex is occasionally to frequently flooded but moderately well drained. The soil map units comprising the majority of the uplands are Pence sandy loam and Manitowish sandy loam, which are somewhat excessively drained and moderately well drained, respectively

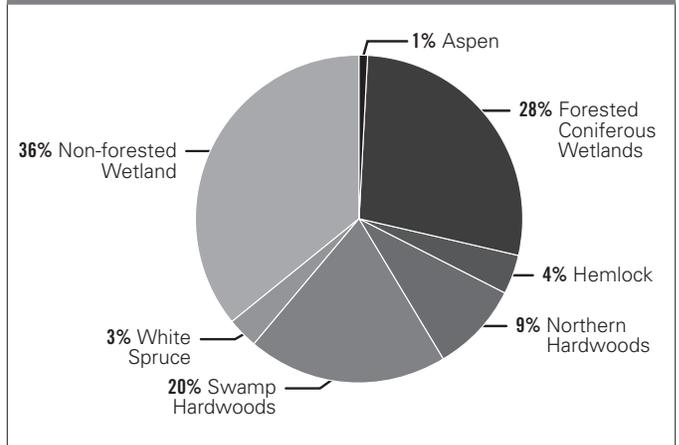
**Habitat Types**

Habitat types have not been developed for the forested lowland types comprising most of this management area. The habitat types on the uplands are ATM (Sugar maple-Eastern hemlock/Wild-lily-of-the-valley), PARVAa (White Pine-Red maple/Blueberry-Wild sarsaparilla), and AVVb (Sugar maple/Blueberry-Maple-leaved viburnum).

ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley) has a mesic moisture regime with a medium nutrient regime. Trees exhibiting good to excellent productive and competitive potential include sugar maple, basswood, white ash, yellow birch, and hemlock. Others demonstrating excellent productivity but limited competitive abilities include red maple, red oak, and white pine. Following disturbance, aspen and paper birch can demonstrate excellent productivity as pioneers. Herbaceous species characteristic of mesic, nutrient-rich sites occur sporadically on this habitat type. The shrub layer is moderately well developed in younger or early successional stands, but poorly represented in older stands.

PARVAa (White Pine-Red maple/Blueberry-Wild sarsaparilla) has a dry to dry-mesic moisture regime and poor to medium nutrient regime. This type is particularly suited for management of pines, because growth potential for these species is high and competition pressure from understory vegetation and shade tolerant hardwoods is relatively low. White pine is sufficiently shade-tolerant to regenerate in the understory of most communities that typically develop on this habitat type. Aspen and white birch could also be considered, depending on site goals. Historically, pure and mixed stands of pine were most

**FIGURE 2.14 HACKETT CREEK WETLANDS CURRENT LAND COVER**



**TABLE 2.16 HACKETT CREEK WETLANDS CURRENT AND PREDICTED COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested Types</b>				
Aspen	14	1%	13	1%
Forested Coniferous Wetlands	358	28%	374	29%
Hemlock	51	4%	39	3%
Northern Hardwoods	113	9%	142	11%
Swamp Hardwoods	257	20%	232	18%
White Spruce	34	3%	26	2%
<b>Non-forested Types</b>				
Non-forested Wetland	462	36%	464	36%
<b>Total</b>	<b>1,289</b>	<b>100%</b>	<b>1,289</b>	<b>100%</b>

Area also includes 16 acres of water.

prevalent with white pine being well represented. Bracken fern and large-leaved aster are typically the dominant herbs, and the shrub layer is often well-developed and dominated by beaked hazel.

AVVb (Sugar maple/Blueberry-Maple-leaved viburnum) has a dry-mesic moisture regime and a medium nutrient regime. This type was dominated by white and red pine in the pre-logging era and it is still common to see large charred stumps. Aspen, white birch, red oak and red maple appear to be well suited for



this type. In the absence of disturbance, stands on this type are often gradually taken over by sugar maple, but this type is suboptimal for growth and yield of sugar maple. In some areas, white pine can be abundant in the understory where a seed source is present and conditions are favorable. Bracken fern and large-leaved aster are typically the dominant herbs, and the shrub layer is typically diverse and well-developed.

### Long Term Objectives

Maintain a high quality complex of native wetland communities including areas that support older white cedar, black spruce, tamarack and swamp hardwoods. Protect ecological site values including water quality, hydrology, native flora, high-quality natural communities, and potential and known rare species habitats. Limit development in area and along water bodies to existing roads. Maintain the uplands in longer-lived species, unless precluded by natural disturbances and limitations. Hydrologic function is critical in regulating these communities, so hydrology should be protected and restored where possible. Provide opportunities for research, education and ecological interpretation and low-impact uses such as hiking, bird-watching, photography, and nature study.

### Short Term Management Objectives

- Increase age structure through old forest-extended rotation management in the forested uplands, favoring longer-lived species.
- Maintain potential and known rare species habitats and high-quality natural communities.

### Management Prescriptions

- Actively manage the upland forests using old forest-extended rotation. Attempt to convert aspen stands to longer-lived species. Passively manage all other areas.
- Protect natural white pine, cedar, and hemlock regeneration.
- Encourage development of conifer tree species where advantageous and consistent with area objectives.
- Protect significant areas from hydrological changes from road construction and development.
- Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy, including a funding source, if any species are found.
- Pesticide use is permitted for invasive species management.
- Harvest of fine woody material, as defined in the department's Woody Biomass Harvesting Guidelines, is not allowed in this area.
- Monitor this area within the next 10 years for the presence of additional rare species, as resources allow.
- Existing wildlife openings will be naturally re-vegetated and no new wildlife openings will be created or maintained within this management area.
- Salvage operations due to catastrophic wind, ice, fire, disease or insects may take place. Prior to salvage an interdisciplinary team will be consulted to determine if salvage operations or additional management could be considered with due deliberation regarding the original objectives of the area.





## AREA 14: FLAMBEAU FORKS INTERIOR FOREST

### Overview and Summary of the Area

This large block of rich, mature, maple-basswood dominated Northern Mesic Forest has numerous ecologically significant features and will be managed on a broad scale using three complimentary strategies. Several places have partially impeded drainage supporting highly productive and ecologically-important community variants. The southern portion of the site near Skinner Creek exhibits the richest spring flora known from the FRSF, with many species at or near their northern range limits; this is the best example of this type known from any of Wisconsin's state forests. Unique microhabitats are present, including Ephemeral Ponds and Forested Seeps. Much of the site features mature forest with large trees and some patches approaching old-growth. Louisiana Waterthrush, a rare forest interior songbird, occurs here at the extreme northern limits of its breeding range, and there is potential for other rare species. Topography is diverse in the southeastern portion of the site, enhancing habitat diversity. Forest Management strategies here include two passively managed ecological reference areas (228 acres) and a site dedicated to restoration-focused research (514 acres). The remainder of the site (616 acres) will be managed using extended rotation silvicultural techniques.

### Description of the Forest Resource

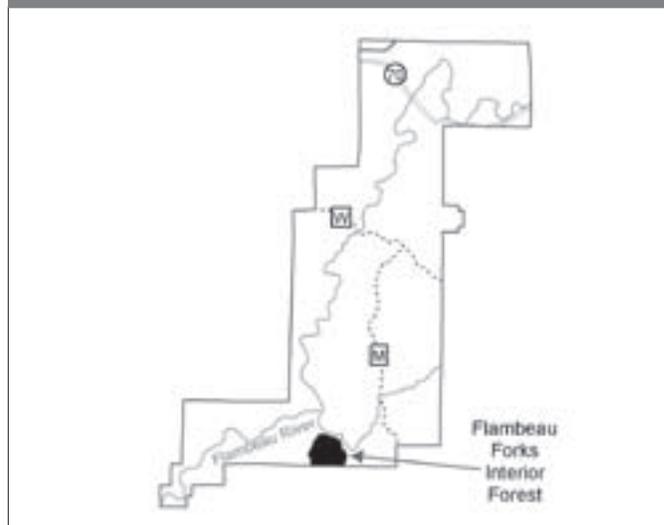
A rich Northern Mesic Forest dominates the area, comprised mainly of sugar maple, basswood, and yellow birch, with smaller densities of other species including scattered white pine and hemlock. Large-diameter (20") trees are found in some areas, and many locations contain a diverse ground flora with abundant spring ephemerals; several herb species here are associated with only the richest habitat types and are mostly limited to smaller, discontinuous patches in other areas of the FRSF. Perched wet pockets in shallow depressions sometimes contain hemlock or mixed swamp hardwoods. Small, intermittent drainages, including Forested Seeps, are found in some locations, as well as Ephemeral Ponds. Unusual trees occurring in this portion of the property include bitternut hickory and butternut, both at the northern limits of their ranges here.

The timber resource here includes the highest quality northern hardwoods on the forest, primarily in large and small sawlog sizes with hardwood poles as a secondary type. This management area offers the best opportunity on the property for growing high-quality sawlogs. The basal area of these stands ranges from 58-134 sq. ft./ac., and averages 96 sq. ft./ac. Cedar and swamp hardwoods make up the next largest cover

### AREA 14 SUMMARY

- ▲ 1,358 acres
- ▲ Unique opportunity to maintain a large area of older high-quality Northern Mesic Forest utilizing three distinct management approaches: research using active manipulation techniques, passive management for old-growth development, and extended rotation timber management emphasizing sustainable production of high-quality sawlogs
- ▲ Opportunity to develop features associated with old-growth, such as large, old trees, grown to biological maturity and beyond while protecting a diverse ground flora and unique aquatic and wetland features, including rare species habitat
- ▲ The new Skinner Creek Hardwoods State Natural Area (228 acres) will overlay a portion of this area
- ▲ The University of Wisconsin of Wisconsin Old-growth Research Project (514 acres) will overlay a portion of this area

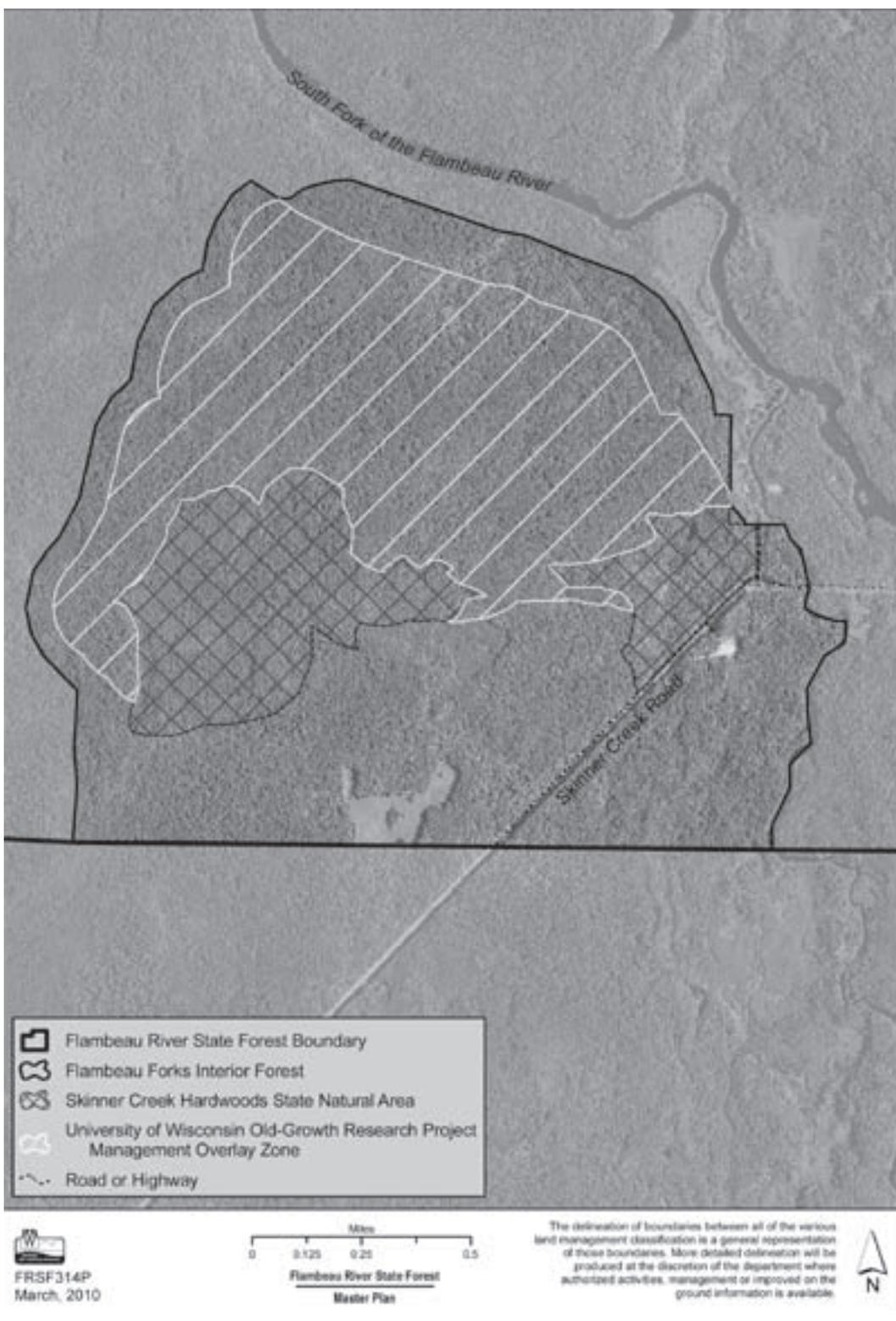
### AREA 14 LOCATOR MAP



type. The cedar, although over 120 years old, has poor growth potential and is small saw and pole size with low stocking levels and an alder understory. The swamp hardwoods portions of the area average 100 years old in small saw and pole size with poor growth potential. The remaining cover types occur in smaller amounts, including good quality aspen saplings and poles covering 2% of this area, a white spruce plantation covering 1% of the area, and poor quality 100-year-old



MAP 2.12 FLAMBEAU FORKS INTERIOR FOREST





tamarack covering another 1% of the area. A 50-year-old pine plantation and unforested grassy areas comprise the remaining 1% of the management area.

**Land Type Association**

The Jump River Ground Moraine (212 Xd05) comprises the majority of this area. The characteristic landform pattern of the Jump River Ground Moraine is undulating moraine and stream terraces. Soils are predominantly somewhat well drained silt loam over dense, acid sandy loam till. This land type association is only found along portions of the southern edge of the forest, and this is the only Native Community Management Area within this land type association.

Exeland Plains (212Xd03), the landtype comprising the bulk of the FRSF, also covers a small portion of this area along the northern and eastern boundaries. The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash.

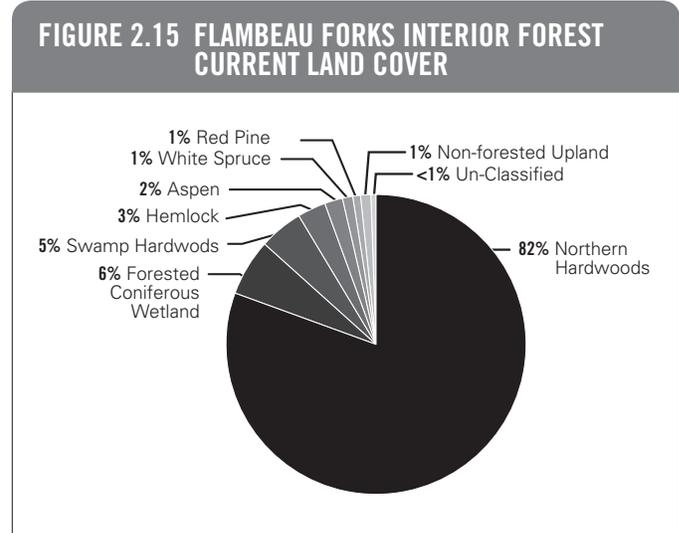
**Soils**

The soils are diverse in this area with 21 different map units represented. The research and core passive areas are comprised mainly of the Magnor-Freeon complex, a somewhat poorly drained soil with a depth to a restrictive layer of 40-60." The extended rotation areas are largely the Freeon, very stony-Freeon complex with several other types making up smaller areas. The Freeon complex also has a depth to a restrictive layer of 40-60", but this complex is moderately well drained. The soils present on steep ridges along the Flambeau River and Skinner Creek include Newot-Pence complex, Pelisier gravelly sandy loam, and Pence sandy loam. These soils range from well drained to excessively drained. The depth to a restrictive layer is very deep for these soils. The remaining area is in somewhat poorly drained to very poorly drained soils which include Lupton and Cathro muck, Magnor, very stony-Magnor complex, and the Capitola-Cebana complex.

**Habitat Types**

The primary habitat types within this area are AOCa (Sugar maple/Sweet cicely-Blue cohosh) and ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley).

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime with a rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages in this habitat type. The herb layer is often developed and species rich while the shrub layer is typically not well developed.



**TABLE 2.17 FLAMBEAU FORKS INTERIOR FOREST CURRENT AND PREDICTED COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested Types</b>				
Northern Hardwoods	1,106	82%	1,085	80%
Forested Coniferous Wetland	83	6%	95	7%
Swamp Hardwoods	64	5%	68	5%
Hemlock	36	3%	41	3%
Aspen	27	2%	27	2%
White Spruce	13	1%	14	1%
Red Pine	9	1%	14	1%
<b>Non-forested Types</b>				
Non-forested Upland	18	1%	14	1%
Un-Classified	2	<1%	0	<1%
<b>Total</b>	<b>1,358</b>	<b>100%</b>	<b>1,358</b>	<b>100%</b>

*This area also includes 15 acres of ROW and 1 acre of water*

ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley) has a mesic moisture regime with a medium nutrient regime. Trees exhibiting good to excellent productive and competitive potential include sugar maple, basswood, white ash, yellow birch, and hemlock. Others demonstrating excellent productivity but limited competitive abilities include red maple, red oak, and white pine. Following disturbance, aspen and paper birch can demonstrate excellent productivity as pioneers. Herbaceous



species characteristic of mesic, nutrient-rich sites occur sporadically on this habitat type. The shrub layer is moderately well developed in younger or early successional stands, but poorly represented in older stands.

### Long Term Objectives

Maintain a contiguous block of mature and old-growth Northern Mesic Forest that includes a matrix of ephemeral ponds, forested seeps, and riparian corridors. Protect ecological site values including water quality, hydrology, native flora, high quality natural communities, and rare species habitats. Provide opportunities for long-term scientific research, including comparisons of different management strategies on the development of old-growth characteristics. Develop characteristics associated with old growth, including large trees grown to biological maturity and abundant snags and downed coarse woody debris. Provide opportunities for visitors to experience an old-growth forest in a remote setting. This area is expected to remain a rich maple-basswood forest, as site and stand conditions allow, within all three of the area's management zones. Red and white pine, cedar, and hemlock will also be retained in the extended rotation area, wherever possible.

### Short Term Management Objectives

- Maintain three distinct management zones within the area: a 514 acre research zone, two ecological reference areas totaling 228 acres, and the remaining acreage (616 acres) in an old forest - extended rotation zone.
- In the old forest-extended rotation zone, use silvicultural techniques to increase the age structure and maintain a diverse species composition, where possible. Management here will strive to convert existing even-aged northern hardwood forests to uneven-aged, encourage long-lived species, and retain a significant component of old, large-diameter trees and allow for the development of coarse woody debris.
- Passively manage the ecological reference areas, allowing natural processes to occur with the eventual goal of developing an old-growth hardwood forest.
- Provide research opportunities in all three zones consistent with area management objectives.
- Provide for education/demonstration of old forest and extended rotation management.





### Management Prescriptions:

#### Entire Management Area (1,358 acres)

- Intensive use will not be permitted, except for the existing gravel pit, established trails, and future logging trails.
- Monitor this area within the next 10 years for the presence of additional rare or endangered species, as resources allow.
- Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy including a funding source if any species are found.
- Control invasive species using appropriate techniques, including the use of pesticides.
- Harvest of fine woody material, as defined in the Department's Woody Biomass Harvesting Guidelines, will not occur in this management area unless part of an approved research plan.
- Salvage operations due to catastrophic wind, fire, disease or insects may take place. However, prior to salvage, an interdisciplinary team will be constructed to determine whether salvage operations should proceed, as well as how they should be conducted, with due deliberation regarding the original objectives of the area and an assessment of any potential impacts on any research activities.
- Existing wildlife openings will be naturally re-vegetated or planted with desirable species to encourage reforestation at an accelerated rate using appropriate techniques. No new wildlife openings will be created or maintained within this management area.

### Management Prescriptions:

#### Research Zone (514 acres)

- Continue ongoing research studying the effects of various treatments on accelerating the development of old-growth structure and composition over a fifty year period. Approved research is described in the Long Term Research Overlay section and reflects a master plan variance approved in 2002. Any future research must be mutually agreed upon between the Department and the research organization.

### Management Prescriptions:

#### Ecological Reference Areas (228 acres)

- Passively manage this area with the exception of controlling invasive species and conducting research if such research is identified in a Department approved research plan. Any future research here must follow procedures to conduct research in a State Natural Area and be coordinated with the State Natural Areas program.

- Active management is limited to clearing existing trails where material will be left on site and to maintain limited low impact public access providing opportunities for education, research and interpretation.
- Previously approved research sampling as part of the university of Wisconsin research project may continue in the Ecological Reference Area. The research shall occur in a manner consistent with the original research project objectives, as defined in the research overlay section, and must be consistent with the intent of the research "control" plots. Given the previous variance did not provide a detailed description of the control research activities, any research conducted must be reviewed and agreed to between the Department, including the Natural Areas program, and the research organizations. Research in this area will be codified using the SNA research approval process.

#### *State Natural Area Designation*

The Skinner Creek Hardwoods State Natural Area will overlay the entire ecological reference area, covering 228 acres of this management area.

### Management Prescriptions:

#### Old Forest-Extended Rotation Zone (616 acres)

- Use old forest extended rotation silvicultural techniques on appropriate sites. While timber production is an objective, increased emphasis should be on aesthetics, wildlife habitat, and biodiversity. Appropriate stocking guides may utilize a 24-plus to 30-plus inch maximum tree size class. Longer cutting cycles will generally be used. Additional ecological forestry techniques, such as the retention of reserve trees, management of coarse woody debris (abundant large snags and downed rotting logs), and the encouragement of coniferous associates (especially white pine and hemlock) will be applied. Retain cover for ephemeral ponds and avoid negatively impacting their hydrology. Maintain standards of red and white pine, cedar, and hemlock.

### Research Overlay

Authorized research is described in the Long Term Research Overlay Zone. The approved research reflects a master plan variance approved in 2002 describing research activities. Additional research must be defined in a research proposal and approved by the Department.





## AREA 15: LAKE OF THE PINES CONIFER HARDWOODS

### Overview and Summary of the Area

This area was recognized several decades ago for its ecological importance and was recommended for special designation by famous Wisconsin ecologist John T. Curtis, eventually becoming a State Natural Area (SNA) in 1955. This site is one of the two original SNAs on the property once designed to protect relict old-growth forests. Located along the east shore of Lake of the Pines, this 53-acre area was once dominated by mature hemlock, yellow birch, and white pine with blocks of mixed hardwoods further from the lakes and a few scattered forested wetlands. The SNA sustained significant tree damage in the 1977 windstorm, and much of the old-growth timber was toppled. Salvage operations occurred in portions of the area following the windstorm, but a core area occupying a good portion of the peninsula was left unsalvaged. The area now contains small portions with mature trees, but the majority of the area is comprised of trees originating from the windstorm. The area has value for long-term monitoring of an old-growth forest recovering from a windstorm, as well as its connection to the lake and potential rare species habitats. Rare birds have been reported here during nesting season in the last decade. The original SNA boundary has been significantly modified, as 103 acres that were salvaged following the 1977 windstorm have been removed.

### Description of the Forest Resource

Forest species composition and structure vary throughout the area as a result of various factors, most notably the 1977 windstorm and subsequent salvage operations. Numerous downed trees contribute to the wild character of some parts of the area. Following the storm, some of the more open patches came back to aspen, others to northern hardwoods, and others contained higher proportions of low shrubs and herbaceous cover. The peninsula and adjacent areas are comprised of Northern Mesic Forest including portions dominated by 11"-15" diameter sugar maple and basswood with a relatively intact canopy and dense maple saplings. Red oak and white ash are mixed throughout. Other portions contain mature (15" and up) hemlock, yellow birch, and cedar with numerous gaps. Some portions of the area contain abundant tip-up mounds seeded with pole-sized yellow and white birch, as well as some black cherry.

### Land Type Associations

The land type association in this area is Exeland Plains (212Xd03). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly

### AREA 15 SUMMARY

- ▲ 53 acres
- ▲ Site has a long history, offering the opportunity to research recovery of an old-growth forest following a windstorm
- ▲ Opportunity to develop features associated with old-growth, such as large, old trees, grown to biological maturity and beyond while protecting wetland features and rare species habitat
- ▲ The Lake of the Pines Conifer Hardwoods State Natural Area (53 acres) will overlay the entire area

### AREA 15 LOCATOR MAP



well drained silt loam over outwash. This land type association comprises the majority of the FRSF.

### Soils

Over 80% of the area is covered by three soil map units. Sconsin silt loam is the most prevalent unit (50% of the area), covering much of the peninsula and other upland areas. Pence sandy loam and Antigo silt loam cover another 17% and 14% of the area respectively. Soils associated with wetlands, primarily mucks, comprise another 16% of the area.

### Habitat Types

There are two primary habitat types within this area: AOCa (Sugar maple/Sweet cicely-Blue cohosh) and ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley).



MAP 2.13 LAKE OF THE PINES CONIFER HARDWOODS





AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime with a rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages in this habitat type. The herb layer is often developed and species rich while the shrub layer is typically not well developed.

ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley) has a mesic moisture regime with a medium nutrient regime. Trees exhibiting good to excellent productive and competitive potential include sugar maple, basswood, white ash, yellow birch, and hemlock. Others demonstrating excellent productivity but limited competitive abilities include red maple, red oak, and white pine. Following disturbance, aspen and paper birch can demonstrate excellent productivity as pioneers. Herbaceous species characteristic of mesic, nutrient-rich sites occur sporadically on this habitat type. The shrub layer is moderately well developed in younger or early successional stands, but poorly represented in older stands.

**Long Term Objectives**

Develop and maintain a contiguous block of Northern Mesic Forest, allowing old-growth characteristics to develop where conditions allow. Maintain and protect the integrity of the forested wetland features and their hydrological connections to the lake. Provide opportunities to conduct research examining the recovery of old-growth following catastrophic windstorm events. Provide opportunities for education and interpretation.

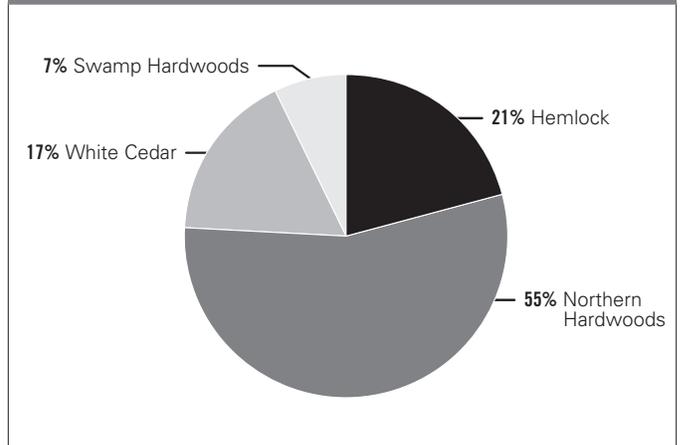
**Short Term Management Objectives**

- Allow natural processes to develop old-growth characteristics, including large trees, abundant coarse woody debris and standing dead snags where possible.
- Maintain the remote nature of this site.

**Management Prescriptions**

- Passively manage this site. Active management is limited to clearing existing trails where material will be left on site and to maintain limited low impact public access providing opportunities for education, research and interpretation of this natural community. Salvage operations due to catastrophic wind, ice, fire, disease or insects may take place. Prior to salvage an interdisciplinary team will be constructed to determine if salvage operations or additional management could be considered with due deliberation regarding the original objectives of the area.
- Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy if any species are found.

**FIGURE 2.16 LAKE OF THE PINES CONIFER HARDWOODS CURRENT LAND COVER**



**TABLE 2.18 LAKE OF THE PINES CONIFER HARDWOODS CURRENT AND PREDICTED COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested Types</b>				
Hemlock	11	21%	11	21%
Northern Hardwoods	29	55%	29	55%
White Cedar	9	17%	9	17%
Swamp Hardwoods	4	7%	4	7%
<b>Total</b>	<b>53</b>	<b>100%</b>	<b>53</b>	<b>100%</b>

- Pesticide use is permitted for invasive species management.
- Monitor this area within the next 10 years for the presence of additional rare species, as resources allow.
- New recreational features shall not be developed on this site.
- New roads or trails shall not be developed on this site.
- Harvest of fine woody material, as defined in the department's Woody Biomass Harvesting Guidelines, will not occur in this area.
- Existing wildlife openings will be naturally re-vegetated and no new wildlife openings will be created or maintained within this management area.

**State Natural Area Designation**

- The Lake of the Pines Conifer Hardwoods State Natural Area (53 acres) will overlay the entire area.





## AREA 16: FLAMBEAU RIVER HARDWOOD FOREST

### Overview and Summary of the Area

This management area is one part of the former “Big Block,” an 1,800-acre section of the forest once occupied by old growth hemlock-hardwoods and the largest state-owned relict old-growth stand in Wisconsin. This portion of the Big Block was designated a State Natural Area in 1952. On July 4, 1977, almost all of the area was blown down by a down burst wind event; this management area comprises the only non-salvaged portions and the only remaining old-growth portions of the original State Natural Area following the storm. The area has a long history of ecological study, both before and following the 1977 storm, and provides a unique opportunity to examine the recovery of a Lake States old-growth forest following catastrophic wind disturbance. The original SNA boundary has been significantly modified, as areas that were salvaged following the 1977 windstorm have been removed. Salvaged portions of the original State Natural Area have been incorporated into Area 6 (Big Block Forest Production Area) with special considerations given to existing long-term research plots established to compare salvaged and unsalvaged portions of the Big Block (Lang et al. 2008).

Portions of the existing long-term research plots are located within this native community.

### Description of the Forest Resource

Much of this area is comprised of trees originating from the 1977 windstorm. Northern hardwoods are the prevalent cover type, although overstory species here are diverse. In addition to maples and aspen, there are areas with red oak, basswood, yellow birch, maple, ash, cherry and elm. Dominant saplings include sugar maple, basswood, yellow birch, American elm, white ash, red maple, and black cherry. A recent study (Lang et al. 2008) suggests that this area has higher/deeper pit and mound topography than areas where salvage occurred (now located in Area 6). A cedar stand is located along the western edge of the area near the river. Relict mature forest, including large-diameter white pine, occurs in small patches, particularly near the river. Hemlock does not appear to be successfully reproducing here, similar to the rest of the property.

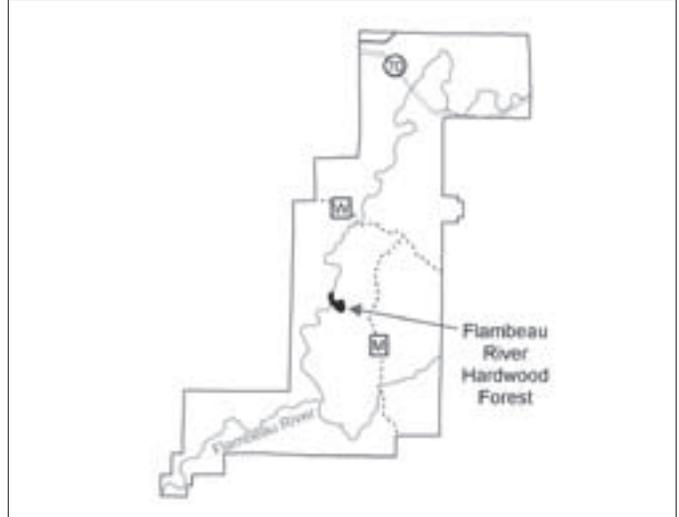
### Land Type Associations

The characteristic landform pattern of the Exeland Plains (212Xd03) is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. The majority of the FRSF falls under this land type association.

### AREA 16 SUMMARY

- ▲ 263 acres
- ▲ Former location of a landmark tract of old-growth hemlock-hardwoods.
- ▲ Site has a long history, including previous and ongoing research efforts and offers a unique opportunity to examine recovery of an old-growth forest following a windstorm, with and without salvage logging
- ▲ The Flambeau River Hardwoods State Natural Area (266 acres) will overlay the entire area

### AREA 16 LOCATOR MAP



### Soils

The soils of this area are sandy loams (57%), silt loams (31%), loamy sands (9%), and a small amount (3%) of peat/muck soils. The most prevalent soil type is Pence sandy loam, a soil derived from mostly loamy alluvium underlain by stratified sandy and gravelly outwash and with greater than 80" depth to a restrictive layer, but almost one-third of the area is comprised by Sconsin silt loam, a “windthrow-prone” soil that comprises much of the former “Big Block” (see also Area 6).

### Habitat Types

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime and a rich to very rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages. The herb layer is often devel-

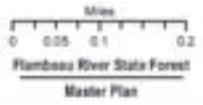


MAP 2.14 FLAMBEAU RIVER HARDWOOD FOREST



 Area 16: Flambeau River Hardwood Forest  
*The entire area is also Flambeau River Hardwoods Forest State Natural Area (Passive Management)*

  
 FRSF316P  
 March, 2010



The delineation of boundaries between all of the various land management classification is a general representation of those boundaries. More detailed delineation will be produced at the discretion of the department where authorized activities, management or improved on the ground information is available.





oped and species rich while the shrub layer is typically not well developed.

**Long Term Objectives**

Allow forest to naturally age and gradually develop characteristics associated with older forest including large trees, abundant coarse woody debris and standing dead snags, as conditions allow. Provide opportunities to conduct research examining the recovery of old-growth following catastrophic windstorm events. Provide opportunities for education and interpretation.

**Short Term Management Objectives**

- Allow natural processes to develop old-growth characteristics, including large trees, abundant coarse woody debris and standing dead snags where possible.
- Provide opportunities for research consistent with area’s management objectives.
- Maintain the remote nature of this site.

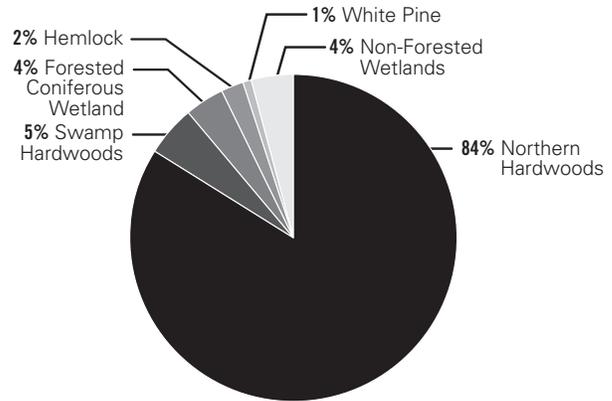
**Management Prescriptions**

- Passively manage this site. Active management is limited to clearing existing trails where material will be left on site and to maintain limited low impact public access providing opportunities for education, research and interpretation of this natural community. Salvage operations due to catastrophic wind, ice, fire, disease or insects may take place. Prior to salvage an interdisciplinary team will be constructed to determine if salvage operations or additional management could be considered with due deliberation regarding the original objectives of the area.
- Periodically monitor all areas within the site for the presence of invasive species and develop a control strategy if any species are found.
- Pesticide use will be permitted for invasive species management.
- Monitor this area within the next 10 years for the presence of additional rare species, as resources allow.
- New recreational features will not be developed on this site.
- New roads or trails will not be developed on this site.
- Harvest of fine woody material, as defined in the department’s Woody Biomass Harvesting Guidelines, will not occur in this area.
- Existing wildlife openings will be naturally re-vegetated and no new wildlife openings will be created or maintained within this management area.

**State Natural Area Designation**

- The Flambeau River Hardwood Forest State Natural Area (266 acres, including 3 acres of water) will overlay the entire area.

**FIGURE 2.17 FLAMBEAU RIVER HARDWOOD FOREST CURRENT LAND COVER**



**TABLE 2.19 FLAMBEAU RIVER HARDWOOD FOREST CURRENT AND PREDICTED COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested Types</b>				
Northern Hardwoods	222	84%	222	84%
Swamp Hardwoods	13	5%	13	5%
Forested Coniferous Wetlands	11	4%	11	4%
Hemlock	5	2%	5	2%
White Pine	2	1%	2	1%
<b>Non-forested Types</b>				
Non-forested Wetlands	10	4%	10	4%
<b>Total</b>	<b>263</b>	<b>100%</b>	<b>263</b>	<b>100%</b>

Area also includes 3 acres of water.



**HABITAT MANAGEMENT AREA**



**HABITAT MANAGEMENT AREA**

The management objective of habitat management areas is to provide or enhance habitat (upland, wetland, or aquatic) to support specific species of plants or animals. Habitats and communities with this designation are managed for a wide variety of purposes, including focused species production and protection.

**TABLE 2.20 HABITAT MANAGEMENT AREA**

Area #	Habitat Management Area	Acres
17	Ruffed Grouse Habitat	3,870
	<b>Total</b>	<b>3,870</b>



**HABITAT MANAGEMENT AREA**





## AREA 17: RUFFED GROUSE HABITAT

### Overview and Summary of the Area

Located in the southeast corner of the forest, this area is 3,870 acres and includes Sobieski Flowage. Part of this area is in a different land type association than the rest of the forest. This area provides substantial amounts of aspen for wildlife including ruffed grouse, American woodcock, beaver, deer, and many other species. It supports a variety of age classes of aspen in conjunction with other northern forest types to provide for a diverse wildlife community. Sobieski flowage provides an opportunity for the management of furbearers, other wetland wildlife and waterfowl. Some fishing activity also occurs at this flowage.

### Description of the Forest Resource

Twenty five percent of this area is aspen in a variety of age classes, ranging from 3 -72 years, with an average age of 45 years and with good growth potential. Red maple and balsam fir are the most common secondary types within the aspen type. Forested wetlands make up 9% and non-forested wetlands make up 25% of the area. The black spruce is approximately 70 years old, while the tamarack ranges from 30-89 years. The unforested wetlands are almost entirely lowland brush – alder. Northern hardwoods cover 22% of the area. Stand size ranges from 2 acres -191 acres. The stands are primarily small sawlog size with a few stands of large sawlog size. Overall, the quality of northern hardwoods is poor to average here. Swamp hardwoods cover 15% and red maple cover 0% of the area. Site indexes support average growth potential for black ash and average to good growth potential for red maple. The average age of the swamp hardwoods is about 83 years, with red maple ranging in age from 46-93 years old. The swamp hardwood and red maple types propose potential problems with regeneration. Scarification may be needed on these sites for regeneration. Red and white pine makes up 0% and white spruce makes up about 3% of the area. The red pine is a 52 year old plantation with good growth potential. The white pine is approximately 67 years old and also has good growth potential. Small sawlog sized aspen make up the secondary type of the white pine. The 41 year old spruce plantation also has good growth potential and is primarily small sawlog size.

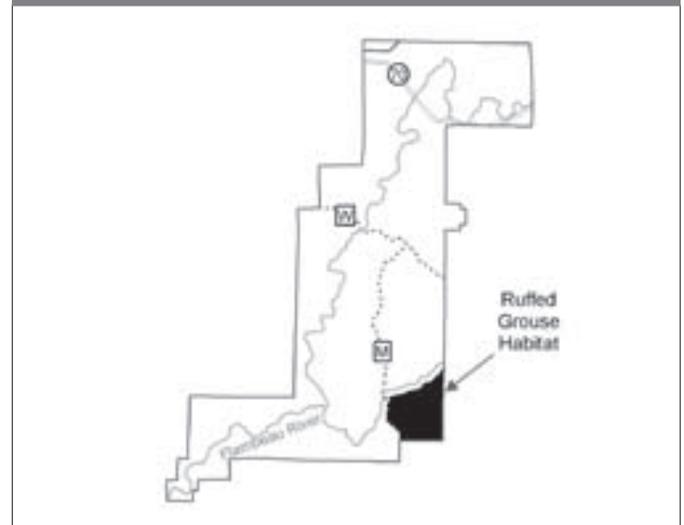
### Land Type Associations

The land type associations in this area are Exeland Plains (212Xd03) and the Jump River Ground Moraine (212Xd05). The characteristic landform pattern of the Exeland Plains is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. The majority of the FRSF falls under this land type association. The characteristic landform pattern of

### AREA 17 SUMMARY

- ▲ 3,870 acres
- ▲ Provide habitat for ruffed grouse and other wildlife
- ▲ Provide a diversity of cover types

### AREA 17 LOCATOR MAP



Jump River Ground Moraine is undulating moraine and stream terraces. Soils are predominantly somewhat well drained silt loam over dense, acid sandy loam till. This land type association is only found along portions of the southern edge of the forest.

### Soils

Over half of this area is classified as muck. The muck is made up of sphagnum moss, herbaceous organic material or woody organic material. The Capitola-Cebana complex also contains a 0-5 inch layer of muck over silt loam and sandy loam. Magnor, very stony-Magnor complex covers about one-third of the area. This soil is somewhat poorly drained. The upland sites consist of the Freeon, very stony-Freeon complex and the Freeon, very stony – Sconsin complex. These complexes are moderately well drained.

### Habitat Types

Currently, mucks do not have habitat types assigned to them. The primary habitat types within this area are ArAbCo (Red maple-Balsam fir/Bunchberry) and AOCa (Sugar maple/Sweet cicely-Blue cohosh).



MAP 2.15 RUFFED GROUSE HABITAT





ArAbCo (Red maple-Balsam fir/Bunchberry) is strongly associated with silt loams that are subject to a high water table, therefore there is a high chance for “swamping” or flooding. This type is best suited for balsam fir, white spruce, aspen, and red maple. Habitat diversity could be improved by increasing the conifer component on this type. Windthrow is the primary disturbance factor on this type mainly due to rooting not being firm on the somewhat poorly drained soils. The herb layer is moderately well developed and relatively species poor.

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime and a rich to very rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages. The herb layer is often developed and species rich while the shrub layer is typically not well developed.

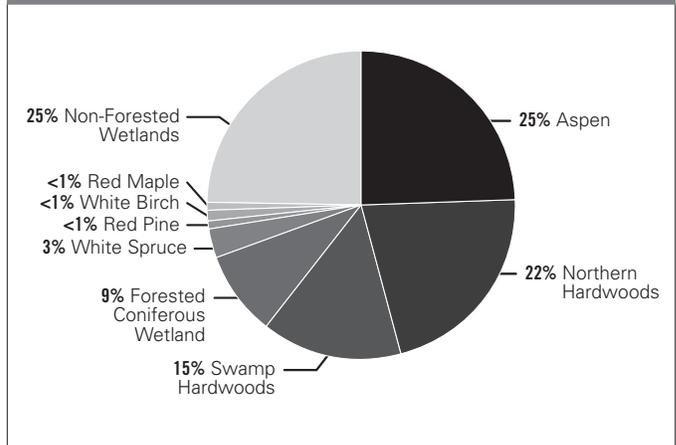
**Long Term Objectives**

Management of this area is to provide high quality ruffed grouse habitat. The current aspen acreage will remain the dominant cover type within a mixed forest in a variety of age classes and patch sizes. Other associated species would be managed along with the aspen, to the extent that they do not interfere with adequate aspen regeneration. Current levels of red pine and spruce plantation acreage will be maintained to retain forest cover in existing plantations where regeneration is lacking. Sobieski Flowage will be maintained for water quality with emphasis toward wildlife, riparian habitat, and scenic qualities.

**Short Term Management Objectives**

- Increase aspen and encourage age class diversity.
- Maintain current acreages of all other forest cover types. The age structure of the cover types, especially aspen, will change over time.
- Maintain natural and artificial grass openings for wildlife.
- Maintain access routes (e.g. hunter-walking trails) identified in the Road Management section.
- Convert Scotch pine to native pine species.
- Manage for ruffed grouse, furbearers and waterfowl.
- Improve waterfowl habitat on Sobieski Flowage.
- Promote reintroduction of wild rice.

**FIGURE 2.18 RUFFED GROUSE HABITAT CURRENT LAND COVER**



**TABLE 2.21 RUFFED GROUSE HABITAT CURRENT AND PREDICTED COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested Types</b>				
Aspen	971	25%	1,084	28%
Northern Hardwoods	835	22%	851	22%
Swamp Hardwoods	585	15%	503	13%
Forested Coniferous Wetlands	359	9%	348	9%
White Spruce	101	3%	116	3%
Red Pine	17	<1%	0	<1%
White Birch	9	<1%	0	<1%
Red Maple	6	<1%	0	<1%
<b>Non-forested Types</b>				
Non-forested Wetland	897	23%	890	23%
Non-forested Uplands	90	2%	78	2%
<b>Total</b>	<b>3,870</b>	<b>100%</b>	<b>3,870</b>	<b>100%</b>

*This area also contains 57 acres of open water, and 73 acres of ROW and inholdings.*



### Management Prescriptions

Please see the General Management Prescriptions at the end of this section for general management by forest type. The General Management Prescriptions apply and all management activities are authorized, except as noted below for this management area.

- Consider even-aged management on northern hardwood sites where crop trees are lacking to achieve long-term uneven-aged stand management. Even-aged management includes overstory removal and shelterwood harvests.
- Conduct mechanical site preparation as needed. Mowing, scarification, herbicide or other methods may be utilized for regeneration.
- Use coppice techniques to regenerate aspen in mixed stands as necessary to ensure regeneration after salvage operations.
- Monitor Sobieski flowage for maintenance needs and regulating flowage depths to benefit waterfowl feeding periods.
- Broadcast wild rice seed in cooperation with the Great Lakes Indian Fish and Wildlife Commission (GLIFWC).
- Attempt to retain, through coppice techniques, the existing aspen acreage within the unit. Aspen management should continue with smaller harvest areas creating

a mosaic of age classes. Aspen management should be considered on a wide range of species within the stands. Some of the more mottled or mixed stands with aspen should be considered for aspen conversion.

- Adapt the General Forest Management Prescriptions for each stand to create, enhance and maintain game bird habitat characteristics, including a diversity of tree ages and stand sizes, providing nesting, forage and brooding environments. Age structure for the species would fall into the economic life expectancy consistent with the local site quality.
- Timber harvest to achieve area goals would use various patch sizes and techniques for regeneration harvests. Techniques may include the use of large and small patch clear cuts or group selection, shelterwood harvest, seed tree retention, ground disturbance, seeding or prescribed burning either alone or in combination with the above treatments.
- Improve wood duck nesting habitat associated with scattered ponds to improve waterfowl habitat on Sobieski flowage.
- Apply herbicides and/or mechanical treatments to maintain natural and artificial grass openings.
- Mow and brush hunter-walking trails on a rotating schedule of periodic maintenance.



**SCENIC RESOURCES MANAGEMENT AREAS**



**SCENIC RESOURCES MANAGEMENT AREAS**

The management objective of a scenic resources management area is to protect, maintain, and enhance for long-term public enjoyment lands or waters having unique aesthetic qualities or outstanding scenic beauty and lands where managing for aesthetics is a primary concern due to significant or special public use of the area. This classification is applied to lands with outstanding scenic attractions; to scenic lakes, rivers and streams with high value for water-based recreation; and to scenic highways, roads, trails or vistas for the specific use of enjoying the scenery.

Vegetation management approaches appropriate for use within scenic resource management areas may vary from passive management to active management, depending upon the long-term scenic management objective and the site’s ecological capability, vegetation types, and site conditions. Examples of potential vegetation management activities that may be

**TABLE 2.22 SCENIC RESOURCES MANAGEMENT AREA**

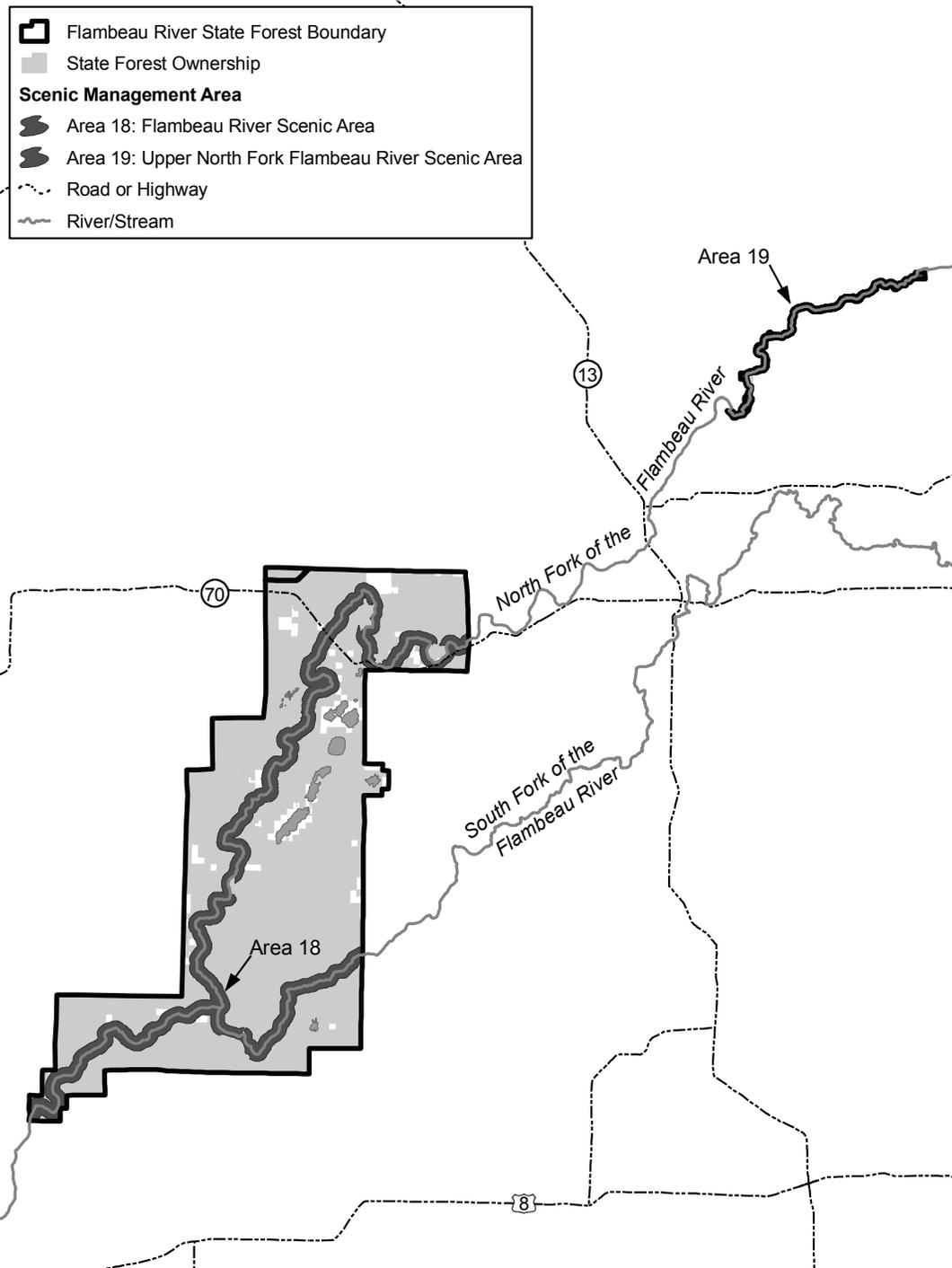
Area #	Scenic Resources Management Areas	Acres
18	Flambeau River Scenic Area	14,388
19	Upper North Fork Flambeau River Scenic Area	1,078
	<b>Total</b>	<b>15,466</b>

prescribed by the master plan include timber harvesting, planting, herbicide application, mowing, burning, flooding, installation of fish habitat improvement devices, road construction, and erosion control. Additional restoration activities potentially include cutting trees and shrubs to maintain or create scenic vistas, underplanting or replanting (preferably native trees and shrubs) for visual variety or to speed conversion to a scenically desirable forest type and removal of invasive species.



SCENIC RESOURCES MANAGEMENT AREAS

MAP 2.16 SCENIC RESOURCES MANAGEMENT AREAS



- Flambeau River State Forest Boundary
- State Forest Ownership
- Scenic Management Area**
- Area 18: Flambeau River Scenic Area
- Area 19: Upper North Fork Flambeau River Scenic Area
- Road or Highway
- River/Stream

FRSF318P  
February, 2010



The delineation of boundaries between all of the various land management classification is a general representation of those boundaries. More detailed delineation will be produced at the discretion of the department where authorized activities, management or improved on the ground information is available.





## AREA 18: FLAMBEAU RIVER SCENIC AREA

### Overview and Summary of the Area

This area is comprised of approximately 14,388 acres on both sides of the North and South Forks of the Flambeau River (1,320 feet of the ordinary high water mark (OHWM) of the river's edge on both banks).

Several sites identified as potential native community management areas have been incorporated due to similar management objectives. This area is characterized by a low level of development and low road density, with no additional public roads planned.

### Description of the Forest Resource

The Flambeau River is the dominant feature of this area, defining and shaping recreation and management goals. Forest resources and cover types vary in composition, quality, stocking levels, and growth potential throughout the area. Northern hardwood is the dominant cover type (51%) throughout the area, with sizes ranging from poletimber to large sawtimber, and regeneration in one-quarter of the stands. The majority of these stands are of medium quality, although high quality stands would be expected based on soils and habitat type. Aspen represents 21% of this area, with stands ranging in age from 26-82 years, with an average of 50 years. The aspen in this area has good to very good growth potential and is mostly pole timber. In some areas it is mixed with red maple, northern hardwoods, and balsam fir and on others, stands have regeneration of white pine, balsam fir, and spruce. Swamp hardwood covers approximately 7% of the area with varying growth potential, and size ranging from pole to large sawtimber. On average, these stands are about 75 years old with little regeneration. Hemlock represents only 4% of this area, ranging in size from small pole to large sawtimber. Stands are often mixed with northern hardwoods or red maple. Stands over 120 years old have good growth potential, with varying stocking levels. Forested wetlands also represent 1% of this area. Black spruce is the most common forested wetland followed by balsam fir, tamarack, and cedar. The majority of forested wetlands range in age from 65-85 years, with much of the cedar being over 100 years old. The majority of large white pines are found in the river corridor, although it represents only 2% of the area. It is generally large sawtimber mixed with aspen, northern hardwoods, balsam fir, or spruce. Very little regeneration is found in these stands despite good growth potential. The average age of these stands is approximately 100 years. The remaining area is represented by small amounts of unforested uplands, unforested wetlands, white birch, red maple, and red pine plantations.

### AREA 18 SUMMARY

- ▲ 14,388 acres
- ▲ Emphasis on scenic management and older forest conditions
- ▲ Low road density
- ▲ Majority of area is a Type 2 Recreational Use Setting

### AREA 18 LOCATOR MAP



### Land Type Association

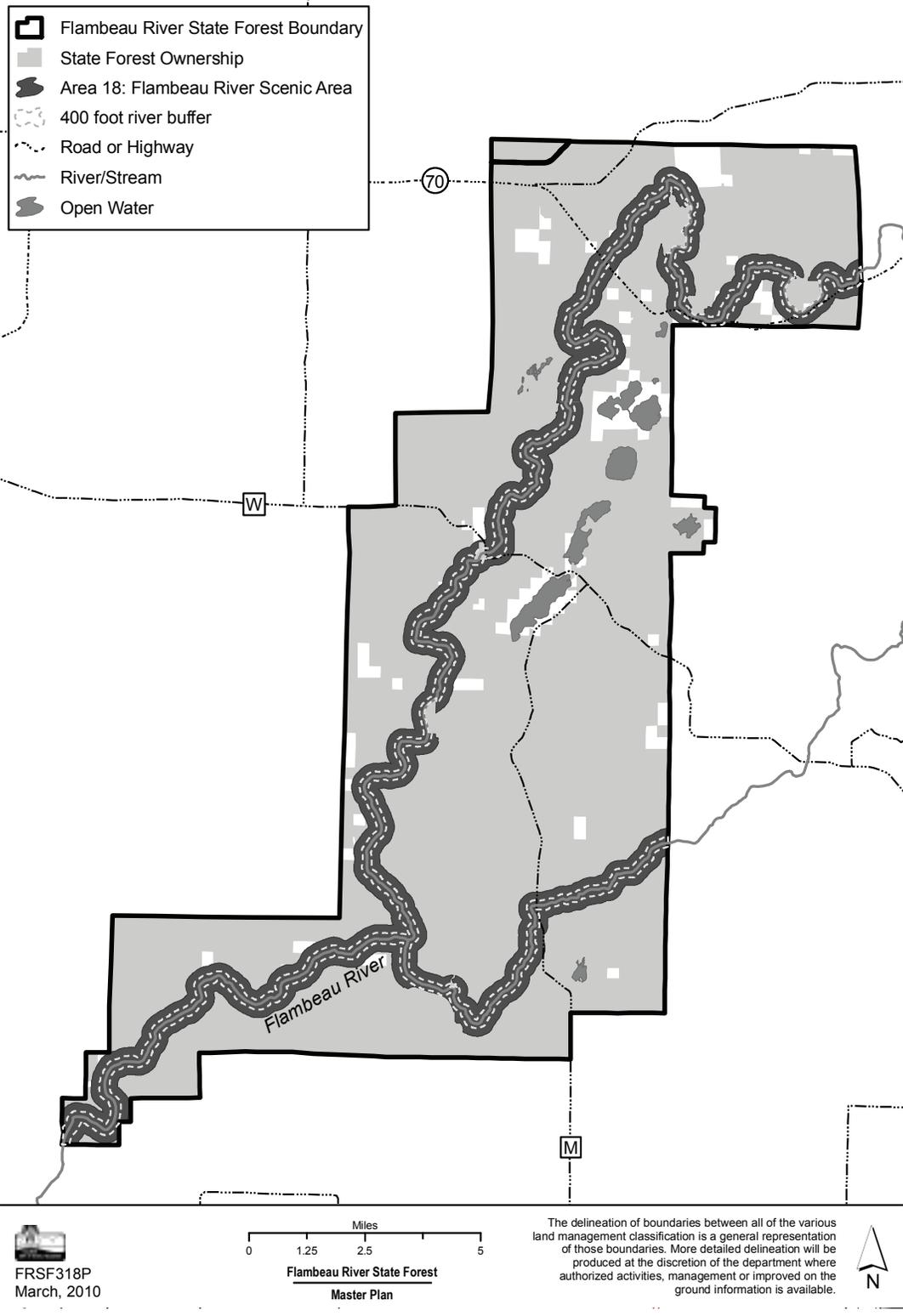
The land type association of this area is primarily Exland Plains. The characteristic landform pattern is undulating outwash plains. Soils are predominantly well drained silt loam over outwash. The majority of the FRSF falls under this land type association. Small areas within the river corridor also fall into Flambeau silt capped Drumlins. The characteristic landform pattern is rolling drumlins with swamps common. Soils are predominantly moderately well drained silt loam over acid sandy loam till. The Upper Flambeau River falls within the Chequamegon Washed Till and Outwash land type association. The characteristic landform pattern is rolling collapsed moraine and outwash plain complex. Soils are predominantly well drained sandy loam over acid loamy sand debris flow or outwash.

### Soils

Due to the extensive acreage and location of this management area, various soil types can be found. Sandy loams are the predominant soil type. These soils include Pence sandy loam,



**MAP 2.17 FLAMBEAU RIVER SCENIC AREA**





Padus sandy loam, Manitowish sandy loam, and Shanagolden fine sandy loam. The Vilas-Lindquist complex is also found in this area, which is loamy sand. All of these soils range from moderately well drained to excessively drained. The depth to a restrictive feature is very deep at over 60" for all soils except Shanagolden, which has a restrictive depth of 24-40 inches, making these soils susceptible to wind events. Soil maps will be needed for specific areas along the river.

**Habitat Types**

There are two primary habitat types within this area: AOCa (Sugar maple/Sweet cicely-Blue cohosh) and ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley).

AOCa (Sugar maple/Sweet cicely-Blue cohosh) has a mesic moisture regime with a rich nutrient regime. Most tree species exhibit excellent growth and productivity if establishment opportunities exist and competition is controlled. Northern hardwoods demonstrate excellent productive potential and competitive advantages in this habitat.

ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley) has a mesic moisture regime with a medium nutrient regime. Trees exhibiting good to excellent productive and competitive potential include sugar maple, basswood, white ash, yellow birch, and hemlock. Others demonstrating excellent productivity but limited competitive abilities include red maple, red oak, and white pine. Following disturbance, aspen and paper birch can demonstrate excellent productivity as pioneers.

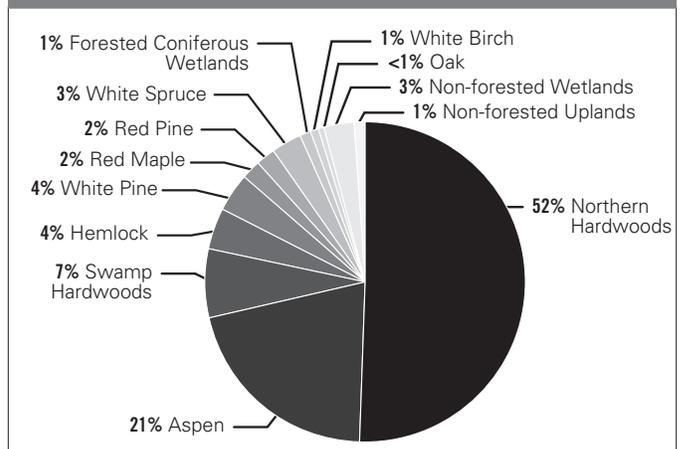
**Long Term Objectives**

Provide a wild-appearing, remote, undeveloped, scenic setting along the North Fork and South Fork of the Flambeau River offering solitude and high quality back-country recreation within a quarter mile of the Flambeau River. Non-motorized recreation is emphasized, particularly paddling and camping. Forest management will maintain a structurally and functionally diverse forest of mixed hardwoods and conifer species that provide aesthetic and ecological values. Riparian habitats will be maintained and coarse woody habitat will be encouraged.

**Short Term Management Objectives**

- Maintain a somewhat remote and undeveloped, natural appearing setting within ¼ mile along both banks of the North and South Forks of the Flambeau River with special emphasis on the 400 foot riparian zone along each river bank.
- Develop and enhance a closed canopy older-growth forest of pine, hemlock, and northern hardwood species on appropriate sites. Retain and promote Eagle and Osprey nesting habitat.
- Protect and enhance riparian habitats.

**FIGURE 2.19 FLAMBEAU RIVER SCENIC AREA CURRENT LAND COVER**



**TABLE 2.23 FLAMBEAU RIVER SCENIC AREA CURRENT AND PREDICTED COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested Types</b>				
Northern Hardwoods	7,400	51%	7,770	54%
Aspen	3,019	21%	2,158	15%
Swamp Hardwoods	1,035	7%	863	6%
Hemlock	591	4%	719	5%
White Pines	510	4%	719	5%
Red Maple	309	2%	144	1%
Red Pine	285	2%	432	3%
White Spruce	377	3%	288	2%
Forested Coniferous Wetlands	205	1%	432	3%
White Birch	102	1%	144	1%
Oak	18	<1%	0	<1%
<b>Non-forested Types</b>				
Non-forested Wetlands	431	3%	288	2%
Non-forested Uplands	106	1%	432	3%
<b>Total</b>	<b>14,388</b>	<b>100%</b>	<b>14,388</b>	<b>100%</b>

*This area also includes 1,754 acres of open water, 1,435 acres of inholdings and ROW*



- Provide and enhance opportunities for solitude and primitive types of non-motorized recreation, particularly canoeing/kayaking and low density primitive and semi-primitive river camping and hiking.

**Management Prescriptions (these apply to the entire management area, except as overridden by the special prescriptions for the 400 foot river edge zone)**

- Follow the DNR Old Growth and Old Forest Handbook management guidelines, particularly related to “Managed Old-Forests” on appropriate sites. Monitor composition and structure changes to aid future management decisions.
- On appropriate sites, promote the growth and retention of large trees, favoring white pine, red pine, hemlock, yellow birch and cedar for their high aesthetic value. Under-planting may be used to increase stocking levels of key species.
- Retain and promote coarse woody habitat (snags and dead downed trees) to promote old growth characteristics and for riparian habitat along and in the river, except for within designated public use sites where hazard trees shall be removed.
- In areas with predominantly shorter-lived species, convert to longer-lived species where possible while retaining a high visual quality of the area (i.e. to the degree practicable, maintain low level of visibility of management activity). Under-plant if necessary if natural regeneration of desired species is not likely or to speed conversion.
- Passively manage bottomland hardwood stands that are adjacent to bottomland hardwood stands within the 400 foot zone to provide a larger, more functional bottomland hardwood ecosystem. Bottomland hardwood stands that are not connected to, or adjacent to, bottomland hardwoods within the 400 foot zone may be actively managed.
- Actively manage pine plantations through thinning and appropriate regeneration techniques to create stands with a natural appearance and larger diameter trees.
- Limit the extent and frequency of forest management activities necessary to achieve the desired silvicultural response with the least visible sign of management activity.
- Control invasive species as necessary to maintain aesthetic and ecological integrity; use methods that are consistent with the intent of this management area, and apply invasive species control measures at the most advantageous time for successful control.
- Consistent with the management objectives and prescriptions for this area, conduct salvage operations, emphasizing maintenance and improvement of the long-term visual quality of the area. Plant following salvage if desired forest composition will not naturally regenerate.
- Minimize the visual and audible impacts of forest management activities by harvesting during leaf-off periods, unless a faster response is necessary to address public health and safety concerns, such as removing hazard trees from designated public use sites.
- Locate logging roads and decking sites outside of this management area whenever possible.
- For development of management roads and other structures follow the requirements of NR44.07(5) for a Type-2 recreational use setting, except for included public use sites that are designated as a Type-3 recreational use setting where NR44.07(6) shall apply as prescribed by the recreational use section of this plan.

**Within 400 feet of each bank of the river:**

- Apply additional aesthetic management techniques such as restricting the size of cuts, conducting partial harvests, conducting small regeneration cuts with irregular boundaries. Remove or chip slash, or treat it to lie within 24 inches of the ground.
- Locate all temporary and permanent logging roads and decking sites outside of this area. Minimal, temporary skid trails are allowed.
- Passively manage bottomland hardwoods.

**Recreation Site Management**

- Maintain campsites and boat landing sites in a wooded condition with healthy, vigorous trees. Cut hazard trees as necessary at designated public use sites as necessary.
- Develop, renovate and maintain campsites, water access sites, trails or other public use facilities as prescribed in the recreational use section of this plan.

**Authorized Management Activities**

The following activities are authorized in this management area when done in support of and in accordance with the management area’s objectives and prescriptions:

- Selective timber harvesting, small patch cutting, non-commercial thinning, and other routine timber stand improvement activities, passive management, selective tree or brush cutting, hand tree and shrub planting, herbicide application, burning, trail or road construction, erosion control, and construction and maintenance of recreational facilities.



## AREA 19: UPPER NORTH FORK FLAMBEAU RIVER SCENIC AREA

### Overview and Summary

The Upper North Fork Flambeau River Scenic Area is located approximately 30 miles northeast of Park Falls in Ashland and Iron Counties. The area totals 1,114 acres and consists of land on both sides of the river. It is identified as that portion of the river starting just below Turtle Flambeau Flowage and ending 14 miles down river to Agenda landing. The river has been recognized for canoeing and fishing for many years. Education groups, youth groups, and camp groups regularly use the river for day trips and a starting point longer over night canoe trips. There are several traditional picnic sites along the river that have been historically used by river users, generally for "shore lunches). Access to the river is limited. River access consists of two DNR owned landings (Robinson and Holts) and one Township administered landing (Agenda). It is an 18 mile paddle from Turtle Flambeau Flowage to camping facilities near Park Falls (Hines Memorial Park and Campground).

### Description of the Forest Resource

Approximately 40% of the shoreland is low and consists of swamp hardwoods and conifer wetlands. The remaining 60% of the shoreland is upland and is interspersed with red maple, white pine/hemlock, aspen, balsam fir, white birch, northern hardwoods and red pine.

### Land Type Association

The Land Type Association for this area is Chequamegon Washed Till and Outwash (212XaO3). The characteristic landform pattern is rolling collapsed moraine and outwash plain complex. Soils are predominantly well drained sandy loam over acid loamy sand debris flow or outwash.

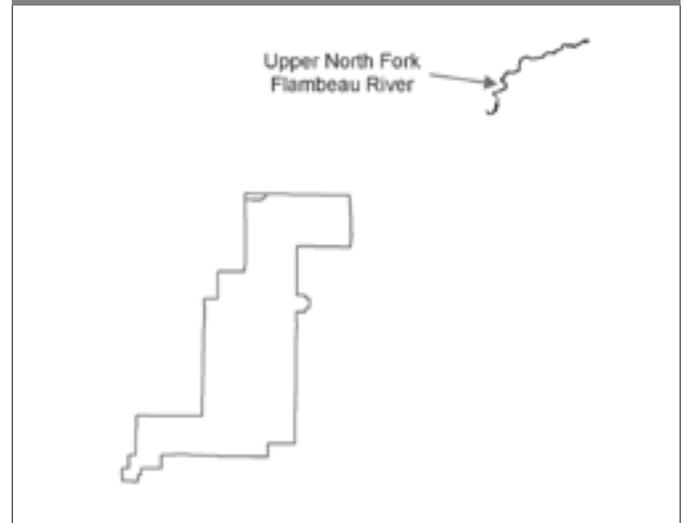
### Soils

Due to the location of this management area, various soil types can be found. Sandy loams are the predominant soil type. These soils include Padus sandy loam, Shanagolden fine sandy loam, Peeksville fine sandy loam, and the Keweenaw-Sayner-Vilas complex. These soils range from moderately well drained to well drained. Silt loams are also found in this area and include Butternut silt loam and Cable silt loam. These soils are somewhat poorly drained to poorly drained. Lupton and Cathro are very poorly drained mucks and are also found in this area. The depth to a restrictive layer varies among the soil types found in this area, ranging from 20 inches to very deep at over 60". Soil maps will be needed for specific areas along the river.

### AREA 19 SUMMARY

- ▲ 1,114 acres
- ▲ Emphasis on scenic management and older forests

### AREA 19 LOCATOR MAP



### Habitat Types

There are three primary habitat types within this area: ATM (Sugar maple-Eastern hemlock/Wild lily-of-the-valley), AVVb (Sugar maple/Blueberry-Maple leaved viburnum), and TMC (Eastern hemlock/Wild lily-of-the-valley- Goldthread).

ATM – The moisture regime on this habitat type is mesic, and the nutrient regime is medium. Trees exhibiting good to excellent productive and competitive potential include sugar maple, basswood, white ash, yellow birch, and hemlock. Others demonstrating excellent productivity but limited competitive abilities include red maple, red oak, and white pine. Following intense disturbance, aspen and paper birch can demonstrate excellent productivity as pioneers. Herb species characteristics of mesic, nutrient-rich sites occur only sporadically on this habitat type. The shrub layer is moderately well developed in younger or early successional stands, but shrubs are poorly represented in older stands.

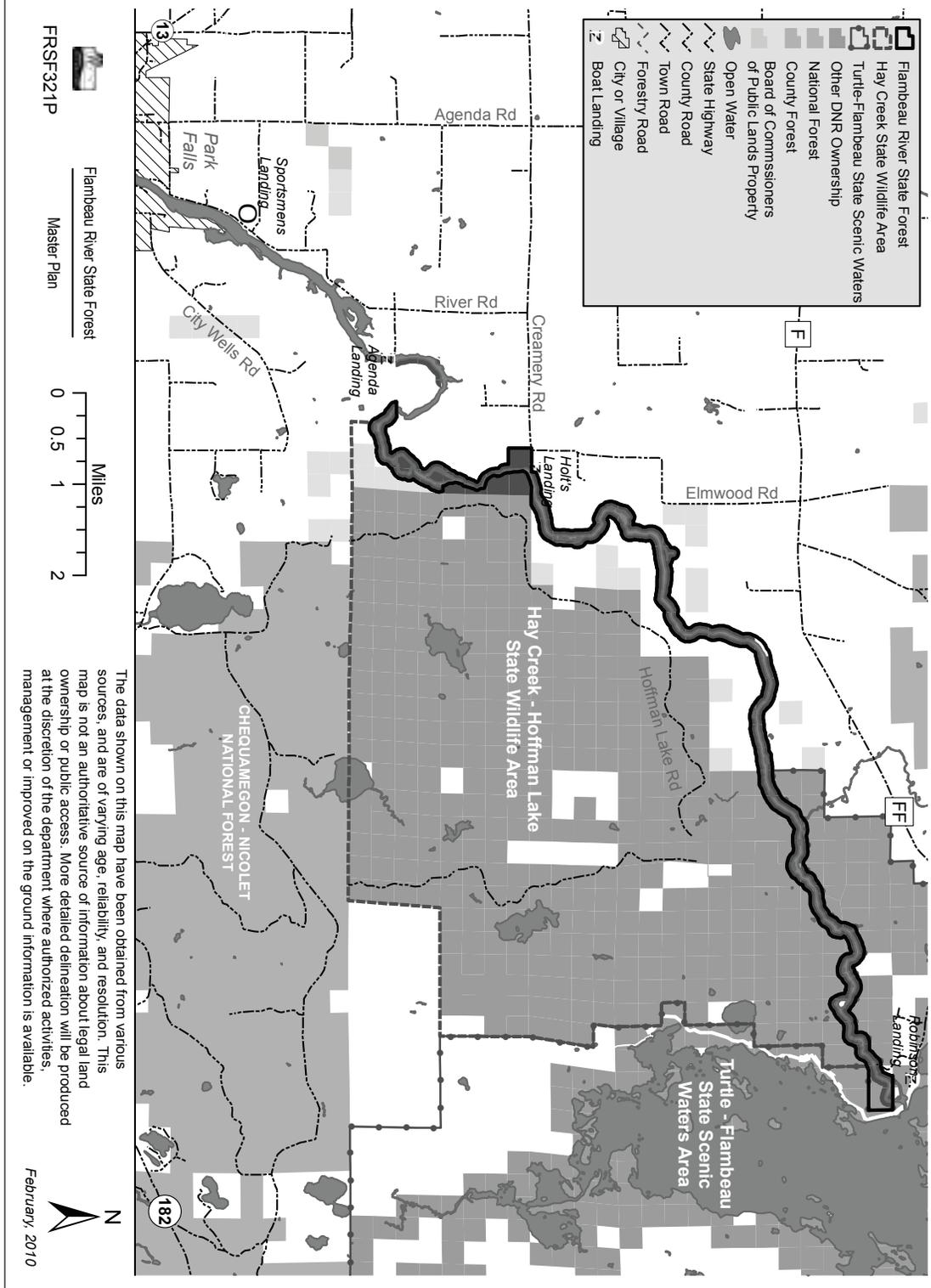
AVVb – The moisture regime is dry-mesic, and the nutrient regime is medium. This type was dominated by white and red pine in the pre-logging era. It is still common to see large charred stumps. Aspen, white birch, red oak and red maple



# SCENIC RESOURCES MANAGEMENT AREAS UPPER NORTH FORK FLAMBEAU RIVER SCENIC AREA

AREA  
**19**

MAP 2.18 UPPER NORTH FORK FLAMBEAU RIVER SCENIC AREA





appear to be well suited for this type. In the absence of disturbance, stands on this type are often gradually taken over by sugar maple, but this type is suboptimal for growth and yield of sugar maple. In some areas, white pine can be abundant in the understory where a seed source is present and conditions area favorable. Bracken fern and large-leaved aster are typically the dominant herbs, and the shrub layer is typically diverse and well-developed.

TMC – The moisture regime for this habitat type is mesic to wet-mesic, and the nutrient regime is medium. Aspen, red maple, white birch, and yellow birch grow well on this type. Sugar maple, basswood, and white ash typically display poor vigor and quality and are not well represented on this type. Conifers are almost a constant component of stands on this type. There is a chance for “swamping” on soils associated with this type. Windthrow is almost always a potential hazard on this type. Herb layer is composed primarily of species characteristic of northern forests and raw humus substrate.

**Long Term Objectives**

Provide a wild appearing, remote, undeveloped setting along the North Fork of they Flambeau River offering solitude and a natural appearing landscape. Protect and enhance the natural appearing and wild qualities of the river corridor by promoting an older forest, and of long-lived tree species including pine, hemlock, and northern hardwood with a closed canopy with highly visible large live and dead legacy trees. Protect and enhance the riparian habitat. Provide and enhance non-motorized recreation opportunities for solitude by providing a limited number of primitive water access sites, particularly for canoes and kayaks. Encourage day trips by not allowing camping.

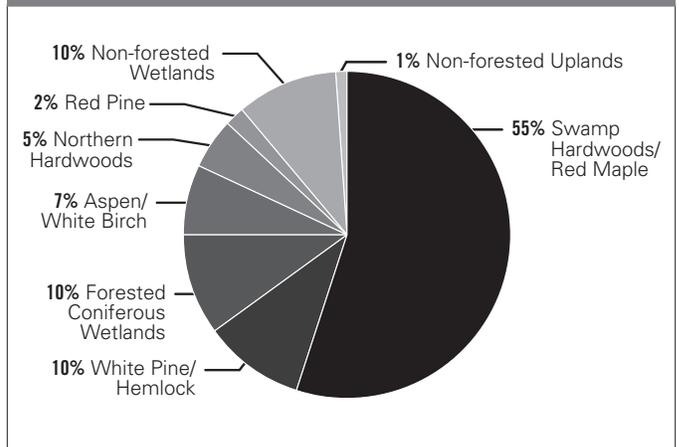
**Short Term Management Objectives**

- Maintain a somewhat remote and undeveloped, natural appearing setting with special emphasis on the 300 foot riparian zone along each river bank.
- Protect and enhance riparian habitats.
- Provide and enhance opportunities for solitude and primitive types of non-motorized recreation, particularly canoeing/kayaking.
- Develop and enhance a closed canopy older-growth forest of pine, hemlock, and northern hardwood species on appropriate sites. Retain and promote Eagle and Osprey nesting habitat.

**Land Management Prescriptions within the 300 foot Passive Management Zone**

- Generally, passively manage the 300 foot zone on each side of the Upper North Fork Flambeau River; except for control of invasive species, for salvage or restoration activities, and for management of public use facilities as

**FIGURE 2.20 UPPER NORTH FORK FLAMBEAU RIVER SCENIC AREA CURRENT LAND COVER**



**TABLE 2.24 UPPER NORTH FORK FLAMBEAU RIVER SCENIC AREA CURRENT AND PREDICTED COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested Types</b>				
Swamp Hardwoods/Red Maple	593	55%	593	55%
White Pine/Hemlock	108	10%	108	10%
Forested Coniferous Wetlands	108	10%	108	10%
Aspen/White Birch	75	7%	75	7%
Northern Hardwoods	54	5%	54	5%
Red Pine	22	2%	22	2%
<b>Non-forested Types</b>				
Non-forested Wetlands	108	10%	108	10%
Non-forested Uplands	11	1%	11	1%
<b>Total</b>	<b>1,078</b>	<b>100%</b>	<b>1,078</b>	<b>100%</b>

provided for in this section. Promote the growth and retention of large trees, favoring white pine, red pine, hemlock, and cedar for their high aesthetic value. Under-planting may be used to increase stocking levels of key species.

- Allow downed trees on the shore and non hazardous trees in the water for riparian and fish habitat through natural processes or by controlled tree drops if necessary.



- Actively manage the pine plantations through thinning to promote larger diameter trees and develop stands with a natural appearance.
- Generally do not salvage following natural disturbances. Limited salvage and restoration actions may be done when necessary to significantly improve the visual quality of the area. Leave abundant coarse woody debris. Plant if natural regeneration to desired species would not occur or if the regeneration would be unusually slow.
- Control invasive species as necessary to maintain aesthetic and ecological integrity; use appropriate methods that are consistent with the intent of this management area.

#### **Land Management Prescriptions outside the 300 foot Passive Management Zone.**

- Promote the growth and retention of large trees, favoring white pine, red pine, hemlock, and cedar for their high aesthetic value. Under-planting may be used to increase stocking levels of key species.
- Minimize the visual impact of forest management using aesthetic management techniques such as: restricting the size of cuts, conducting partial harvests, conducting small regeneration cuts with irregular boundaries.
- Salvage of trees damaged by wind, ice, fire, and insects may occur after consultation with managers from affected DNR programs and emphasize the improvement of the long-term visual quality of the area. Plant long-lived species following salvage if desired forest composition will not regenerate naturally.
- Actively manage the existing pine plantation through thinning and appropriate regeneration techniques to create stands with a natural appearance and larger diameter trees.
- Mechanical site preparation will be done as needed. Mowing, scarification, herbicide or other methods may be utilized to enhance regeneration.
- Use standard single tree selection (and no gap management) when little northern hardwood regeneration is present and less desirable species can dominate.
- Convert northern hardwoods to uneven-aged management where site and stand conditions allow.
- Even-aged management may be considered on northern hardwood sites where crop trees are lacking to achieve long-term uneven aged stand management. Even-aged management methods include overstory removal and shelterwood cuts.
- Use gap management techniques when abundant northern hardwood regeneration is present. Encourage natural regeneration through site preparation for mid-tolerant species such as basswood, ash, and birch.
- Retain Eagle and Osprey nesting trees.

#### **Recreation Management**

- Follow the requirements for a Type 2 Setting per NR44.07(5) for facility management, redevelopment, or renovation.
- Maintain Department managed water access landings in a wooded condition with healthy, vigorous trees. Plant native trees and shrubs as needed. Remove hazard trees as necessary.
- Reclaim to a stable, natural appearing condition: old campsites, acquired developments, or other sites that have been highly disturbed by human use.
- Future expansion of river recreational facilities (new access sites or adding primitive campsites) may be done through the master plan variance process. The recommendation shall be based upon two years of river use survey data and information collected from stakeholders and the public.
- Work in cooperation with the Upper Flambeau River Advisory Council, local citizens and townships with annual meetings during the implementation of the master plan for this area.
- Future administrative oversight for the management of this area may be conducted by the Division of Forestry, Flambeau River State Forest or the Division of Lands, Turtle Flambeau Flowage administrative unit. Until, and if formal management responsibilities are transferred, the FRSF will manage the area. Independent of administrative responsibility the objectives and prescriptions as outlined in this master plan will guide the future use, development, and management of this area.

**WILD RESOURCES MANAGEMENT AREA**



**WILD RESOURCES MANAGEMENT AREA**

The wild resource management classification is typically applied to undeveloped areas or areas that have the potential to be restored to a substantially wild condition. These locations are managed to provide and maintain land and water areas where natural ecological processes predominate and evidence of human cultural impact is low. There is little or no visible resource management activity and facility development is limited to primitive recreational uses.

Management activities within the wild resource area are limited but may be authorized for the purpose of protecting or enhancing the outstanding natural or aesthetic values and restoring the area’s wild character. Any management activities conducted within wild resource management areas are performed in a manner that will minimize the perception of human activity. Planting native vegetation appropriate to the site and limited vegetation cutting is authorized to achieve the management objectives. However, other types of vegetation management or timber harvesting activities are not authorized, except for the restoration activities specified in the master plan, the control of invasive species, and maintenance of

**TABLE 2.25 WILD RESOURCES MANAGEMENT AREA**

Area #	Wild Resources Management Area	Land Acres	Water Acres
20	Wild and Wilderness Lakes	733	437
	<b>Total</b>	<b>733</b>	<b>437</b>

authorized public use facilities. Road construction to support management and restoration activities within a wild resource area is limited to the degree possible and shall be temporary, minimally developed roads that are abandoned after completion of the management activity. Also, all pre-existing structures (i.e. roads, buildings, bridges, and dams) will be removed if they are not specifically identified in the master plan. Structures with historical value are an exception and may be maintained within the wild resource area. Management actions to control invasive species that threaten the area’s wild character or outstanding natural values are authorized. The authorized management response to suppress fire shall be identified in the master plan.



**WILD RESOURCES MANAGEMENT AREA**





## AREA 20: WILD AND WILDERNESS LAKES

There are five lakes designated as either a Wilderness Lake or Wild Lake. Wilderness and Wild lakes include provisions to provide a more remote recreational experience where human influences are minimal.

### Wilderness Lake; Bass Lake

Bass Lake, the only Wilderness Lake on the property, is a 95 acre deep, soft water seepage lake with a completely undeveloped shoreline and no motorized access that has long been recognized for its ecological and aesthetic qualities. The lake was designated by the Department as an Area of Special Natural Resource Interest (WDNR 2010a). The shoreline is largely forested, with areas of mature hemlock, white pine, and hardwoods connected to acid peatlands and other wetlands. This area comprises the lake itself and a ¼ mile area around the lake and also connects to Area 12 (Bass Lake Forest and Muskeg) where extensive wetlands connect to the lake and extend south for several miles. This area is designated as a Type 2 recreation setting. Passive management will predominate.

### Short and Long Term Objectives

- Preserve the remote and wild nature of Bass Lake while protecting the water quality, hydrology and aesthetic qualities of Bass Lake and its associated wetlands.
- Allow the forest surrounding the lake to develop old-growth characteristics through natural processes. Maintain high-quality examples of native communities such as Northern Mesic Forest, Black Spruce Swamp, Muskeg, Open Bog and Poor Fen.
- Maintain Bass Lake in a natural, undeveloped condition with minimal signs of human influence for fishing, nature study, and aesthetic appreciation.
- Provide remote, non-motorized, low-impact recreation (on water and land) in a wilderness setting with walk-in only access.

### Management Prescriptions

- Passively manage this area, except as provided below:
  - Limited vegetation cutting is authorized for clearing or maintaining designated trails. Leave the cleared material on site.
  - Actively suppress forest fires using the minimum actions required. Restore any soil disturbed to its original topography.
  - Monitor for insect, disease, and invasive outbreaks and take action only when there is a strong threat to forests outside of the management area.
  - Control invasive species as necessary; pesticide use is permitted.

**TABLE 2.26 WILD AND WILDERNESS LAKES**

Lake	Acres of Land	Acres of Water	Classification
Bass	347	95	Wilderness Lake
Swamp	205	250	Wild Lake
Hanson	102	53	Wild Lake
Champagne	19	6	Wild Lake
Little Pelican	60	33	Wild Lake
<b>Total</b>	<b>733</b>	<b>437</b>	

\*Lake acreages from WDNR forest reconnaissance data.

**AREA 20 LOCATOR MAP**

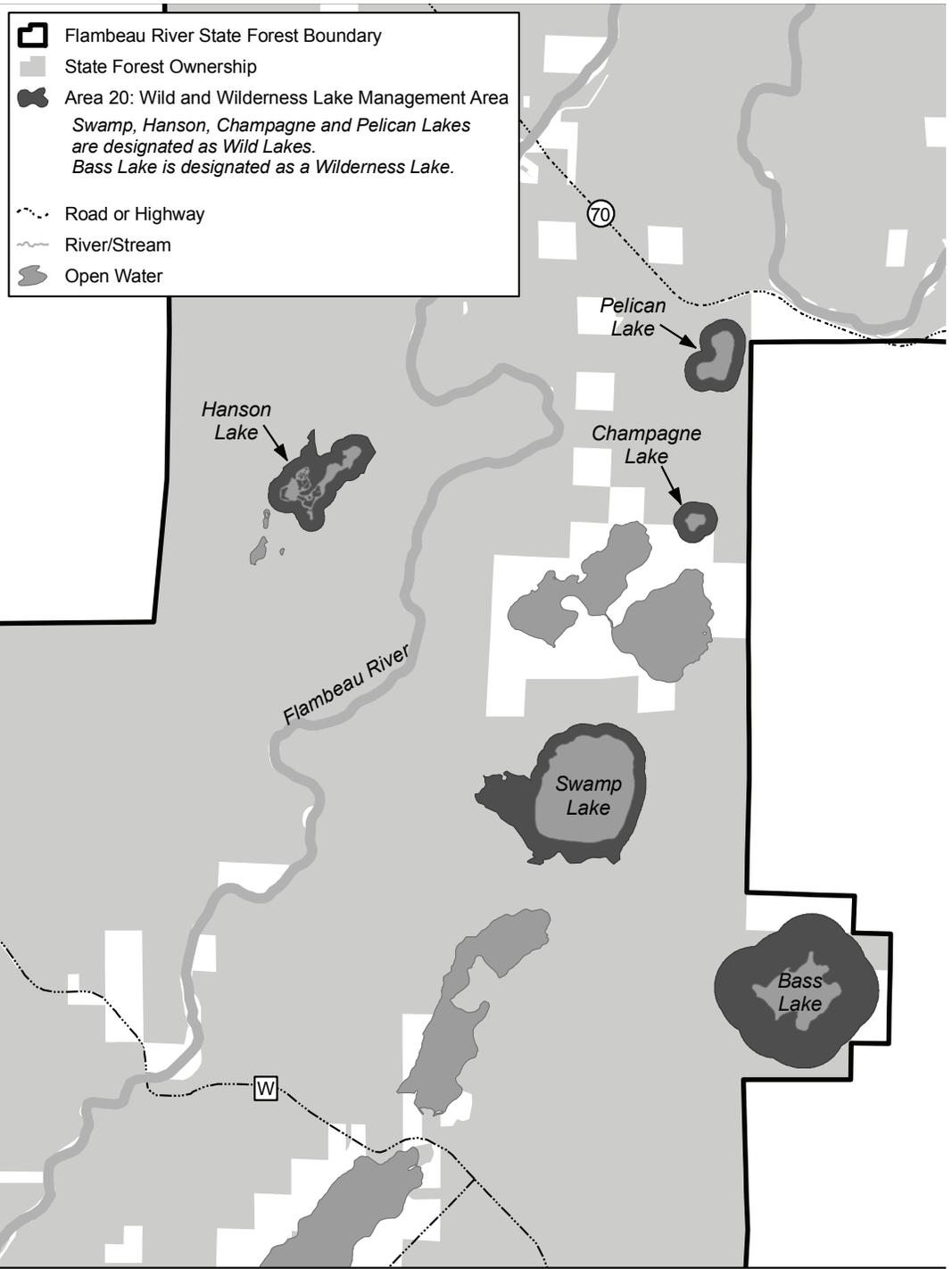


**TABLE 2.27 WILDERNESS LAKE - BASS LAKE COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested</b>				
Northern Hardwoods	216	62%	222	64%
Forested Coniferous Wetland	108	31%	108	31%
Hemlock	15	4%	14	4%
White Birch	8	2%	3	1%
<b>Total</b>	<b>347</b>	<b>100%</b>	<b>347</b>	<b>100%</b>



**MAP 2.19 WILD AND WILDERNESS LAKES**



FRSF323P  
February, 2010



The delineation of boundaries between all of the various land management classification is a general representation of those boundaries. More detailed delineation will be produced at the discretion of the department where authorized activities, management or improved on the ground information is available.





- Due to the area's wild resources classification, timber will generally not be salvaged after a natural disturbance (i.e. catastrophic wind, fire, disease, or insect damage). However, salvage may occur after a major disturbance if an interdisciplinary team determines salvage is advisable, considering the area's management objectives and wild resources classification.
- Designate the existing lake access road as a lightly developed trail. Do not maintain the aggregate surface; allow it to convert to a more natural condition over time. Convert existing road gate to a more natural vehicle barrier by using natural materials including boulders, soil berm or other natural materials. Abandon and restore all other roads and trails in the area to a natural condition.
- Restrict all motor vehicle access in this area (¼ mile of the lake), except to respond to health and safety or other emergencies, or to conduct authorized restoration or salvage activities. While the use of motor vehicles is not allowed for routine resource or recreation management; if necessary, mechanized equipment may be used to restore or redevelop the primitive access trail if it becomes severely damaged or degraded.
- Maintain Bass Lake as a non-motor boat lake to provide a quiet recreation setting, with no use of motor boats (gas or electric) permitted.

#### State Natural Area Designation

- The 743 acre (including 95 lake acres) Bass Lake Peatlands State Natural Area will include all of the Bass Lake Wilderness portion of this management area, as well as a portion of Area 12 (Bass Lake Forest and Muskeg).

#### Wild Lakes; Swamp Lake, Hanson Lake, Champagne Lake, and Little Pelican Lake

The shorelands of these wild lakes are primarily forested, with composition varying with site characteristics and the management history of the area. The wild lakes management area includes the lake and a 400 foot zone surrounding each lake; Swamp Lake is an exception as additional acreage is included in that management area (Map 2.19).

Wild lake management areas are undeveloped and passively managed. Motorized public access to the lake is limited to designated access roads, with all other motorized recreational vehicle use within the Wild Lake Management Zone prohibited. Motor vehicles may be used when needed to respond to significant health and safety emergencies or to accomplish necessary land management activities as specified in the master plan.

There are four wild lakes on the forest: Swamp Lake (250 acres), Hanson Lake (53 acres), Champagne Lake (6 acres), and Little Pelican Lake (33 acres). Two of the lakes, Hanson and Swamp, will be managed in association with native community management areas 10 and 11, respectively, and are closely tied to wetland natural communities in these areas.

Both Swamp and Champagne Lakes have forested coniferous wetlands which can include balsam fir, cedar, black spruce, and tamarack as their dominant cover type. The non-forested areas of Swamp Lake include upland brush and grasses. The non-forested areas of Champagne Lake are primarily wetlands such as kegs or sites with tag alder.

Hanson Lake and Little Pelican Lake both have northern hardwoods as their dominant forested cover type. However, Hanson Lake has upland brush and grasses as the primary cover type in the non-forested areas whereas the non-forested areas of Little Pelican Lake are primarily wetlands including kegs and sites with tag alder.

#### Short and Long Term Objectives

- Preserve the remote and wild nature of the Wild Lakes while protecting the water quality, hydrology and aesthetic qualities of the lakes and surrounding areas.
- Allow the forest surrounding the lakes to develop old-growth characteristics through natural processes. Maintain high-quality examples of native communities near Swamp Lake.
- Maintain the lakes in an undeveloped condition, with minimal signs of human influence for recreational, ecological, and habitat values.
- Provide non-motorized recreation for low-impact activities such as boating, canoeing, or fishing, where appropriate.

#### Management Prescriptions: All Wild Lake Areas

- Largely passively manage these areas, allowing natural processes to predominate. Active management is limited to the following:
- Maintaining designated access roads, trails, and campsites at the prescribed level of development for each lake.
- Conducting forest and habitat restoration (i.e. thin pine plantations to restore them to a more natural appearing condition) when and as prescribed for the individual lakes in this plan (below).
- Implementing limited shoreline tree-drops when needed to add coarse woody debris for restoration and enhancement of aquatic habitat. This shall be done in a manner that maintains a generally natural appearance along the



- shoreline, as required for a Wild Resources Management Area (NR 44.06 (10)) and Type 2 Recreational Use Setting.
- Abandoning and restoring non-designated roads and trails to a natural condition.
  - Actively suppressing forest fires using the minimum actions required. Restore any soil disturbed to its original topography.
  - Monitoring for insect, disease, and invasive outbreaks and taking action only when there is a strong threat to forests outside of the management area.
  - Controlling invasive species as necessary; pesticide use is permitted.
  - Conducting timber salvage in limited circumstances. Due to the area's wild resources classification, timber

will generally not be salvaged after a natural disturbance (i.e. catastrophic wind, fire, disease, or insect damage). However, salvage may occur after a major disturbance if an interdisciplinary team determines salvage is advisable, considering the area's management objectives and wild resources classification.

- Public use of motor boats on wild lakes is not authorized. Public motor vehicle use on wild lake areas are authorized only on access roads designated in the master plan. Motorized vehicles and watercraft are not allowed for routine management activities except for responding to health and safety or other emergencies, or to conduct restoration and collection activities; such as fishery habitat restoration and monitoring.





**Additional Management Prescriptions for Individual Lakes**

*Swamp Lake*

- Maintain the existing parking area (located approximately ½ mile from Swamp Lake) at the gated end of Tower Hill Road, a moderately developed forest road that is open to the public.
- Utilize the existing woods road and the trail that extends beyond the gated parking area as a lightly developed trail route to provide public walking access to Swamp Lake.

*Hanson Lake*

- Maintain Hanson Lake South Road, an existing road that parallels Hanson Lake and enters and traverses the wild lake zone for about 500 feet, as a moderately developed forest road open to the public.
- Provide minimal roadside parking for up to two vehicles beyond the view of the lake.
- Establish a lightly developed trail to provide public walking access to the lake from the vehicle parking area.

*Champagne Lake*

- Restrict all public motor vehicle use. No road, trail, or parking developments are planned.

*Little Pelican Lake*

- Retain the existing Pelican Road, a public town road that crosses the wild lake area.
- Provide minimal roadside parking for up to two vehicles beyond the view of the lake.
- Maintain the existing lightly developed walking trail to the lake from the vehicle parking area.

**STATE NATURAL AREA DESIGNATIONS**

- A portion of the 302 acre (including the 53 acre Hanson Lake and other aquatic features) Hanson Lake Wetlands State Natural Area is included in this management area (Hanson Lake Wetlands, Area 10).
- The 1,042 acre (including 250 lake acres) Swamp Lake State Natural Area will include all of the Swamp Lake portion of this management area, as well as a portion of Area 11 (Swamp Lake Forest).

**TABLE 2.28 WILD LAKE - SWAMP LAKE COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested</b>				
Forested Coniferous Wetlands	142	69%	141	69%
Hemlock	2	1%	4	2%
Northern Hardwoods	33	16%	33	16%
Swamp Hardwood	7	3%	6	3%
White Birch	14	7%	8	4%
Balsam Fir	0	<1%	6	3%
<b>Non-Forested</b>				
Wetlands	7	3%	6	3%
<b>Total</b>	<b>205</b>	<b>100%</b>	<b>205</b>	<b>100%</b>

**TABLE 2.29 WILD LAKE - HANSON LAKE COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested</b>				
Aspen	41	40%	36	35%
Northern hardwoods	58	57%	58	57%
Balsam Fir	0	<1%	5	5%
<b>Non-Forested</b>				
Uplands	3	3%	3	3%
<b>Total</b>	<b>102</b>	<b>100%</b>	<b>102</b>	<b>100%</b>



**TABLE 2.30 WILD LAKE -  
CHAMPAGNE LAKE COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested</b>				
Northern hardwoods	4	21%	4	21%
Forested Coniferous Wetlands	14	74%	14	74%
<b>Non-Forested</b>				
Uplands	1	5%	1	5%
<b>Total</b>	<b>19</b>	<b>100%</b>	<b>19</b>	<b>100%</b>

**TABLE 2.31 WILD LAKE -  
LITTLE PELICAN LAKE COVER TYPES**

Cover Type	CURRENT		PREDICTED 50 YEAR	
	Acres	% Total	Acres	% Total
<b>Forested</b>				
Aspen	4	7%	2	3%
White Birch	12	20%	3	5%
Northern Hardwoods	40	67%	42	70%
Balsam Fir	0	<1%	9	15%
<b>Non-Forested</b>				
Wetlands	4	7%	4	7%
<b>Total</b>	<b>60</b>	<b>100%</b>	<b>60</b>	<b>100%</b>



**RECREATION MANAGEMENT AREA**



**RECREATION MANAGEMENT AREA**

The purpose of a recreation management area is to provide and maintain land and water areas and facilities for outdoor public recreation or education. Objectives and prescriptions incorporate future desired landscape conditions, management activities, and policies for the protection, maintenance, enhancement, or restoration of the visual characteristics important to the recreational use of the area.

The general forest management prescriptions by primary forest type are authorized unless restricted by a prescription within the management area itself.

**TABLE 2.32 RECREATION MANAGEMENT AREA**

Area #	Recreation Management Area	Acres
21	Flambeau Forest Headquarters and Day-Use Area	135
	<b>Total</b>	<b>135</b>



**RECREATION MANAGEMENT AREA**





## AREA 21: FLAMBEAU RIVER RECREATION AREA AND FOREST HEADQUARTERS

### Overview and Summary of the Area

This area is comprised of 135 acres on both sides of the North Fork Flambeau River at County Highway W. Located here is the State Forest Headquarters building, and maintenance facilities (shops and garages). West Lane, a town road, also traverses this area and is a primary southern route for travel within the forest. A new administrative building will be built to provide administrative office space and general customer services. The current building will be converted into a small, self guided interpretive center. A variety of other visitor services will also be provided in this management area, including a restroom-shower building, picnic facilities barrier-free river access and a small vehicle-accessible campground.

Landuse Classification: This management area is classified as a Recreation Management Area - Type-4 recreational use setting.

### Long and Short Term Objectives

- Provide facilities for state forest administrative and operations; including but not limited to office and meeting space, storage, and maintenance facilities.
- Serve as the central location for customer services; including general visitor information, education and interpretation. Additionally, provide centralized shower facilities that are accessible to river users and other forest visitors alike.
- Provide a convenient river access for groups and individuals with canoes, kayaks and small boats while maintaining a rustic and lightly developed appearance of the river shoreline. The level development here may be at a higher level than at the other river access points.
- Provide rustic, near-river vehicle accessible camping, and group camping opportunities.
- Provide and maintain a largely natural appearing, aesthetic setting.

### Management Prescriptions

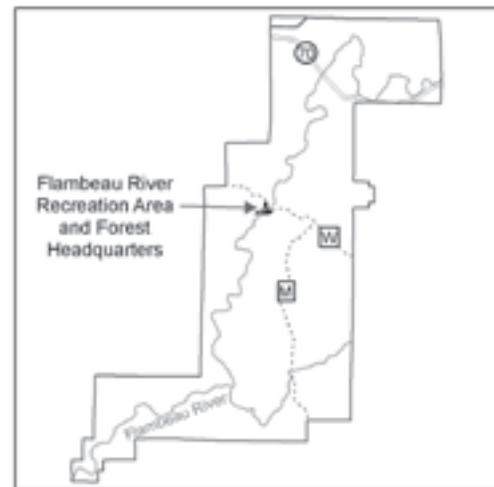
#### Vegetation Management

- Promote the growth and retention of large white pine, yellow birch, cedar, and other northern hardwood species where appropriate. Remove diseased and defective trees that are hazardous to staff or the public. Provide maintained grass areas as appropriate.
- Conduct additional management activities as needed to support the use and purpose of the area, such as mowing, brushing, cutting, and controlling invasives.

### AREA 21 SUMMARY

- ▲ 135 acres
- ▲ Management area for administrative buildings, including the Forest Headquarters, and recreational uses.

### AREA 21 LOCATOR MAP



### Administration and Operations

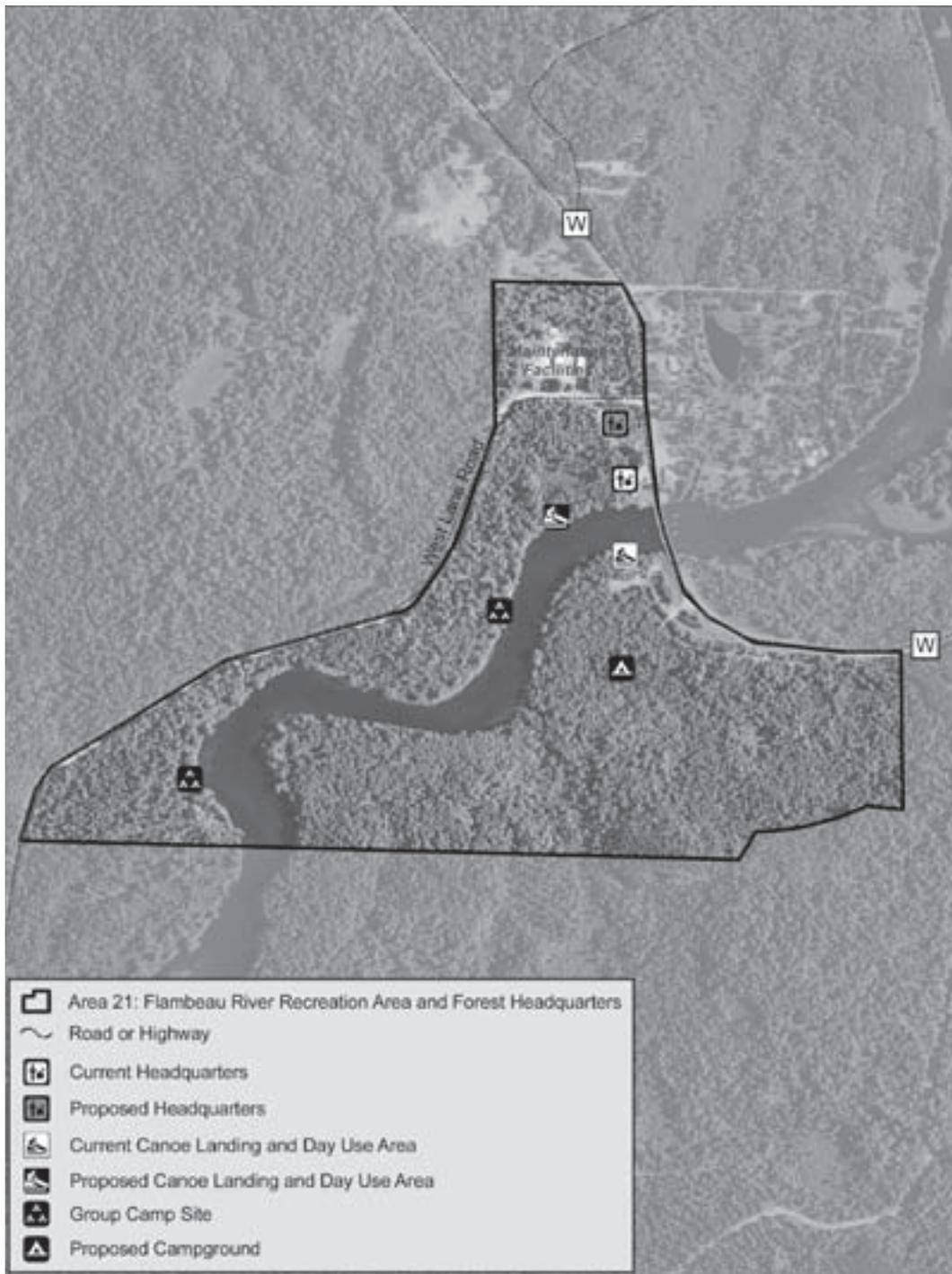
- Build a new forest headquarters building and visitor station with space administration functions as well the delivery of general visitor information services.
- Maintain and adjust and necessary storage and maintenance facilities to support Department operations.

Note: This master plan does not control the specific operations or development of facilities within this area. Administrative and operational facilities are managed under separate state administrative processes. Historic buildings are managed according to the requirements of DNR manual code 1810.1.



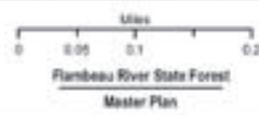
# FLAMBEAU RIVER RECREATION AREA AND FOREST HEADQUARTERS

MAP 2.20 FLAMBEAU RIVER RECREATION AREA AND FOREST HEADQUARTERS



- Area 21: Flambeau River Recreation Area and Forest Headquarters
- Road or Highway
- Current Headquarters
- Proposed Headquarters
- Current Canoe Landing and Day Use Area
- Proposed Canoe Landing and Day Use Area
- Group Camp Site
- Proposed Campground

FRSF320P  
March, 2010



The delineation of boundaries between all of the various land management classification is a general representation of those boundaries. More detailed delineation will be produced at the discretion of the department where authorized activities, management or improved on the ground information is available.





#### *HQ Visitor Services Area*

The new visitor services area adjacent to the HQ building will be a focal point offering expanded information/education facilities, picnicking, toilet/shower building, and will be fully accessible by river or vehicle.

- On the west side of the river in the vicinity of the new Headquarters building, develop a small picnic area (up to five tables) and a restroom/shower building. The shower building will be available for all forest visitors.
- Convert the existing forest headquarters building (cabin) to a visitor center providing self-guided exhibits and interactive learning experiences. Develop a moderately developed (barrier-free) nature trail on a suitable site in the area.
- Provide parking for up to 40 vehicles (including ATVs and Snowmobiles) for day-use area and new headquarters building visitors.
- Develop a barrier-free watercraft landing on the west bank of the river to provide access to the Headquarters Building and the public use facilities on the site.

#### *East-bank Hwy W Landing*

The existing Hwy W landing across the river from the forest headquarters will be redesigned and improved to provide more space for launching or landing canoes and kayaks and to make it barrier free.

- Redevelop the landing to provide barrier-free watercraft access, restrooms and parking; a lightly developed ramp (improved approach and sloped) for launching small, trailered boats, additional landing space for multiple canoes or kayaks, drinking water (hand pump or pressurized), and an informational kiosk.
- Provide parking for 10 vehicles plus 4 vehicles with trailers. A loading area may be provided near the river's edge but parking will be located so as to not be readily visible from the river.

#### *River's-edge Campground*

A new small, rustic family campground will be developed on the east side of the river across from the forest headquarters. This campground will accommodate river users arriving late in the day and provide a convenient day-trip opportunity and disperse river users.

- Construct a minimally developed, 5-10 campsites rustic family campground for use by up to six persons per site. Some campsites may be walk-in only accessible. There will be 100 to 200 feet of separation distance between campsites. Connect the lightly developed campground access road to the east Highway W river landing.
- If a need is determined, one to two vehicle accessible group campsites (maximum capacity 15 persons) may be developed in the campground or on another location within this management area on a site with sufficient separation distance to minimize conflicts between the group and other campers or visitors.
- Provide a hand pump or pressurized water source, trash receptacles, vault type rest rooms.
- If a need is determined, construct a small, minimally developed carry-in canoe/kayak landing for campground users.
- Maintain RV dumping station within this management area (Area 21).
- Add an overflow parking area as needed.

#### *Semi-primitive group Campsite*

- Provide two semi-primitive, riverside group campsites for use by river travelers. Follow the design management criteria for the semi-primitive group campsites located in the Scenic River Management Area (Area 18).



# FLAMBEAU RIVER RECREATION AREA AND FOREST HEADQUARTERS



STATE NATURAL AREA DESIGNATIONS



STATE NATURAL AREA DESIGNATIONS

State Natural Areas (SNAs) are part of a statewide system of sites identified for the purposes of ecological research, education, and to assure the full range of ecological diversity for future generations. After the designation of Land and Recreation Management Areas, and identifying their specific resource management prescriptions, the state forest examined opportunities to further protect areas with exceptional natural features. The Department evaluated sites that could contribute to critical habitat for rare species, provide ecological reference areas, or which contain significant geological or archaeological features.

STATE NATURAL AREA PROGRAM OBJECTIVES

Locate, establish, and preserve a system of SNAs that as nearly as possible represents the wealth and variety of Wisconsin’s native landscape for education, research, and long-term protection of Wisconsin’s biological diversity for future generations.

FRSF STATE NATURAL AREAS

The FRSF previously had two SNA designations, the Flambeau River Hardwood Forest - 370 acres and Lake Of The Pines Conifer-Hardwoods - 156 acres. The current master plan designates six additional SNAs with area modifications to the previous two. See Table 2.33 for SNA names, location and acreages.

North Fork Pines (87 acres)

One of the two largest and best quality examples of white pine forest on the property, this area features a block of older, natural-origin pine, an uncommon type in the landscape. Although smaller, this area exhibits larger trees, higher canopy closure, a different landscape context, and more mesic conditions than Oxbo Pines. This SNA will be contained within the North Fork Pines Native Community Management Area (Area 8) and will be managed passively to develop old-growth forest attributes.

Oxbo Pines (287 acres, includes a 4 acre lake)

Numerous mature pines are scattered throughout this area, and there are a few places with significant blocks of natural origin mature pine forest. This site is generally drier than North Fork Pines and has a mixed composition in many places, including species associated with Boreal Forest in some areas.

Several wetlands communities are present, including acid peatlands surrounding a small bog lake. This SNA will be contained within the Oxbo Pines Native Community Management Area (Area 9) and will utilize both active and passive management. The SNA will include two ecological reference areas totaling 160 acres.

Hanson Lake Wetlands (302 acres, includes a 47 acre lake and other aquatic features)

Designed to protect water quality and maintain native wetland and aquatic communities, this SNA encompasses a variety of open and forested wetlands, as well as several small shallow lakes and ponds with fluctuating shoreline habitats. The SNA will comprise portions of the Hanson Lake Complex (Area 10) and Hanson Lake (Wild Lake, Area 20) management areas and will be passively managed.

Swamp Lake (1,042 acres, includes a 250 acre lake)

Surrounding a large, shallow softwater drainage lake and the largest contiguous block of mature hemlock on the property, this SNA is designed to develop and maintain a significant block of old-growth hemlock hardwood forest while protecting several native wetland and aquatic communities. The SNA will comprise portions of the Swamp Lake Forest (Area 11) and Swamp Lake (Wild Lake, Area 20) management areas and will be passively managed.

TABLE 2.33 STATE NATURAL AREAS

SNA Name	Management Area	Acreage	Upland Acres
North Fork Pines	Area 8 - North Fork Pines	87	87
Oxbo Pines	Area 9 - Oxbo Pines	287	153
Hanson Lake Wetlands	Area 10 - Hanson Lake Complex and Area 20 - Hanson Lake (Wild Lake)	302	39
Swamp Lake	Area 11 - Swamp Lake Forest and Area 20 - Swamp Lake (Wild Lake)	1,042	377
Bass Lake Peatlands	Area 12 - Bass Lake and Muskeg and Area 20 - Bass Lake (Wild Lake)	742	301
Skinner Creek Hardwoods	Area 14 - Flambeau Forks Interior Forest	228	192
Lake of the Pines Conifer Hardwoods	Area 15 - Lake of the Pines Conifer Hardwoods	53	53
Flambeau River Hardwood Forest	Area 16 - Flambeau River Hardwood Forest	266	261
<b>Total</b>		<b>3,007</b>	<b>1,463</b>

Total acres include 678 of open water.

**STATE NATURAL AREA DESIGNATIONS****Bass Lake Peatlands (742 acres, includes a 95-acre lake)**

Consisting mostly of extensive acid peatlands that connect to an undeveloped Wilderness Lake, this area is designed to protect hydrology, high quality wetlands, and provide rare species habitat. The SNA will comprise portions of the Bass Lake and Muskeg (Area 12) and Bass Lake (Wilderness Lake, Area 20) management areas and will be passively managed.

**Skinner Creek Hardwoods (228 acres)**

Located within a large block of rich, mature, maple-basswood dominated Northern Mesic Forest, this area exhibits the richest spring flora known from the property, with many species at or near their northern range limits. Several unique microhabitats, including Ephemeral Ponds and Forested Seeps, are embedded within mature forest that is approaching old-growth in some areas. This SNA comprises a portion of the Flambeau Forks Interior Forest Native Community Management Area (Area 14). The SNA will be passively managed to develop old-growth forest attributes; this is one of three complementary management strategies planned for Area 14.

**Lake of the Pines Conifer - Hardwoods (53 acres)**

One of the two original SNAs on the forest designated to protect relict old-growth, this SNA has retained mature trees in a few areas but is now mostly comprised of trees originating from the 1977 windstorm. The area has value for long-term monitoring of an old-growth forest recovering from a windstorm, as well as its connection to the lake and potential

rare species habitats. The original SNA boundary has been significantly modified: 103 acres that were salvaged following the 1977 windstorm have been removed from the SNA. This SNA will be contained within the Lake of the Pines Conifer Hardwoods Native Community Management Area (Area 15) and will continue to be passively managed.

**Flambeau River Hardwood Forest (266 acres)**

Comprising a portion of the former "Big Block," once the largest state-owned relict old-growth stand in Wisconsin, this area comprises the only non-salvaged portions of the original SNA following the 1977 windstorm. The area has a long history of ecological study, both before and following the 1977 storm, and provides a unique opportunity to examine the recovery of a Lake States old-growth forest following catastrophic wind disturbance. The original SNA boundary has been significantly modified, removing areas that were salvaged following the 1977 windstorm. Salvaged portions of the original State Natural Area have been incorporated into Area 6 (Big Block Forest Production Area) with special considerations given to existing long-term research plots established to compare salvaged and unsalvaged portions of the Big Block (Lang et al. 2008). This SNA will be contained within the Flambeau River Hardwood Forest Native Community Management Area (Area 16) and will continue to be passively managed.



## STATE NATURAL AREA DESIGNATIONS

### STATE NATURAL AREA MANAGEMENT AND RECREATIONAL ACTIVITIES

The State Natural Area designation does not change the underlying management objectives, prescriptions, or authorized recreation and management activities outlined in this master plan for each land management area. There are no additional management prescriptions associated with these State Natural Areas. See the specific Management Areas for detailed maps showing the location of SNA overlay zones.

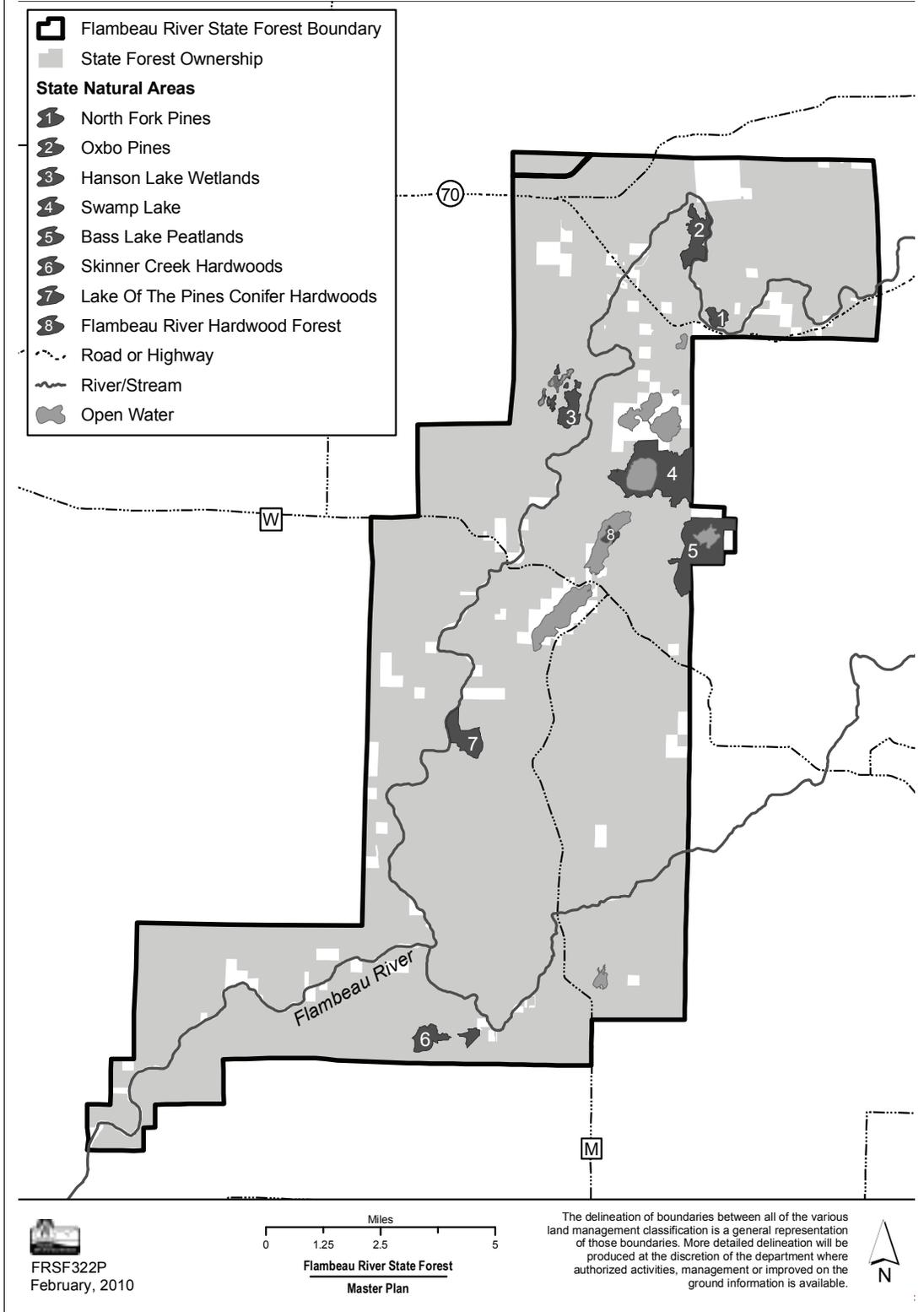
### DESIGNATION PROCESS AND AUTHORITY

The process for selecting and designating SNAs is determined by cooperative efforts between the Division of Forestry and the Bureau of Endangered Resources. The master planning process for State Forests requires that the goals set by the Division of Forestry be considered before the Bureau of Endangered Resources submits candidate sites for SNA designation. The Wisconsin State Natural Areas Program oversees the establishment of SNAs and is advised by the Natural Areas Preservation Council. See Appendix A for details on the designation process for State Natural Areas.



STATE NATURAL AREA DESIGNATIONS

MAP 2.21 STATE NATURAL AREA DESIGNATIONS



## MANAGEMENT OVERLAY ZONES



### MANAGEMENT OVERLAY ZONES

An overlay zone is a planning tool that allows for additional management prescriptions that span multiple management areas. It is most often used when there is a particular resource that requires additional prescriptions to meet the objectives of the zone or area. The objectives and management prescriptions for overlay zones are in addition to those of the underlying management area.

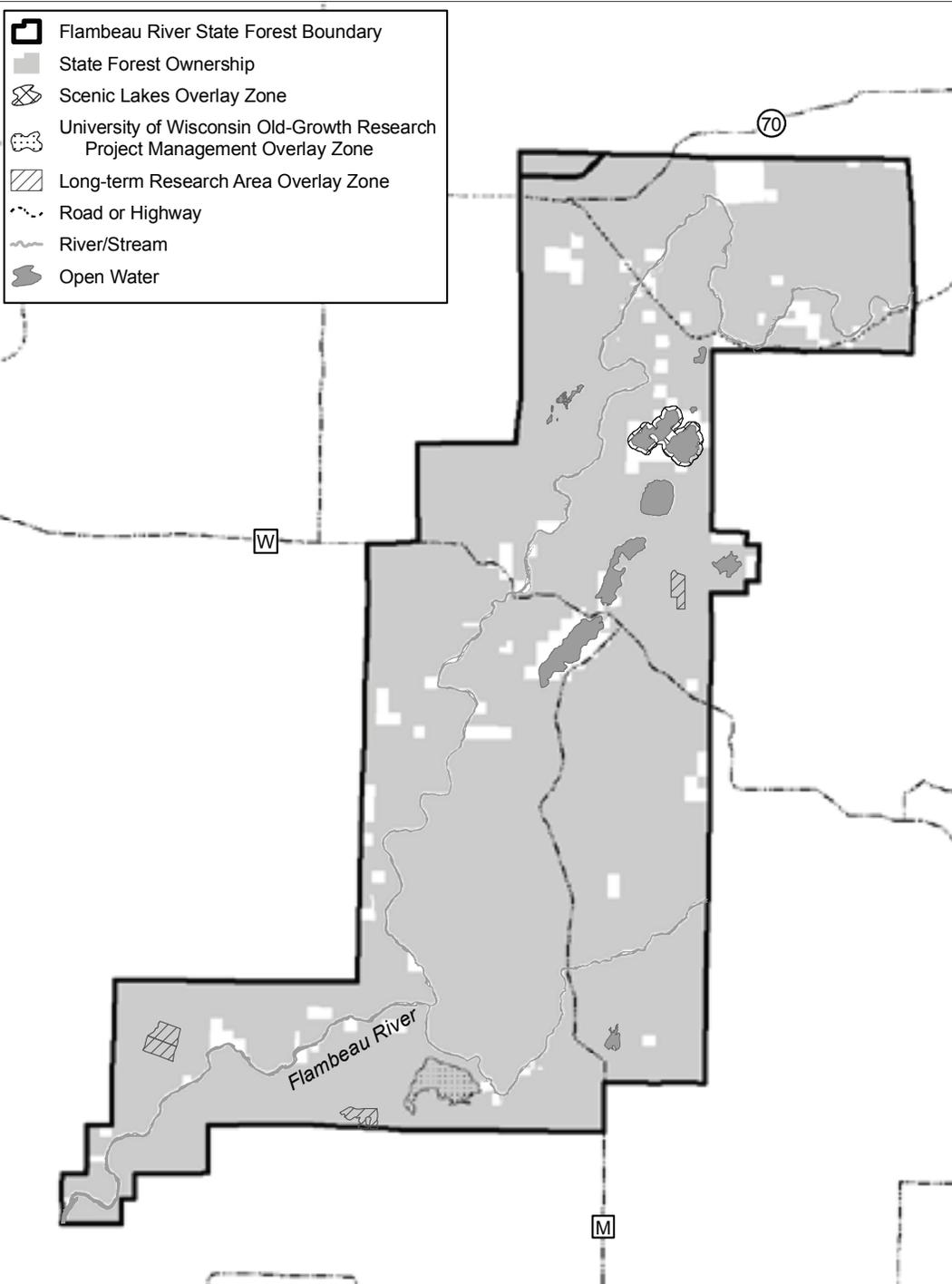
**TABLE 2.34 MANAGEMENT OVERLAY ZONES**

Management Overlay Zones	Acres
Scenic Lakes Management Overlay	281
Long-Term Research Areas Overlay	1,200
<b>Total</b>	<b>1,481</b>



MANAGEMENT OVERLAY ZONES

MAP 2.22 MANAGEMENT OVERLAY ZONES



  
FRSF325P  
March, 2010



The delineation of boundaries between all of the various land management classification is a general representation of those boundaries. More detailed delineation will be produced at the discretion of the department where authorized activities, management or improved on the ground information is available.



## SCENIC LAKE MANAGEMENT OVERLAY ZONE

Due to a statewide policy change that tightened the criteria for allowable uses on designated wilderness and wild lakes, 2 lakes that were designated under the 1980 plan no longer qualify for designation without changing their long established pattern of use. Under the revised forest plan they will be assigned a classification that fits their current conditions; thus, allowing all of the present uses and similar management objectives to continue.

The management surrounding the lakes would remain similar to their previous designated management objectives. The Scenic Lake Overlay Zone objectives are to protect, maintain and enhance for long-term public enjoyment. Due to significant or special public use of these areas, a primary concern is management for aesthetics, or retaining the unique qualities or outstanding scenic beauty.

### Scenic Lake; Mason Lake and Evergreen Lake

#### Long and Short Term Objectives (100 and 50 years)

- Maintain and enhance the natural appearing and generally undeveloped landscape of each lake.
- Assure public boat access to Mason and Evergreen Lakes.

#### Resource Management Prescriptions

- Manage the forest within the scenic management zone (that area within 400 feet of the lake shore) to favor a mixed composition of species with emphasis on larger, longer-lived trees. Maintain an abundant amount of snags and coarse woody debris. Underplant to speed the conversion to longer-lived species.
- Locate and design development to be harmonious with the landscape.
- The development of new primitive campsites is authorized.
- Non-motorized trails are allowed within the Scenic Lake Management Zone.
- Generally, leave natural disturbances to naturally regenerate. Consider salvage when the visual qualities along the lake shore can be enhanced and erosion potential can be mitigated. Plant following salvage if the desired natural regeneration would not occur.
- When harvesting timber or performing other management activities within this zone, modify the standard prescriptions to minimize the visibility of management activities as viewed from the water and access roads using aesthetic management techniques such as: restricting the size of cuts, conducting partial harvests, conducting small regenerative cuts with irregular boundaries.

- The use of motorized vehicles, watercraft, or other equipment for management activities is not limited. Other management activities that may be conducted include herbicide application, burning, installation of fish habitat improvement devices—including tree-drops along the shoreline, trail or road construction, erosion control, and removal of hazard trees in public use areas.
- If the current private boat access to Mason and Evergreen Lakes is closed to public use, the Department will develop a public watercraft access site if a suitable site is available.
- If developed, the site shall be a lightly developed access with a lightly developed access road (NR 44 standard) with up to five parking spaces. Parking shall be located so that vehicles are not visible from the lake, preferably outside of the 400 foot scenic management zone. If and when developed, public input will be sought regarding the specific site location and level of development.

## LONG TERM RESEARCH OVERLAY ZONES

Public lands provide a wide range of opportunities, including support for research. The Department partners with universities, government, and non-governmental 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. Long-term Research Zones on the FRSF are discussed below.

There are currently two long-term research projects occurring on the forest that will continue under the new master plan. Both research projects focus on old-growth forests and associated characteristics in northern hardwood forests.

### MANAGED OLD-GROWTH SILVICULTURAL STUDY (MOSS)

This is a 50 year research study being conducted by the Department. These stands are part of an experiment to study managed old growth characteristics and the potential effects of different silvicultural methods on ecological and social objectives. The stands will also provide demonstration areas for training. Research focuses on forest management of northern hardwoods to accelerate old growth characteristics, which include coarse woody debris and manipulating the size of canopy gaps. Silvicultural methods used include shelterwood harvests, thinnings, and gap creation. There are 4 areas, three for research and one control, totaling 498 acres. This overlay is found in Area 1: Exeland Plains Hardwoods (381 acres) and

**MANAGEMENT OVERLAY ZONES**

Area 5: Jump River Hardwoods (117 acres). See individual area write-up for underlying management.

**Long and Short Term Objectives**

- Enhance or accelerate the development of old-growth characteristics through active management except for control stands.
- Establish canopy gaps in sizes deemed to meet research objectives
- Maintain control stands as baseline comparison
- Promote adaptive research and provide research opportunities for the biological sciences and natural resource management communities consistent with the underlying area land management objectives.

**Management Prescriptions**

- Using standard silvicultural methods such as shelterwood cuts, thinnings, or group selection and installation of canopy gaps to enhance or accelerate old-growth characteristics.

- Favor hemlock, yellow birch, ash, basswood, red oak, black cherry, and other uncommon tree species when possible on appropriate sites for compositional diversity.
- Reserve tree and snag retention for coarse woody debris.
- Evaluate stands in (2018-2023) with the potential application of more gaps and stand-wide thinning.
- Passively manage control stands.
- In the event of a windstorm or fire, salvage logging at this site requires written approval by the division administrator for the Division of Forestry and the Bureau of Enforcement and Science.
- New or additional research in these areas must be agreed upon by the Division of Forestry.
- Use of BMPs for water quality to protect aquatic features.
- Protection of ephemeral ponds.

**UNIVERSITY OF WISCONSIN  
OLD-GROWTH RESEARCH PROJECT**

This is a 50 year research study conducted by the University of Wisconsin-Madison's Department of Forest and Wildlife Ecology. The area originally consisted of core research area (687 acres) and a 100 meter buffer (125 acres). This area



## MANAGEMENT OVERLAY ZONES

overlays the Flambeau Forks Interior Forest Native Community Management Area (see area 14 write-up for underlying management).

### Long and Short Term Objectives

- Provide research on composition, structure and function of managed and old growth forests.
- Provide demonstration areas and educational opportunities.
- Promote adaptive research and provide research opportunities for the biological sciences and natural resource management communities.

### Management Prescriptions

Additional research not identified below can be implemented after consultation and consensus between the Department and the research organization. The research will be authorized by a written agreement between the two parties.

#### *Research Description*

The experimental plan consists of five coarse woody debris treatments and three canopy opening (gap) treatments, set up in a full factorial design resulting in 15 treatments in total. The coarse woody debris treatments include a coarse woody debris control, a disturbance control, removal of all coarse woody debris, addition of ½ of the coarse woody debris levels expected in old-growth forests, and addition of the full complement of coarse woody debris expected in old-growth stands. Each treatment will be applied to an 80m<sup>2</sup> (1.6 acre) plot and will be replicated three times for a total of 45 plots. Plots will be randomly assigned to treatments. A 20 meter untreated strip will be left between adjacent plots, and an untreated zone will be maintained near the perimeter of the research area. On some plots, coarse woody debris will be needed in addition to the timber cut within the gap treatments. This material will be cut from the outer untreated zone of the research area and moved on-site. If there is an insufficient amount of material available within the research area, it will be purchased from willing sellers either on or off the Flambeau River State Forest. Gap treatments, like the coarse woody debris treatments, are

also based on characteristics of old-growth forests. The two gap treatments will include one-half the number of gaps, and the full number of gaps equivalent to that expected in old-growth forests. Pretreatment data will be collected during the first two years of the study with early results being generated by the 3rd and 4th years. Longer-term results are anticipated after ten years, and monitoring is expected to continue for at least an additional 45 years, for a total of 50 years.

The research area will accommodate the 45 treatment plots, as well as a zone around them that would serve as a source for coarse woody debris additions to some treatment plots, and would also afford protection from increased levels of light and wind, and from inadvertent vehicle incursion. A buffer of 100 meters (125 acres) surrounding the research area will be managed by selection harvest rather than clearcutting. Access trails to the research area will be closed to reduce the likelihood of illegal off-road vehicle travel and deer baiting. The trail closures are consistent with past actions taken by the Flambeau River State Forest as needed to protect resources. Existing access is for recreation, logging, and administrative use, and is not needed to access private property. Foot travel into the area will continue to be allowed. The research project will not impact any areas within the River Wilderness Zone (0.25 miles either side of the Flambeau River), and no private lands will be affected.

If the research area is impacted by disturbance events (i.e., wind or wildfire) during the course of the study, it will remain a research area until evaluation by all cooperators determines that it is no longer of value for research. It would then follow the master plan objectives and prescriptions for Area 14 (Flambeau Forks Interior Forest Native Community Management Area).

## GENERAL FOREST MANAGEMENT PRESCRIPTIONS BY PRIMARY FOREST TYPE



### GENERAL FOREST MANAGEMENT PRESCRIPTIONS BY PRIMARY FOREST TYPE

For each forest-type there is a specific set of management techniques which favor the maintenance and regeneration of a given type. The following describes the general management prescriptions to be used for each primary forest type on the Flambeau River State Forest. Each prescription will be applied wherever management for that specific forest type is an objective, as stated in the individual management areas later in this chapter. The individual area management plans may modify or limit these general prescriptions to fit the area.

#### ASPEN DOMINATED MIXED FOREST

This forest type is an early successional forest that requires disturbance and abundant sunlight to regenerate. It typically will be managed with clearcuts and modified clear cut harvests of various shapes and sizes occurring at intervals of 45-60 years to maintain this forest type. Maintaining age class diversity of aspen will enhance the opportunity to accommodate a variety of wildlife species.

#### General Management Prescriptions

Depending on whether the stand is pure aspen or a mixed aspen community, different management activities will be used to move the forest toward the future desired condition.

- When planning individual management actions, consider the ecological values through a landscape view of aspen's role on the property. A variety of age classes and stand sizes across the landscape provide value to wildlife and aesthetics. Some considerations in landscape planning include the age classes and patch sizes across the landscape, the natural disturbance regime in the area, the surrounding cover types and management.
- Harvest and regenerate aspen naturally, primarily through clearcutting. In stands where the objective is to develop or maintain mixed species the primary management strategy to use "coppice with standards", which means to harvest aspen trees but retain individual uncommon or locally difficult to regenerate (oak, hemlock, red pine, and white pine trees) within a stand. Retention of standards provides additional seed source to the area and increases the structural diversity of the stand.
- Harvest aspen, white birch, red maple and other short-lived species in the stand, leave red oak, hemlock, red

pine, white pine and individual trees of high value to wildlife, forest diversity and aesthetics.

- Research alternative regeneration techniques for the aspen cover type. Specifically, determine if selective harvest or disturbance may reduce aspen root-sprouting and encourage growth of remaining trees, and if such techniques will help convert some aspen stands to other desired species.
- In aspen stands along lake and stream borders, road aesthetic strips, or as islands in wetlands, as appropriate, modify the standard management practices or apply no management to meet the management objectives for these areas.
- Investigate the feasibility of conducting aspen thinnings on younger stands in order to accelerate growth rates and the annual allowable cut.
- Management considerations for wildlife may include harvest size that vary in shapes and sizes; maintaining reserve trees and islands; promoting travel corridors; and varying age class diversity among adjacent stands.

#### RED AND WHITE PINE DOMINATED MIXED FOREST

This forest type occurs in a wide range of current conditions that require a range of management intensities and a variety of techniques. Techniques for successful regeneration may require mechanical soil disturbance, fire, herbicides, and plantings.

#### General Management Prescriptions

- Depending on the origin and composition of the red and white pines, several management activities will be used to manage pine forests toward the future desired condition of increased pine composition and mixed species stands.
- Where red and white pine are of natural origin and the primary cover type, use selective harvests to maintain the health, vigor and growth of the pines. Remove selected individuals or small groups to maintain species diversity and structural diversity. At maturity (100-180 years red pine, 120-200 years white pine) harvest pine and replant or naturally regenerate. Clearcutting, seed tree harvest and overstory release may be used depending on site conditions. Stand considerations, seed sources, and site prep needs will determine the appropriate management action to use.
- Plant red and white pine plantations as needed to maintain pine on sites or to convert other forest types to pine. Hand or machine plant nursery stock seedlings following site preparation by mechanical and herbicide application if required. Use hand or herbicide release following planting to maintain growth and vigor of planted pine trees and increase survival of planted trees. Regeneration checks

## GENERAL FOREST MANAGEMENT PRESCRIPTIONS BY PRIMARY FOREST TYPE

will be made following planting at 3,5,10 and 20 year intervals.

- Thin pine plantations (red and white) on a recurring basis (8-20 year intervals), according to prescriptions outlined in the DNR Silviculture and Forest Aesthetics Handbook.
- Mixed pine stands containing a large percentage of tree species other than pine may be treated with selection harvest, shelterwood harvest or overstory removal of other species to promote pine to dominate the future stand or increase the numbers of pine in natural regeneration after harvest. Several harvest entries may be required to bring pine to a dominant position. Under planting may be required to assure adequate stocking levels.
- Where red and white pine is a viable understory component, use natural regeneration techniques. Plant pine if natural regeneration fails or is not possible.
- Leave scattered large red and white pine in many harvest areas if they are healthy and do not pose a risk to humans or forest health. These scattered healthy large-diameter red and white pine will provide a unique social and ecological feature across the forest. Gap management and site prep associated with individual trees will be encouraged for the regeneration of this species.
- Ground disturbance or prescribed fire may be used to promote regeneration of red or white pine where feasible and safe. The natural trend within these stands is a conversion from pine to other hardwood species. Prescribe burning trials have proven effective at maintaining these sites in pine by killing the encroaching hardwood species. Prescribed burns coupled with shelterwood harvests have also proven effective at regenerating these sites. Scarification has also shown promising results, especially when used with burning and shelterwood management. These trials may be examined and monitored to formulate a more comprehensive approach to management of natural and planted pine stands.
- Northern hardwoods may be maintained in mixed stands of pine or where northern hardwoods are regenerating below pine plantations to improve aesthetics and/or ecological benefits.
- Red pine plantations may be used as a cover crop for northern hardwood cover types if on appropriate soil types.

### RED OAK DOMINATED MIXED FOREST

Oak forests historically developed or regenerated following a significant disturbance event such as fire or blow-down and fire. Much of the current red oak developed following the large scale cutover and wildfire era in the early 1900's. Red oak may be encouraged on sites with appropriate soil, slope and other conditions. This forest type is of high value to a wide number of game and non-game wildlife species. Disturbance is

required to regenerate existing stands and to maintain an oak component in mixed stands.

### General Management Prescriptions

- Increase current levels of oak and look for opportunities to expand the oak types with active management on suitable soils. Increase oak component in mixed stands.
- Use thinnings to develop pole and small sawlog oak stands. As they near maturity, use shelterwood and selective cuts to regenerate this species. Regenerate red oak at 90-150 years of age, depending on site characteristics.
- Other management techniques that may be applied when needed to red oak stands develop single tree selection, clear-cuts with reserves, seed tree scarification, prescribe burning, hand-release and herbicide treatments to promote regeneration. A diverse stand is a goal of regeneration.
- Attempt to retain > or = to 3 trees per acre to develop into large, old trees for age, structural diversity and wildlife.

### WHITE BIRCH FOREST

White birch requires mineral soil for a proper seedbed to germinate seed, and it is a highly drought sensitive species. Many of the white birch stands are mature and declining. To maintain this forest community in the landscape, harvest followed by active site preparation is the most effective method. Harvest and ground disturbance provide for good regeneration of white birch as well as development of a diverse mix of grasses, forbs and shrubs important during early successional stages of this forest community.

### General Management Prescriptions

- Regenerate white birch by clearcutting stands, strip cutting, shelterwood harvest or by modified clear-cuts that open up stands. Typically use ground disturbance during harvest, mechanical scarification, or prescribed fire to prepare the forest floor for white birch seed germination.
- Regeneration is checked after 3-5 growing seasons. If adequate number of seedlings is established, the overstory will be removed except for aspen to limit suckering.
- On mixed stands of white birch and other species use selection harvest, shelterwood harvest, and clear-cut harvest, as appropriate, for diverse natural regeneration. Harvest mature white birch in areas develop another forest type is the primary objective.
- Where white birch is the objective and is associated with aspen. Do not cut or disturb the aspen until white birch successfully compete.
- Scarify (Salmon blade) sites prior to harvest when appropriate.
- The richer soils of this northern forest type can support larger white birch trees that can be useful to tribal gathering of bark. Management will preserve appropriate individual trees and will be communicated to tribal members.

## GENERAL FOREST MANAGEMENT PRESCRIPTIONS BY PRIMARY FOREST TYPE

- Maintain and increase total acreage of white birch to ensure the species is not removed from the landscape.

### NORTHERN HARDWOODS FOREST

This forest type is primarily managed as an all-aged forest stand, but can also be managed as an even-aged forest stand. Most of the hardwoods will be managed to diversify tree ages, sizes and tree species in each stand as specified in the individual management area plans. Continue to research and test methods for quality northern hardwood management on the forest sites exhibiting poor quality trees may be the reflection of past wind events or site conditions. A guide for management specific to the forest should be developed. Continue to monitor northern hardwood sites for intense competition of ironwood, musclewood and sedge. Develop methods that may be utilized if it is deemed that regeneration is seriously hindered.

### General Management Prescriptions

- Evaluate stands for density of crop trees (quality and growth potential).
- If inadequate number of crop trees, shelterwood harvest on the first entry and then do overstory removal once adequate regeneration reaches 2-4 feet in height. Subsequent management may be shifted to all-aged for future harvests
- If the adequate number of crop trees are present, use a selection harvest as the primary management tool, and vary harvest intensity according to site specific conditions and needs. Plan harvests to maintain or increase species diversity in these stands.
- Depending on the objectives of a particular management area, more intensive silviculture systems such as shelterwood harvest, group selection, or gap creation may be used on some sites. These techniques may be applied to an entire stand or to parts of a stand in conjunction with a selection harvest.
- Manage mixed Pine-red oak-aspen-northern hardwood stands through a wide variety of active techniques, depending on site conditions and the management objectives for the area.
- Where northern hardwoods are to be maintained, generally schedule management entries at intervals of every 15-30 years. To develop a northern hardwood stand with many age classes, evaluate the regeneration, spacing, density and other stands conditions. Harvests can take place at any interval but may be less intense than at the initial entry.
- Northern hardwood stands that become wind-damaged will be monitored for seven years to give ample opportunity for northern hardwood species to regenerate. After seven years, if monitoring determines insufficient

northern hardwood regeneration, natural regeneration will be encouraged or planting will be considered. Species to be planted would most likely be, but not limited to, white spruce, black spruce, white pine, and red pine. Monitoring and research would need to continue to determine if seven years is an adequate time frame for the regeneration of northern hardwood species.

### HEMLOCK FOREST

This forest community is represented by generally by small acreages, with mostly older stands scattered throughout the state forest. Overall, these areas would be maintained as they exist and regeneration will be encouraged where appropriate. Most hemlock stands would not be actively managed but some may see selective harvest of other species or release of healthy hemlock in the stand to enhance existing hemlock and promote regeneration of the species.

### General Management Prescriptions

Hemlock inclusions with densities of more than 50% hemlock (White Pine-Hemlock, Eastern Hemlock, Hemlock-Hardwood, or Hemlock-Yellow Birch) will be managed using guidelines defined in the Silvicultural Handbook for extended rotations. A management zone extending out one tree length from the nearest hemlock shall be included within these guidelines. Exceptions to this may be where management opportunities provide for encouraging regeneration of this species.

- Regeneration efforts should continue where opportunities exist. Treatments to be examined include light to moderate scarification using a root rake or salmon blade. Timing with a good seed crop and warm conditions for germination (59 degree requirement) is also necessary. Fencing or repellants to reduce browsing also be used. Other treatments may include prescribe burning or underplanting. Where regeneration attempts are tried, follow-up regeneration checks will be made at 3,5,10 and 20 year intervals or at which time treatment is determined ineffective.
- Retain all hemlock. Hemlock will normally not be harvested. Hemlock damaged by wind, ice, fire, insects, and disease may be salvaged as long as the salvage meets the overall objectives of the area and operability will not damage the site.

### RED MAPLE DOMINATED MIXED FOREST

Red maple is found on the forest on both dry and wet sites and on variety of soil types. It dominates some stands and is both a major or minor component of mixed stands. It is both a pioneer and sub-climax species that is more shade tolerant and longer lived than early successional species such as aspen and white birch.

## GENERAL FOREST MANAGEMENT PRESCRIPTIONS BY PRIMARY FOREST TYPE

### General Management Prescriptions

- Even-aged management is the preferred silvicultural method to maintain red maple. Lower quality sites with fiber potential will be rotated and regenerated using coppice management. Higher quality sites with sawlog potential will be managed with either shelterwood or group selection regeneration techniques. Where appropriate, higher quality sites with sawlog potential may be converted to northern hardwoods.
- Red maple saplings in stands with sawlog potential may be released to encourage accelerated diameter growth. Pole size stands will be commercially thinned. Poles and saplings on less rich sites do not warrant thinning or release.
- Where red maple is an associate in aspen stands, clear-cut harvest the red maple with aspen. Red maple can stump sprout from healthy cut trees and can seed in along with the aspen regeneration.
- Scarification may be used to promote regeneration of red maple where feasible.

### FORESTED AND UNFORESTED WETLANDS

The forested wetland areas typically contain stands of swamp conifer (black spruce, tamarack, white cedar and associated tree species). They can be pure stands of individual species or combinations of two or more tree species. Also included in this category are swamp hardwood stands. Examples of these are black ash, red maple and other species that occupy a wet forest environment. Bottomland hardwood stands are also present, although uncommon, on the property. They occur mostly within Area 18. See Area 18 Flambeau River Scenic Area for management prescriptions.

Forested ephemeral ponds are widely distributed across much of the FRSF, and can be found sometimes occurring in high densities in some areas. Forested ephemeral ponds are a unique natural community, providing wetland habitat in the spring and early summer and typically drying up by mid to late summer. They flourish with productivity annually and provide critical breeding habitat for certain invertebrates, as well as many amphibians such as wood frogs and salamanders. As ephemeral ponds are abundant on the FRSF compared to other state properties, their protection is particularly important. Trees adjacent to ephemeral ponds provide a variety of benefits such as maintaining cool water temperatures, preventing premature drying, and adding to the local food web, so these trees will be retained whenever possible.

The unforested wetlands are represented by large areas of sphagnum bog and open bogs as well as alder thickets and marshes.



### General Management Prescriptions

- A diversity of forested and unforested wetlands would be maintained. Some black spruce and tamarack stands would be regenerated through active management. Priorities are in mature stands on productive (>20ft<sup>3</sup>/acre/year) sites that can be regenerated using the prescriptions below.
- No management activities will be conducted within wetlands with small sized slow growing trees (<20 ft<sup>3</sup>/acre/year of growth), lowland brush, or areas of open bog and marsh. (Note: these vegetation types make up most of the wetland acreage.) However, access across these stands on a frozen ground temporary road may be required.

## GENERAL FOREST MANAGEMENT PRESCRIPTIONS BY PRIMARY FOREST TYPE

- Ephemeral ponds are a unique ecosystem that provides food and habitat for both aquatic and terrestrial communities. These sites will be protected by following “Wisconsin’s Forestry Best Management Practices for Water Quality”, and the Department’s Marking Guidelines and Biomass Harvesting Guidelines.
- Swamp hardwood stands, primarily black ash, may be managed on an all-aged or even aged system depending on site and stand conditions.
- Productive stands of tamarack and black spruce may be regenerated by limited harvesting of stands (clear-cut, strip clear-cut) following the guidelines in the DNR Silvicultural and Forest Aesthetics Handbook. Tamarack and black spruce stands will normally be managed with adjacent stands of more core species (aspen, northern hardwoods, swamp hardwoods, red maple, white spruce, and pine. Operability will determine whether a stand is harvested.
- Conduct timber harvests on forested wetlands only under frozen ground conditions to prevent rutting and potential damage to organic soils.
- Retain all white cedar. Develop successful reproduction methods are found that will include practical methods of preventing whitetail deer browsing, cedar will normally not be harvested. Exceptions to this will be where management opportunities provide for encouraging regeneration of this species. Cedar trees damaged by wind, ice, fire, insects, and disease may be salvaged as long as the salvage meets the overall objectives of the area and operability will not damage the site.

### BALSAM FIR AND WHITE SPRUCE FOREST

Balsam fir exists across a wide range of habitats in both mixed and pure stands, and as individual trees. White spruce grows on a variety of soils of glacial, lacustrine, marine, or alluvial origin. The two species can be managed jointly. Balsam fir has a better developed juvenile taproot than white spruce but both are subject to windthrow if more than 50 percent of a stand is removed at one time. Inclusions of these conifer components should be maintained throughout stands within the forest.

### General Management Prescriptions

- In natural stands of balsam and white spruce, lightly scarify two or three years prior to harvest. Competition (particularly aspen) should be discouraged and should not be cut at the time of harvest, in order to reduce sprouting. Planting of balsam and white spruce will be considered as a means of keeping these species as a component of the landscape should efforts at natural regeneration fail or prove to be unfeasible.
- In white spruce plantations, where spacing permits row thin either every other row or every fourth row, removing the center row of the remaining three in the next thinning. A combination of row thinning and selective marking from below can also be used. Rotate stand in accordance with site index rotation age. Never remove more than 50% of the stocking level at one time.

### OTHER FOREST TYPES

- Maintain existing hemlock-hardwood and cedar stands at present locations. Encourage scattered hemlock, cedar, white spruce and white pine in all stands.
- Non-native plantations of European larch and Scotch pine will be converted to suitable native species.
- Continue silvicultural trails with regeneration challenges of sedge, ironwood, musclewood, and hazel.
- Encourage natural regeneration of yellow birch through light scarification to encourage seeding. Extended rotations may be required in the absence of reproduction.

### TREES LOCALLY DIFFICULT TO REGENERATE

There are certain tree species identified within the forest as being difficult to regenerate. This difficulty is related to the exclusion of past environmental and physical factors affecting the landscape. It is important that efforts be made for the maintenance of these species. Maintenance may follow a passive or active approach based on funding and site and stand conditions. Both successful and unsuccessful treatments will be monitored through periodic regeneration checks and records maintained.

Tree species of concern include, American elm, black cherry, swamp white oak, butternut red and white pine, white birch, bitternut hickory, silver maple, northern white cedar, eastern hemlock, red oak, black spruce, yellow birch, white oak, and tamarack



## WILDLIFE MANAGEMENT

The Flambeau River State Forest supports a great diversity of wildlife species, including game, furbearer, and bird species common to Northern Wisconsin. A wide variety of birds migrate through the Flambeau River State Forest as well. The Flambeau River itself, whether free flowing or impounded, provides important habitat for many wildlife species. Endangered and threatened species (listed species) on the forest include the following: Cerulean Warbler, Wood and Blanding's Turtle, Red-shouldered Hawk, American marten, extra-striped snaketail and pygmy snaketail dragonflies. The Flambeau River State Forest contains 12 special concern animals including several birds, a mammal, a reptile, and two mussels.

### WILDLIFE HABITAT MANAGEMENT

The wildlife management program on the Flambeau River State Forest focuses on maintaining and enhancing habitat and assessing the population status of important game, non-game, and listed species. The abundant wildlife on the Flambeau River State Forest requires diverse forest habitats in all successional stages from young to old growth forests. Diverse and healthy wildlife populations will be maintained by managing the composition and structure of forest habitats integrated with the management objectives and activities outlined for each land management area in the Land Management Section of this plan. Wildlife habitat values are further assured by the wildlife biologists working with foresters on timber sales in order to maximize tree species diversity and improve vegetative structure consistent with the management objectives for the area.

This wildlife management plan has been integrated into the management prescriptions for the individual management areas.

### FORESTED HABITATS

Approximately 22% of the Flambeau River State Forest will be managed for early successional cover types, such as aspen and white birch. These stands will be maintained through coppice harvests for mixed stands of aspen/white birch and shelterwood harvests for white birch stands. There will be a diversity of age classes by harvesting some aspen stands before economic rotation and some aspen stands beyond economic rotation. While aspen-birch forests are dominated by aspen, they also contain a mixture of various pines, oaks, maples, and white birch.

40% of the forest will be managed for northern hardwoods. This cover type will be managed to diversify age class, size, and composition.

3% of the forest will be managed for hemlock hardwoods, once a dominant cover type on the forest. Due to factors including wind damage and deer browse, this cover type has been greatly reduced, although there are numerous small pockets of large, old hemlock stands scattered across the forest. Hemlock hardwood stands will be passively managed, with some selective harvesting of other species in the stands to enhance existing hemlock and to promote regeneration.

8% of the forest will be managed for red maple, which is found on wet and dry sites. This cover type is both a major and minor component of mixed stands, as well as a pioneer and sub-climax species that is more shade tolerant and longer lived than many early successional species such as aspen and white birch. Even-aged management is the preferred silvicultural method for maintaining red maple. Lower quality sites with fiber potential will be rotated and regenerated using coppice management. Higher quality sites with sawlog potential will be managed with either shelterwood or group selection regeneration techniques. Where appropriate, higher quality sites with sawlog potential may be converted to northern hardwoods.

9% of the forest will be managed for swamp hardwoods, which are characterized by black ash and red maple, occupying a wet forest environment. Productive stands of swamp hardwood may be regenerated by limited harvesting (partial openings or shelterwood cuts).

8% of the forest will be managed for high conservation value forests, providing a wide range of social and ecological values. On the FRSF these forests, or at least some portion of each, will become older with many of the structural attributes associated with old-growth forests and the presence coarse woody debris and den trees. Management will include passive and active, with an emphasis on retaining large, individual trees.

Older forest habitats are underrepresented on the Flambeau River State Forest. Areas that will be managed for old forest - extended rotation include areas within the Flambeau River Scenic area, Wilderness Lakes, Wild Lakes, Research Zones, Native Community Management areas and State Natural Areas. The major forest types best suited to the soils on the Forest are lowland conifer, swamp hardwoods, northern hardwoods, and red maple. Forest types in decline without active management include white pine, red pine, bottomland hardwoods, cedar and hemlock. As time passes and more of these stands begin to reflect the characteristics of older forests, the wildlife species that use them should become more prevalent.

Passive and active forest management will be employed to meet stand objectives.

The white and red pine community will slowly increase throughout the FRSF with active management. Bottomland hardwoods, hemlock and cedar will be managed cautiously until successful regeneration techniques are established.

Wildlife openings will be maintained on the FRSF in selected areas. Permanent grass openings can provide wildlife and recreation benefits, and diversity in an otherwise wooded habitat. There are 169 constructed or maintained openings comprising less than .5% or 350 acres of the Flambeau River State Forest. They vary in size from .25 to 5 acres. Opening management on the FRSF will follow M.C. 2112.1 and allow for both the maintenance of natural and constructed openings. Openings that will be maintained are those that are constructed or that have been maintained in the past except those openings located in SNAs, native community manage-

ment areas and within Management Area 4 "Back Country Hardwoods". Openings that have not been maintained and are less than 5 acres will be allowed to succeed naturally. Openings greater than 5 acres will be reviewed with Department wildlife management staff and either be maintained, allowed to succeed naturally or planted. Maintenance may include using herbicides, mechanically mowing, hand cutting, and prescribed burning. Openings are maintained on a rotational basis over a several year period as staff and budgets are allocated.

Long-lived trees such as yellow birch, white pine, red pine, spruce, oak, and hemlock may be retained in coppice harvests to provide for species and stand composition diversity at densities that will not compromise the objective of the harvest. Small clumps of aspen-birch may be reserved in coppice harvests for ruffed grouse budding and cavity trees.

Species of special concern that are locally difficult to regenerate such as American elm, butternut, bitternut hickory,



**WILDLIFE MANAGEMENT**

black cherry, silver maple, white birch, cedar, yellow birch, white pine, red pine, spruce, oak, and hemlock will be encouraged through regeneration efforts and maintenance of seed sources.

Large, full-crowned trees with dens and cavities as well as dead trees (snags) may be maintained on appropriate sites in all management areas (for more information see the WDNR Silvicultural Handbook, chapter 24). These trees may be retained unless they are unsafe, or increase insect pests. Forest stands subject to large-scale death from disease, insects, or fire will be salvaged.

**NON-FORESTED WETLANDS**

All non-forested wetlands, including Northern Sedge Meadows, Shrub-carr, Boreal Rich Fen, and Open Bogs will be protected. These wetlands provide habitat for a wide variety of wetland wildlife including species of special concern. Protective management prescriptions for non-forested wetlands are outlined in the Land Management Section of this plan.

**AQUATIC HABITATS**

Undeveloped lake and stream shoreline is important wildlife habitat. All undeveloped lake and stream shoreline will be managed to protect water quality, maintain wildlife and fisheries habitat, and enhance aesthetics. Shoreline management will include vegetative zones. They will be maintained by following Best Management Practices for Water Quality when performing all forest management activities.

Ephemeral ponds and permanent small ponds provide important breeding sites for amphibians and waterfowl. Forested ephemeral ponds are a unique natural community, providing wetland habitat in the spring and early summer, and typically drying up by mid to late summer. They flourish with productivity annually and provide critical breeding habitat for certain invertebrates, as well as many amphibians such as wood frogs and salamanders. Ephemeral ponds are widely distributed across much of the FRSF and can be found in high densities in some areas. As ephemeral ponds are abundant on the FRSF compared to other state properties, their protection is particularly important. Trees adjacent to ephemeral ponds provide a variety of benefits such as maintaining cool water temperatures, preventing premature drying, and adding to the local food web, so these trees will be retained whenever possible. Ephemeral ponds and permanent small ponds will be

protected through vegetative management adapted to minimize impacts and by following Best Management Practices for Water Quality, and the Department's Marking Guidelines and Biomass Harvesting Guidelines.

**ENDANGERED, THREATENED, AND SPECIES OF SPECIAL CONCERN**

Individuals of all endangered, threatened, and special concern wildlife species will be protected.

All known critical habitat for these species will be protected or maintained through management which incorporates guidance from staff specialists, research and current literature. Examples of critical habitat includes sites used for breeding and foraging such as bald eagle and osprey nest sites; wood and Blanding's turtle nest sites; wolf den and rendezvous sites; and Red-shouldered and Northern Goshawk nest territories. The Natural Heritage Inventory database (NHI) will be searched prior to all timber sales, ground-breaking projects, and recreational and trail development.

**INTEGRATED MANAGEMENT**

Most of the forest habitat work on the Flambeau River State Forest occurs through the timber sale program. Activities associated with timber sales directly impact wildlife habitat. Wildlife biologists review all timber sales and provide recommendations to maintain and improve wildlife habitat.

**WILDLIFE POPULATION MONITORING**

At present, several populations of important game species will be monitored through annual surveys on the Flambeau River State Forest. These surveys include: deer, bear, furbearers, ruffed grouse, turkey and woodcock. Annual surveys provide valid population information for management of species on a unit, zone or statewide basis.

Surveys are conducted annually for certain rare animal species, using established protocols and survey routes. Species surveyed include bald eagle, osprey, and timber wolf. Rare and uncommon wildlife such as Wood and Blanding's turtles, bull frogs, Red-shouldered Hawks and Northern Goshawks are monitored through reports from staff and citizens. The reports are organized in the Bureau of Endangered Resources' NHI database.

### **WILDLIFE POPULATION MANAGEMENT**

Game species are managed through hunting and trapping seasons. Each game species has a population goal set for a certain local or regional area. Hunting and trapping regulations and population goals are not set through the Master Planning process. Game populations are managed through regulations and goals set by the Natural Resources Board and the Voigt Intertribal Task Force. The public is involved in all stages of this review and implementation process.

### **WILDLIFE RESEARCH**

DNR, tribal and university-sponsored wildlife research may occur on the Flambeau River State Forest. New research projects may be undertaken if they do not conflict with this master plan.

### **WILDLIFE REINTRODUCTIONS**

#### **Elk**

Elk were reintroduced into Wisconsin several years ago and the population continues to increase. There is a possibility that elk will expand their range naturally into the northern portions of the Flambeau River State Forest. Elk management will be primarily focused on the pioneer species habitat types, such as aspen. No anticipated changes in current timber management

will be needed to accommodate the habitat needs of elk if they become present on the forest.

The current State Elk Management Plan allows for the relocation or reintroduction of Elk into unoccupied areas within the State. Evaluations of suitable habitat are being evaluated. The State Elk Biologist will work with all stakeholders, including the Flambeau River State Forest, to determine if there are suitable locations and habitat on the forest for the expansion or reintroduction of elk.

#### **American Marten**

American marten was reintroduced in Wisconsin several years ago. Ongoing reintroduction of marten occurs just north of the forest in the adjacent Chequamegon-Nicolet National Forest. Martens have been observed in the FRSF in recent years (see area 4). Favorable habitat, including mature forest with abundant snags and downed woody debris is found in the northern portion of the forest along the North Fork of the Flambeau River. American marten is an endangered species and any reintroduction efforts would include intra-agency coordination to identify habitat needs and considerations for optimal success.





## FISH HABITAT MANAGEMENT

The development and maintenance of fish habitat along the Flambeau River, its tributaries and other Lakes and streams is important to the high quality sport fishery. The following management objectives and prescriptions are authorized for fisheries in all land management areas including passively managed areas.

### MANAGEMENT OBJECTIVE

Restore or enhance shoreline fish habitat that could benefit the fishery without negatively impacting the natural scenic quality of the area.

### MANAGEMENT PRESCRIPTIONS

- Work with fish management staff to identify suitable sites for habitat improvement and conduct the following management activities as appropriate for the site and in ways that are compatible with the land use classification of the management area.
- Interpolating of desirable native tree and shrub species where these species are absent.
- Leave downed and fallen trees in the river and lakes to provide important fish habitat where not deemed a significant safety hazards to navigation.
- Conduct mechanical or chemical control of woody vegetation that impacts important fish habitat structures.
- Stabilize stream banks in critical areas to minimize erosion or slumping banks and improve in-stream conditions.
- Control beaver populations on the tributaries to protect fish habitat and movement.





## RECREATION MANAGEMENT

People have been attracted to the Flambeau River and its adjacent lands for generations. Those who vacation or live near the forest appreciate the beauty of the river, the trails and the extensive forestland. Forestry and recreation on the Flambeau River State Forest is important to local residents and visitors alike, and contributes to the regional economy.

The Flambeau River State Forest Master Plan maintains all of the existing recreational amenities and opportunities on the forest and expands some to meet growing demand. Annual visitation to the Flambeau River State Forest has been relatively steady for the past 20-25 years. The most popular recreational activities include river paddling and camping, fishing, snowmobiling and ATV riding, and hunting. There is increasing demand for new and improved recreational trails and increased amenities at campgrounds, such as showers and electric hook-ups. River use is one of the primary recreational attractions on the forest and is experiencing increased use and changes in the number and size of groups paddling and camping.

### RIVER RECREATION

The Flambeau River is one of the defining natural features of the state forest and a primary attraction for recreation. The Flambeau River offers one of the best paddling opportunities in the state, with over 75 river miles in a remote, scenic setting. The river is used by both day-trippers and those seeking multi-day trips. While day-tripping and river camping has generally remained steady over the past 30 years, there has been an increase in the number and size of groups paddling and camping. The increased number of large groups, along with a lack of separation between campsites has resulted in fewer camping opportunities and a reduction in the quality of camping along the river. Changes outlined in this plan will greatly improve the camping experience for large and small groups alike. Map 2.23 (Appendix) illustrates current and planned recreation facility developments.

#### Landuse Classification

The majority of the river corridor is managed as a Scenic Management Area with a Type-2 Recreational Use Setting. This management emphasizes maintaining the natural appearing and largely undeveloped and remote character of the river (See Area 18: Flambeau River Scenic Area and Area 19: Upper North Fork Flambeau River Scenic Area).

Along the river corridor there are several small areas with somewhat more developed recreational facilities that are designated at higher recreational development classifications: they include the group and semi-primitive campsites, the Hervas picnic area and landing, and the Dix Dox landing, which are classified as a Type-3 Recreational Use Setting; and Recreation Management Area 21, the developed area surrounding the forest headquarters, and the planned ADA cabin site, which are a Type 4 Setting.

#### FLAMBEAU RIVER WATER TRAIL

##### *Management Objectives*

- Maintain and promote opportunities on the North and South Forks of the Flambeau River for extended non-motorized river travel and recreation in a natural appearing, somewhat remote setting.

##### *Management Prescriptions*

- Watercraft access
- Maintain or redevelop as needed watercraft access sites as described on Table 2.35.

##### River related day-use sites

Provide day-use facilities appropriate to the site's recreational setting classification to support river recreation as described below:

- Provide barrier-free river accessible services at the new forest headquarters visitor services area (Hwy W). The site offers information/education, picnicking, water, restrooms and shower facilities for river and non-river users. See Management Area 21 for a detailed description of this area.
- Redevelop the Hervas Landing campsite as a picnic area for use by paddlers and fishermen. Capacity will be up to 15 people. Provide vault toilets, a canoe landing, and parking shared with the boat landing. This site is designated as a Type-3 Recreational Use Setting.
- Enhance year-round access and viewing opportunities at Slough Gundy, a scenic site on the South Fork Flambeau River. Improve vehicle access and parking site. Construct moderately developed trail to provide ADA accessibility to Little Falls and add an interpretive kiosk. Provide for winter use by establishing a snowshoe trail. This site is designated as a Type-3 Recreational Use Setting.

##### Information services

- Install and maintain information facilities appropriate for the recreational use setting at river access parking lots and the Headquarters Day-use Area to provide

TABLE 2.35 CURRENT BOAT LANDINGS ON THE FLAMBEAU RIVER STATE FOREST AND PLANNED CHANGES

Landing	Location	Recreational Setting Class	Landing Type	Parking Capacity	Toilets	Drinking Water	Barrier-free*	Planned Changes
<b>North Fork Flambeau River</b>								
Robinson	Upper Flambeau	Type-2	B, C	15				Add Toilets
Holtz	Upper Flambeau	Type-2	B, C	5				Add Toilets and develop parking
Nine Mile	Highway 70	Type-2	B, C	7		X	X	
Dix Dox	North of Hwy. 70 on Oxbo Dr.	Type-3	B, C	26	X	X	X	Add barrier-free restroom and parking
Highway W	Hwy. W crossing	Type-4 (Area 21)	B, C	10	X	X		Redevelop to have a barrier-free canoe access, restroom and parking
Camp 41	Off of West Lane, west side of river	Type-2	A	12	X	X	X	
Hervas	End of River Rd., east side of river	Type-3	B, C	6	X	X	X	Redevelop to provide a barrier-free landing, restroom and parking
Beaver Dam	Off of West Lane, west side of river	Type-2	A	12	X			
<b>South Fork Flambeau River</b>								
Fisherman's	Hwy. M. crossing	Type 2	A	10	X	X		Install a canoe/small boat slide ramp

**Key for Landing Type**

A = carry-in landing from a vehicle access site not visible from the river

B = landing with vehicle access to or near the river, parking not readily visible from the river

C = includes a maintained, primitive or lightly developed ramp for launching trailered boats

\* "Barrier-free" means the facility is designed to be free of barriers to persons with disabilities.

pertinent river use information, such as maps, river use rules and recreational safety information, literature highlighting river history and resources and management to enhance the Flambeau River canoe trail experience.

- Provide additional access to information about river recreation, maps, rules, and river conditions on the forest through maintaining cross links on the forest's web page to local chambers of commerce and the Department of Tourism to provide additional access to information about river recreation, maps, and rules.
- Monitor river levels, weather and paddling conditions to respond to river users' phone and email inquiries about current conditions. Consider reporting updates on the forest's web page, and providing links and contacts to other river reporting sources.

**RIVER CAMPING**

While day use and river camping has generally remained steady over the past 30 years, there has been an increase in the number and size of groups paddling and camping on the river. The increased number and size of groups camping has had an impact on campsites, and with a lack of separation between individual campsites there has been an erosion of the camping experience as well. In response, this plan provides for a number of improvements to camping, including:

1. The development of new group campsites to better serve their needs and reduce impacts
2. Increased separation between individual campsites to improve the camping experience

3. Development of new dispersed, primitive campsites to provide opportunities for a more remote camping experience.

These changes will diversify camping opportunities, disperse river users, and increase river trip options while maintaining the wild and scenic qualities of the Flambeau River that paddling enthusiasts seek on the forest.

Currently there are 14 designated canoe camping locations on the North Fork of the Flambeau River. They are accessible only by water. Each location has 2 or 3 campsites and accommodates up to 6 people (12 to 18 campers per location). A variety of actions are planned to mitigate problems associated with the current design and location of existing river campsites to better accommodate current use and improve the camping experience. The master plan creates three river camping designations: group, semi-primitive, and primitive, to provide a range of recreation experiences and disperse users along the river. A summary of current and planned river camping amenities can be found in Table 2.36: Current and Planned North and South Fork River Company Developments.

These river campsite designs are a general representation for the purposes of illustration and planning and do not reflect the exact campsite design. Actual configuration will be determined at the Department's discretion as improved, on-the-ground, environmental information becomes available, including topography and other site features.

### CAMPSITE RESTORATION AND DEVELOPMENT

Several different campsite types - group, semi-primitive, primitive, and an ADA accessible cabin - will be offered. Each will provide a different type of camping experience. Amenities and overall camper capacity will be increased within the capabilities and limitations of the resource. Some existing campsites will be redeveloped to accommodate groups of up to 15 campers while others will be redeveloped as semi-primitive campsites for families or small groups of up to six individuals. The redevelopments will bring the existing camp areas up to current NR 44 campsite standards.

By necessity some group and semi-primitive campsites will be constructed at new locations and the new dispersed, primitive campsites will also be sited at new locations. Their location will be based on a site's ecological sustainability and its ability to meet current campsite design standards. Historic campsites, places along the river that have a tradition of use but are not currently designated for camping, will be considered when locating new primitive campsites. Conceptual campsite locations are identified on Maps 2.24a-e but these are only approximate locations. When developed, their actual locations will be based on local conditions, adjacent land management classifications, and long-term sustainability to minimize impacts on the landscape (See Table 2.37: Current and Planned River Camping Developments on the North and South Forks of the Flambeau River).

Implementation of the master plan will occur gradually as river campsites and landings are rejuvenated and redeveloped. FRSF staff will work strategically to first address known issues and needs for river recreation. In particular, the highest priority is to redevelop the most degraded sites and heavily used areas where user conflicts occur. New additional campsites, that will further diversify recreational opportunities and meet demand, will be developed as opportunities and funding allow. In some cases restoration and new development work may take place concurrently to maintain accommodation for campers throughout the season.

Implementation of the master plan will occur gradually as river campsites and landings are rejuvenated and redeveloped. FRSF staff will work strategically to first address known issues and needs for river recreation. In particular, the highest priority is to redevelop the most degraded sites and heavily used areas where user conflicts occur. New additional campsites, that will further diversify recreational opportunities and meet demand, will be developed as opportunities and funding allow. In some cases restoration and new development work may take place concurrently to maintain accommodation for campers throughout the season.

#### Management Objectives

- Provide opportunities for small and larger groups of paddlers to camp on the river at minimally to lightly developed dispersed and water only accessible campsites where they may enjoy nature, a sense of solitude, and camaraderie with family and friends.
- Provide river camping opportunities for persons with disabilities.

**TABLE 2.36 CURRENT AND PLANNED NORTH AND SOUTH FORK RIVER CAMPING DEVELOPMENTS**

Camping Type	Current			Planned		
	Number of sites	Capacity per site	Total Capacity	Number of sites	Capacity per site	Total Capacity
Primitive	0	0	0	19	6	114
Semi-primitive	35	6	210	10	6	60
Group	0	0	0	12	15	180
Handicap Accessible Cabin	0	0	0	1	6	6
<b>Total</b>	<b>35</b>		<b>210</b>	<b>42</b>		<b>360</b>

- Provide and maintain campsites that are sustainable over the long-term and meet NR 44 campsite design standards.

#### Management Prescriptions

##### Group Campsites

On the North Fork of the Flambeau River, re-develop and convert 7 existing semi-primitive camp areas (currently each contains a cluster of 2 or 3 campsites) into 7 group campsites. Develop 3 additional new group campsites with the same capacity and design as the redeveloped sites. (Additionally, two existing semi-primitive camp areas located near the Headquarters in Area 21 will be re-developed and converted to two river accessible group campsites, making a total of 12 group campsites on the river.)

- *Designated use:* Water access only. Each group campsite will be limited to a maximum of 15 campers. Campsites are only for a one-night-stay. If determined to be desirable and feasible, some group campsites may become reservable.
- *Design of camp area:* Follow the standards in NR 44.07(6)(e)(2); locate campsites 150' or more from any road, and have 400 or more foot separation distance between group campsites and out of sight and sound of non-group campsites (well over 400 foot separation) to minimize conflicts with other campers.
- *Amenities:* three picnic tables and a fire ring for cooking, a 2nd fire ring with benches, vault toilet, and gated service road for management access.

##### Semi-primitive Campsites

On the North Fork of the Flambeau River, re-develop 3 existing semi-primitive camp areas into 3 improved semi-primitive camp areas, each containing two campsites. Develop 2 new semi-primitive camp areas in new locations, each containing two campsites.

- *Designated use:* Each campsite is for use by families or groups of six persons or less. Campsites are only for a one-night-stay by river travelers.
- *Design of camp area:* Follow the standards of NR 44.07(6); 400' or more of separation between campsites, out of sight and sound of group sites, and at least 150' from roads and designated trails (except the management service road). Camper access is by watercraft only.
- *Amenities:* leveled and firm tent pads, one picnic table and fire ring per campsite, vault toilet shared between the two campsites, and gated service road for management access.

##### Primitive Campsites

On the North Fork of the Flambeau River, develop 15 new primitive, single unit campsites in new locations to diversify camping opportunities and river trip options. Campsites will be interspersed with others along the river.

On the South Fork of the Flambeau River; develop 2 new primitive, single unit campsites on the South Fork east (upstream) of Highway M and 2 new primitive, single unit campsites on the South Fork west (downstream) of Highway M.

- *Designated use:* Each campsite is for use by a family or group of six persons or less. Campsites are for a one-night-stay by river travelers.
- *Design of campsite:* Follow the standards of NR 44.07(5); campsites are widely dispersed (cannot see or hear other campers), with water access only. Sites are minimally cleared, with primitive surface material, and with limited development. Primitive campsites are remote locations with a high expectation of privacy and solitude and a low expectation for services and trail access.
- *Amenities:* Each campsite will have a fire ring, and a box latrine. It may or may not have a picnic table.

##### Headquarters River Campground

A new vehicle accessible, small, rustic campground will be developed near the river from the Forest Headquarters (Area 21). It will accommodate both river users and other campers. Its location will provide a convenient base for day-trips on the river. See Management Area 21 for development details.

##### ADA Accessible Camping

Riverside cabin: Construct a fully accessible ADA cabin on the North Fork of the Flambeau River upstream from the forest headquarters between Highway 70 and the Highway W bridge. Locate the cabin on a site with road access and suitability for a barrier free watercraft landing. This reach of the river is served on both ends by barrier-free watercraft landings.

- *Designated use:* The cabin will be reservable for limited multi-day use to accommodate campers with special needs and their family or group. Capacity will be six persons.
- *Design:* The cabin will be fully developed with all utilities, accessible furnishings and appliances, and full wheel chair accessibility. Access will be available for overnight campers arriving by vehicle, or by water access to provide opportunity for overnight river trips.

**RECREATION MANAGEMENT**

**TABLE 2.37 CURRENT AND PLANNED RIVER CAMPING DEVELOPMENTS AND DESIGNATIONS ON THE NORTH AND SOUTH FORKS OF THE FLAMBEAU RIVER**

River Section	Current				Planned				PLANNED ACTIONS
	Campsite Name	Campsite Type	# of Sites	Max Capacity	Campsite Name	Campsite Type	# of Sites	Max Capacity	
Nine-mile to Dix Dox	County Line	Semi-primitive	2	12	County Line	Group	1	15	Redesign site and convert to one group site
	Oxbo	Semi-primitive	3	18	Oxbo	Group	1	15	Redesign site and convert to one group site
						Semi-Primitive	1	6	Develop new semi-primitive site
						Semi-Primitive	1	6	Develop new semi-primitive site
						Primitive	4	6 each	Develop 4 new individual primitive sites
					Accessible Cabin	1	6	Develop handicap accessible cabin	
Dix Dox to Hwy W	Log Creek	Semi-primitive	2	12	Log Creek	Group	1	15	Redesign site and convert to one group site
	Mason Creek	Semi-primitive	2	12	Mason Creek	Semi-primitive	1	6	Redesign and restore, space sites >400 feet
						Semi-primitive	1	6	
	Babb's Island	Semi-primitive	2	12	Babb's Island	Group	1	15	Redesign site and convert to one group site
				Primitive		2	6 each	Develop 2 new individual primitive sites	
Forest Headquarters					Campground	5-10	30-60	Develop new 5-10 site campground on river	
Hwy W to the Forks	Headquarters	Semi-primitive	3	18	Headquarters	Group	1	15	Redesign site and convert to one group site
	Boy Scout	Semi-primitive	3	18	Boy Scout	Group	1	15	Redesign site and convert to one group site
	George's	Semi-primitive	3	18	George's	Semi-primitive	1	6	Redesign and restore, space sites >400 feet
						Semi-primitive	1	6	
	Camp 41	Semi-primitive	3	18	Camp 41	Group	1	15	Redesign site and convert to one group site
	Wannigan	Semi-primitive	2	12	Wannigan	Group	1	15	Redesign site and convert to one group site
					Primitive	4	6 each	Develop 4 new individual primitive sites	
The Forks to Southern Forest Boundary	Forks	Semi-primitive	2	12	Forks	Semi-primitive	1	6	Redesign and restore, space sites >400 feet
						Semi-primitive	1	6	
	Bear Run	Semi-primitive	2	12	Bear Run	Group	1	15	Redesign site and convert to one group site
	Hervas	Semi-primitive	3	18	Hervas	Day-use	0		Convert to day use, close to camping
	Cedar Rapids	Semi-primitive	3	18		none	0		Close to camping and all use
						Group	3	15 each	Create 3 new group sites
						Semi-Primitive	1	6	Develop new semi-primitive site
						Semi-Primitive	1	6	Develop new semi-primitive site
South Fork					Primitive	5	6 each	Develop 5 new individual primitive sites	
					Primitive	4	6 each	Develop 4 new individual primitive sites	

Primitive sites: fire ring, box latrine; Semi-primitive sites: vault toilet, fire ring, picnic table, gated access road for management purpose; Group Sites: vault toilet, fire ring, picnic tables, second fire ring with benches, and gated access road for management purposes.

## RECREATION MANAGEMENT

- *Amenities:* barrier-free river access, table, raised fire ring, accessible picnic table, vehicle access roadway and parking.
- *Barrier-free campsites:* Wherever practicable, design campsites, particularly the group and semi-primitive sites, to be barrier-free.

### Actions to alleviate over-use problems and enable site restoration

- Close the Cedar Rapids camp area and restore the site to a natural condition. Camping will be relocated to more sustainable locations upstream and downstream.
- Where opportunity allows, based on patterns of use, topography and ecological conditions, develop alternate-use campsites to allow campsites to be rested and restored. Alternate-use sites would be developed only as needed, and as budget and staffing allows.
- Stabilize eroded riverbanks at campsites and other sites degraded by human use using native, natural materials as prescribed by NR 44 for a Type-2 Recreational Use Setting.

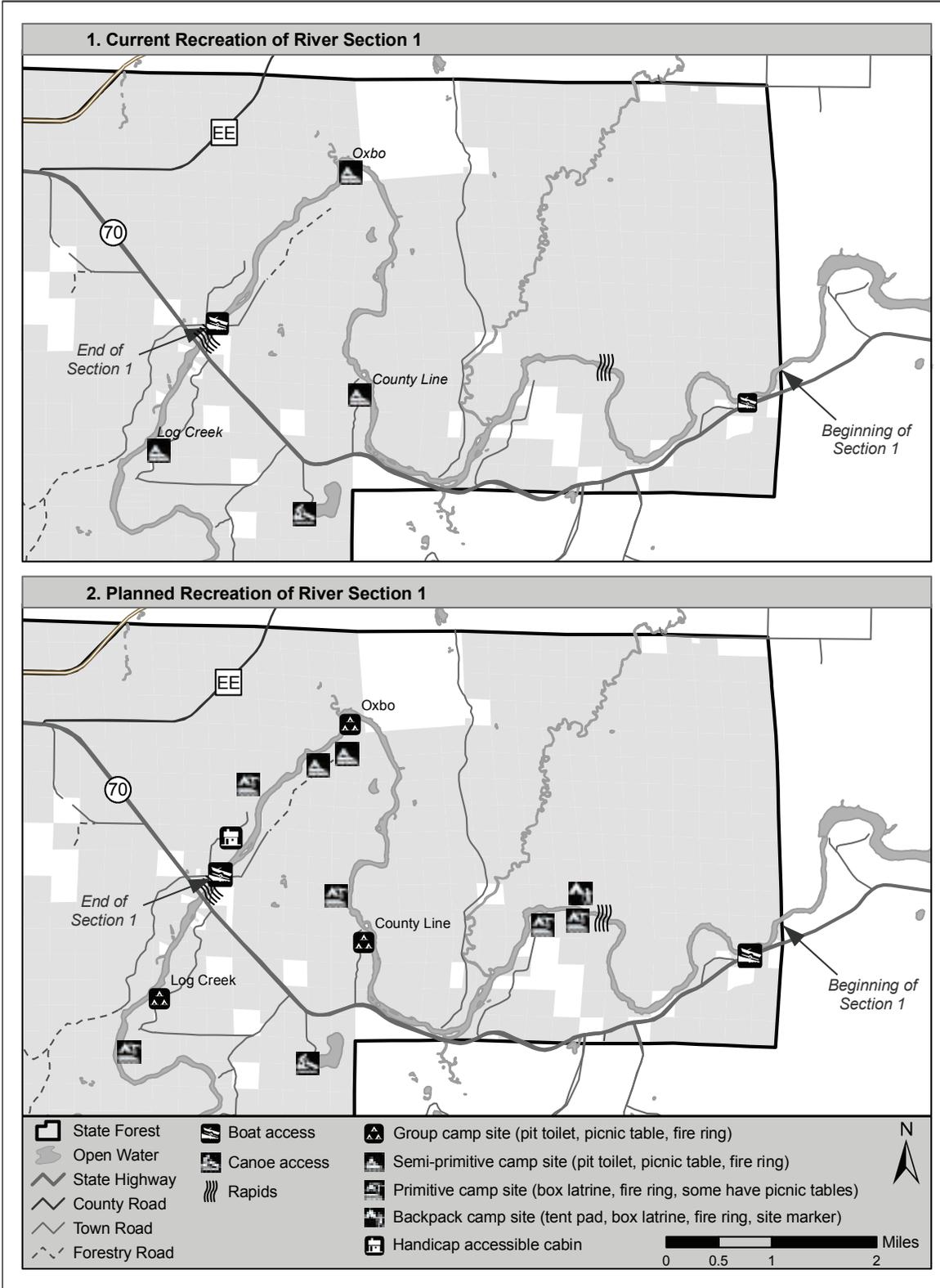
### General River Camping Management Prescriptions

- Manage staffing levels to accommodate new or expanded developments.

- River camping will only be permitted at designated sites. Sites are designed for a one-night-only stay by persons traveling exclusively by watercraft. All people and supplies must be transported by watercraft to the campsite. Winter-only access will be allowed for backpack camping by special permit.
- Restrict camping at group campsites to a maximum of 15 persons. Inform organizations and recreation providers that they be expected to limit the size of river groups, or to split large groups into smaller units to meet the group campsite capacity limit.
- The forest maintains a strict “carry-in, carry-out” policy for all disposable items, refuse and recyclables. Future management may include expanding container regulations on the river, or establishing alcohol-free zones for some locations.
- The forest superintendent has authority to temporarily close or relocate campsites.
- When sited the reroute for the trail will use upland areas as much as possible to minimize impacts on the native community area.



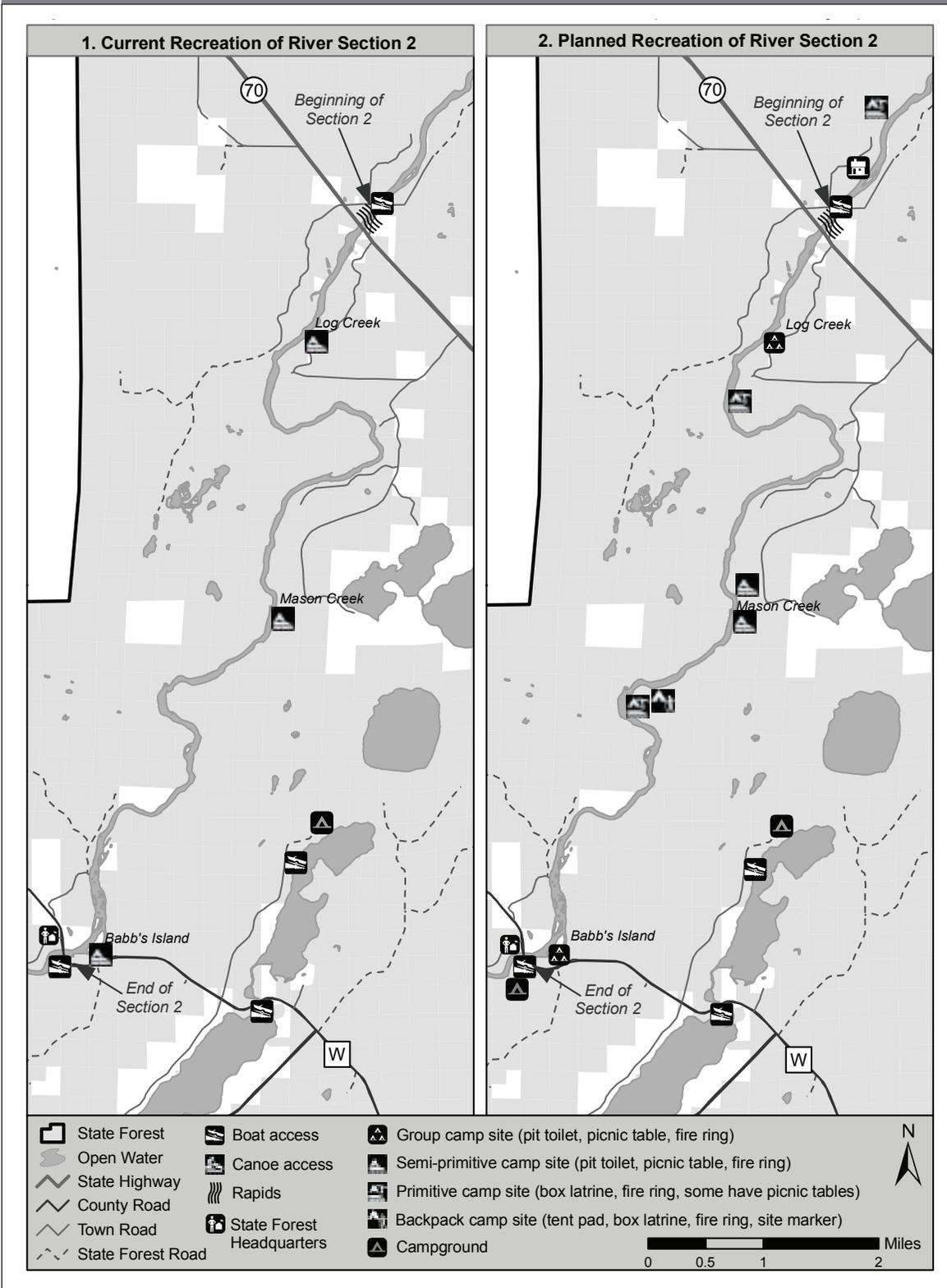
MAP 2.24A CURRENT AND PLANNED RIVER RECREATION – NINE MILE ROAD TO DIX DOX ROAD (SECTION 1)



The delineation of river campsites and landing locations is a general representation for the purposes of illustration and planning and does not reflect the exact final location. More detailed locations will be produced at the Department's discretion as improved, on-the-ground, environmental information becomes available, including topography and other site features.

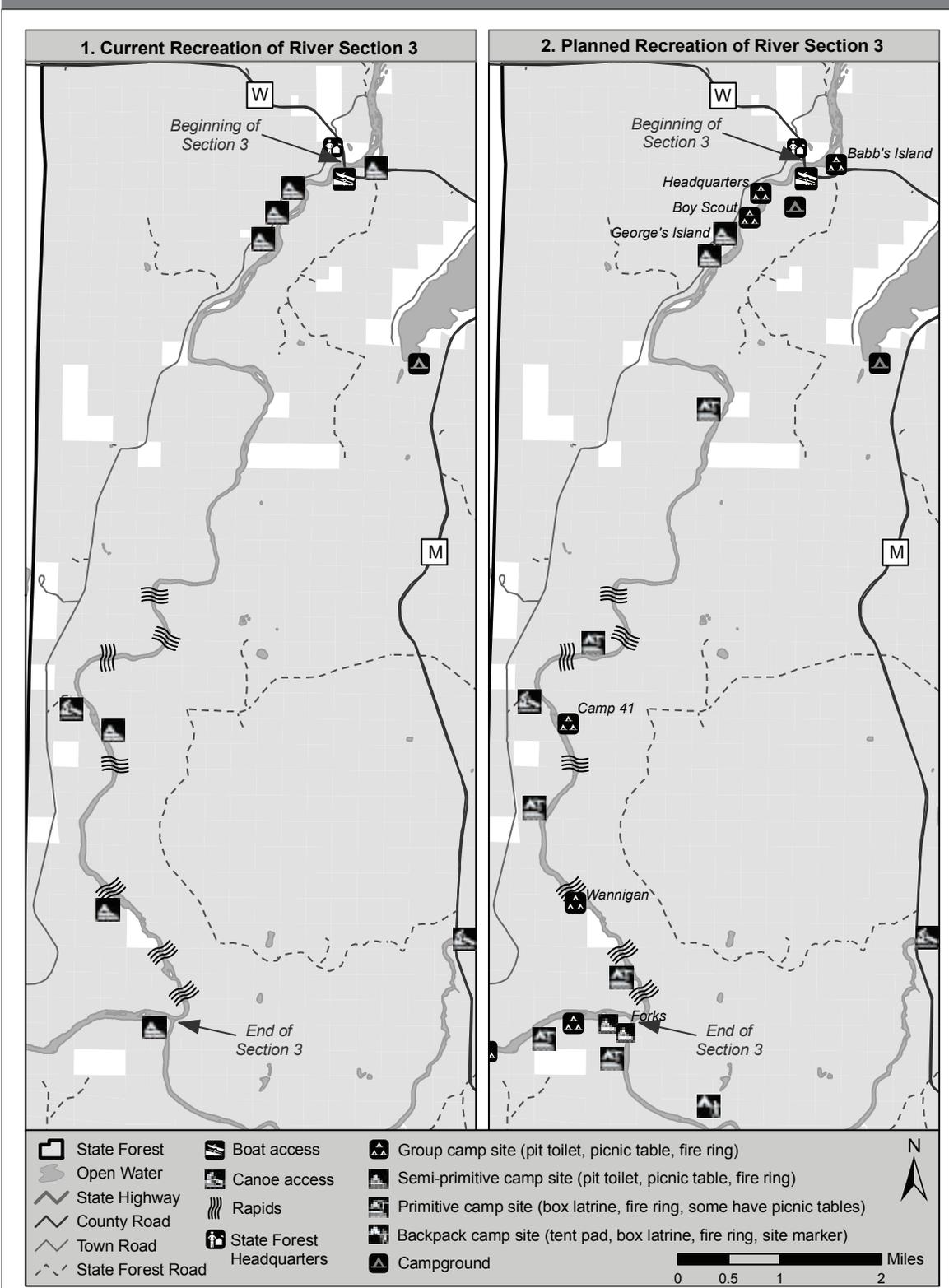
RECREATION MANAGEMENT

MAP 2.24B CURRENT AND PLANNED RIVER RECREATION – DIX DOX ROAD TO HIGHWAY W (SECTION 2)



The delineation of river campsites and landing locations is a general representation for the purposes of illustration and planning and does not reflect the exact final location. More detailed locations will be produced at the Department's discretion as improved, on-the-ground, environmental information becomes available, including topography and other site features.

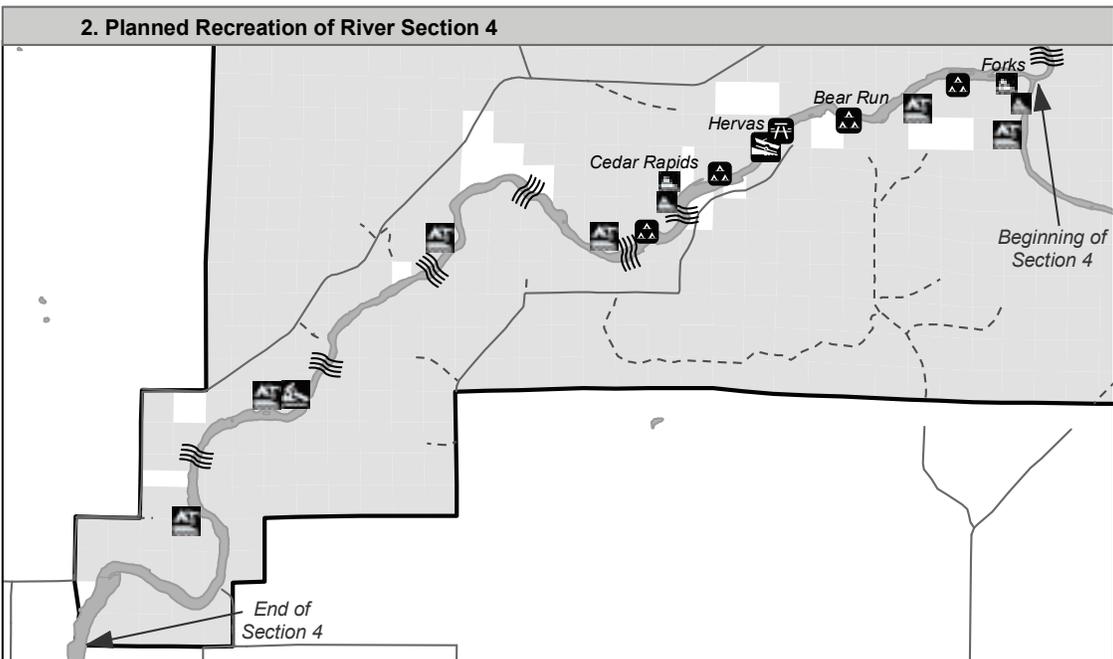
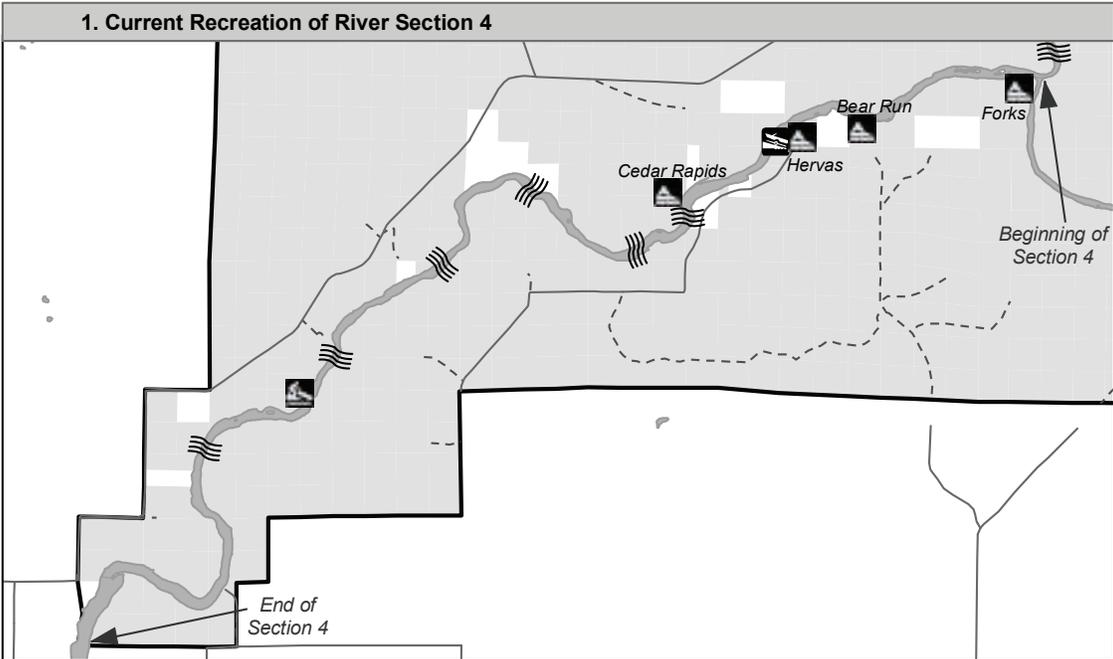
MAP 2.24C CURRENT AND PLANNED RIVER RECREATION – HIGHWAY W TO THE FORKS (SECTION 3)



The delineation of river campsites and landing locations is a general representation for the purposes of illustration and planning and does not reflect the exact final location. More detailed locations will be produced at the Department's discretion as improved, on-the-ground, environmental information becomes available, including topography and other site features.

RECREATION MANAGEMENT

MAP 2.24D CURRENT AND PLANNED RIVER RECREATION – THE FORKS TO FOREST BOUNDARY (SECTION 4)

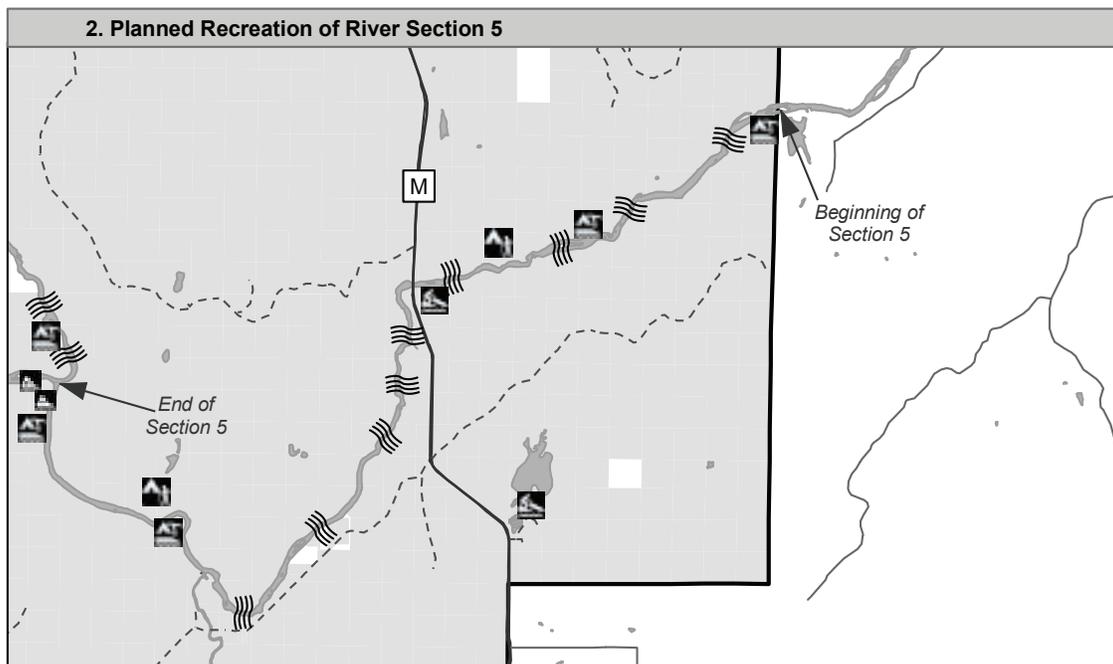
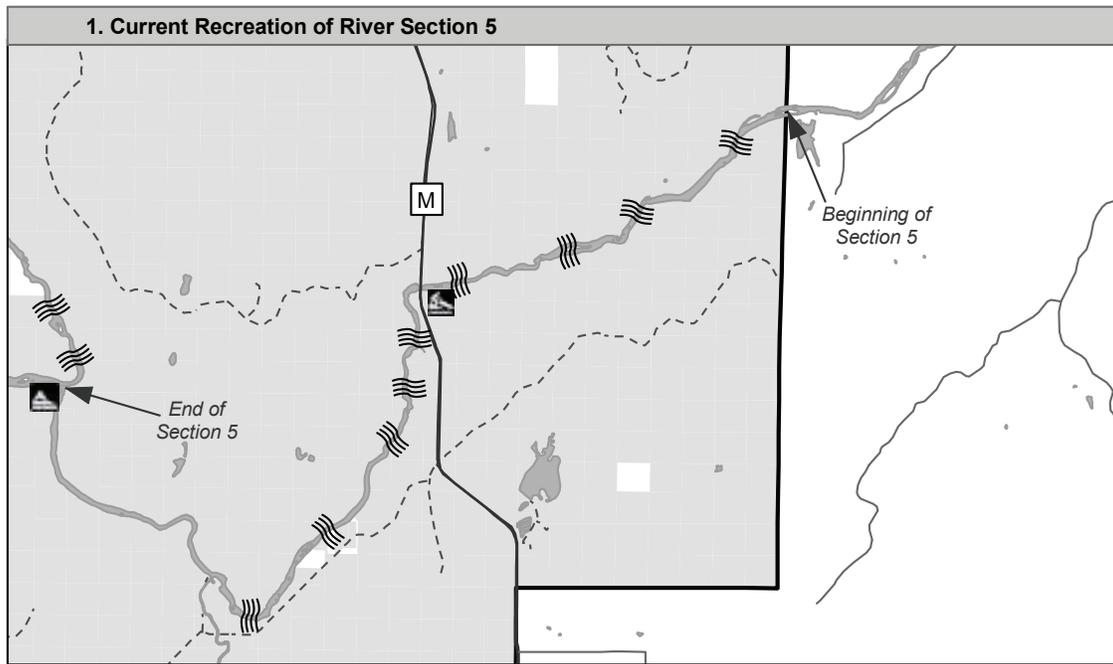


State Forest	Boat access	Group camp site (pit toilet, picnic table, fire ring)
Open Water	Canoe access	Semi-primitive camp site (pit toilet, picnic table, fire ring)
State Highway	Rapids	Primitive camp site (box latrine, fire ring, some have picnic tables)
County Road		Backpack camp site (tent pad, box latrine, fire ring, site marker)
Town Road		
Forestry Road		

N  
0 0.5 1 2 Miles

The delineation of river campsites and landing locations is a general representation for the purposes of illustration and planning and does not reflect the exact final location. More detailed locations will be produced at the Department's discretion as improved, on-the-ground, environmental information becomes available, including topography and other site features.

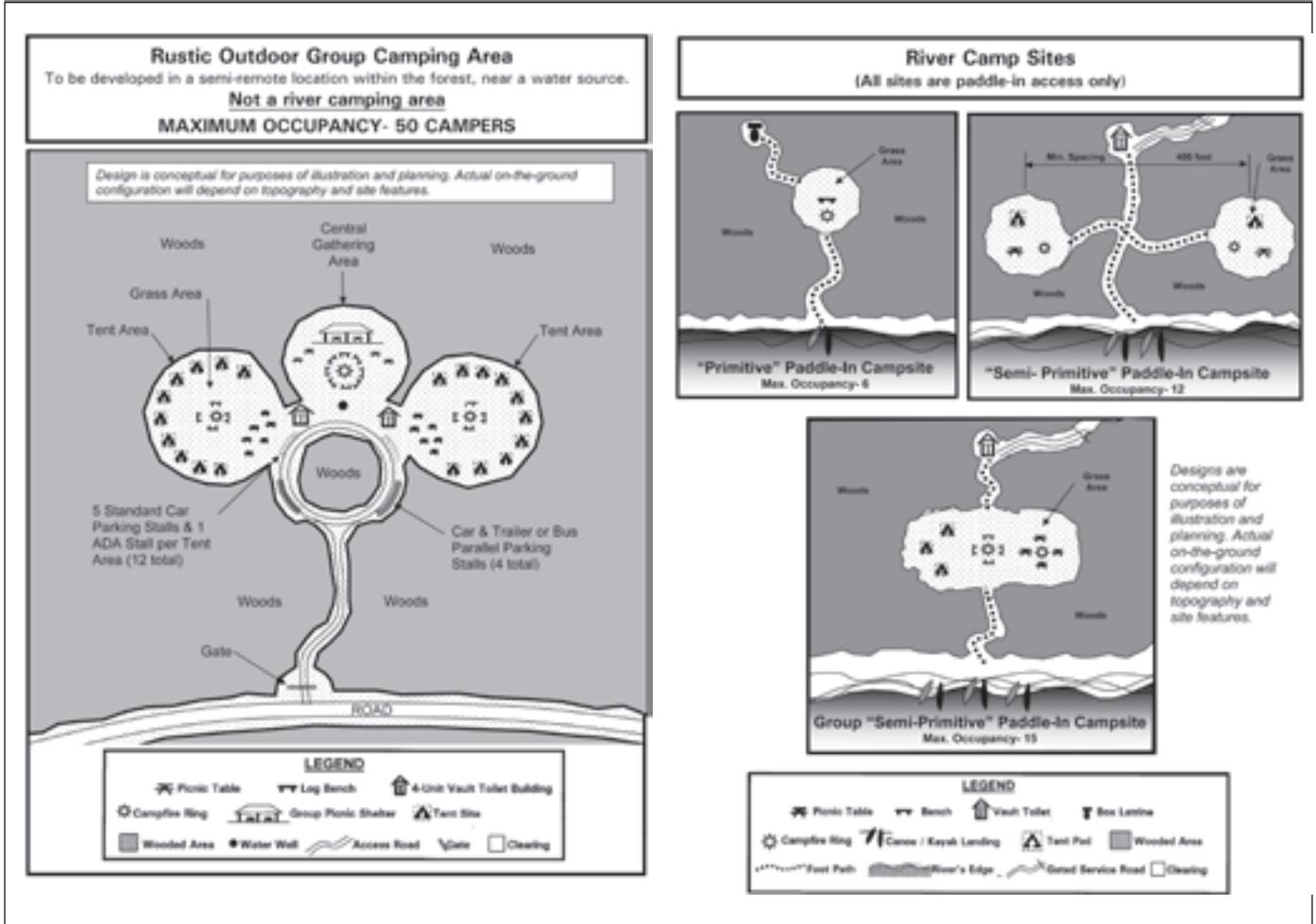
MAP 2.24E CURRENT AND PLANNED RIVER RECREATION – THE SOUTH FORK (SECTION 5)



State Forest	Boat access	Group camp site (pit toilet, picnic table, fire ring)	N ↑
Open Water	Canoe access	Semi-primitive camp site (pit toilet, picnic table, fire ring)	
State Highway	Rapids	Primitive camp site (box latrine, fire ring, some have picnic tables)	0   0.5   1   2 Miles
County Road		Backpack camp site (tent pad, box latrine, fire ring, site marker)	
Town Road			
Forestry Road			

The delineation of river campsites and landing locations is a general representation for the purposes of illustration and planning and does not reflect the exact final location. More detailed locations will be produced at the Department's discretion as improved, on-the-ground, environmental information becomes available, including topography and other site features.

FIGURE 2.21 CONCEPTUAL SITE DESIGN FOR RIVER CAMPSITES.



These river campsite designs are a general representation for the purposes of illustration and planning and do not reflect the exact campsite design. Actual configuration will be determined at the Department's discretion as improved, on-the-ground, environmental information becomes available, including topography and other site features.

## OFF-RIVER RECREATION CAMPING

The Flambeau River State Forest provides a range of camping opportunities, ranging from family campgrounds to remote backpack camping, and special permit camping for deer camps. While existing camping will be maintained, several new, expanded, or improved camping opportunities are planned. Many changes are in response to the public's desire for increased amenities at campgrounds and more remote camping opportunities. Changes include providing electric hookups at Connors Lake Campground, building a small rustic campground beside the river and a new group camp, as well as increasing and improving remote paddle-in and hike-in camping.

### *Management Objectives*

- Provide a range of high quality, barrier-free family camping opportunities in an attractive natural setting at small modern and rustic campgrounds.
- Provide opportunities for large group camping in a rustic outdoor setting.
- Provide opportunities for hike-in, remote, primitive back-country camping at designated sites, and for hunting, fishing camps and other special purpose camping at undeveloped sites.
- Provide opportunities for disabled persons to enjoy the forest and Flambeau River at an ADA accessible cabin.

## CAMPGROUNDS

There are two established family campgrounds on the forest – Lake of the Pines, currently with 30 campsites, and Connors Lake, currently with 29 sites. Each campground offers a nature trail, beach access, plus conventional state forest facilities including vehicle parking, tent pads, vault toilets, picnic tables, fire rings, and drinking water.

### **Connors Lake Campground**

With facility improvements, this campground will be reclassified as a modern campground. Some campsites at Connors Lake Campground will be upgraded with amenities such as electric hook-ups. A portion of campsites will be added to the campground reservation system. Reservable, “walk-in-only” campsites with lake access will be added to further diversify camping opportunities. All sites will provide a tent pad, picnic table, and fire ring. Maximum occupancy accommodates one family or a group of up to 6 campers. Overflow parking will be developed for ten vehicle stalls as needed. The rustic character of the campground will be maintained as much as possible. While not offered at the campground, shower facilities will be available at the Forest Headquarters Visitor Services Area.

### *Management Prescriptions*

- Add electric service to 50 % of campsites and provide accommodations for larger camper units.
- Place 50 % of campsites on the statewide campsite reservation system.
- Develop two or three new reservable, walk-in-only campsites with lake access as topography and features site features allow.
- Bring campgrounds up to current NR 44 standards for site spacing, a minimum of 100 feet or as site space and topography allows. Attempt to maintain the existing number of campsites although though some may be lost to limitations of space and topography.
- Develop a small, open “free-play” area as site features and topography allow.
- Develop overflow parking for up to ten vehicles, trailers, and boats.
- Evaluate opportunities for providing overnight boat mooring facilities and develop them if deemed appropriate.
- Provide electricity at the campground host campsite.
- Install or upgrade nature trails and information facilities (see Nature Trails and Education for more details). Develop and maintain the nature trails at the moderately developed trail standard.

### **Lake of the Pines Campground**

Lake of the Pines Campground will remain a “rustic” family campground and will receive general site improvements to provide a wider range of camping opportunities and meet existing NR 44 standards. Half of the campsites will be added to the campground reservation system. Showers, while not offered at the campground, will be available at the Forest Headquarters Visitor Services Area.

### *Management Prescriptions*

- Adjust campsite spacing, as space and topography allow, to bring campgrounds into compliance with current NR 44 codes. Maintain the existing number of campsites as practicable, although some loss may occur as a result of limited site opportunity /or sustainability.
- Place half of all campsites on the statewide campsite reservation system.
- Replace restroom facilities.
- Construct and maintain a small, open “free-play” area near the campground.
- Install or upgrade nature trails and information facilities (see Nature Trails and Education for more information). Develop and maintain the nature trail at the moderately developed trail standard.

- Develop overflow parking for up to ten vehicles, trailers, and boats.
- Provide electricity at the campground host campsite.
- Evaluate opportunities for providing overnight boat mooring facilities and develop them if deemed appropriate.
- Relocate and redevelop the boat landing outside of Lake of the Pines campground. Provide a barrier-free dock /ramp, parking and vault toilets

### Headquarters River Campground

#### *Management Prescriptions*

A new rustic campground with 5-10 campsites will be developed across the river from the Forest Headquarters. (See Area 21 for details).

### Outdoor Group Campground

#### *Management Prescriptions*

- Develop a rustic outdoor group campground to accommodate up to 50 campers, to be occupied for up to seven nights on a reservable, fee basis. The group campground should be located near a water resource in a semi-remote location of the forest. The site's amenities will include a picnic shelter, tables, group fire ring, drinking water, vault toilets, parking, and gated access. All facilities will be barrier-free. See design diagram Appendix E.
- Allow restricted vehicular access to the camp.

### ADA Accessible Cabin

A vehicle-accessible ADA cabin will be constructed near the Flambeau River for use by disabled persons and their camping party of up to six persons. See the River Camping Section for additional details and management prescriptions.

### Hike-in Backcountry Camping

#### *Management Prescriptions*

- Develop four reservable, primitive, hike-in campsites at remote locations on Hackett Creek, Butternut Creek, Mason Creek, and Bull Creek (Shown on Map 2.23, Current and Planned Recreation). These designated sites will be widely dispersed and offer the following amenities: a tent pad, fire ring, and box latrine at each campsite. As needed, develop and maintain a 1-3 mile, primitive hiking access trail to each site.
- Offer special permits for dispersed backpack camping along a new linear hiking trail, the Wild River Trail. No designated facilities or amenities will be provided and there is no camping fee.

- Offer special permits for winter camping at canoe campsites from December-March. Permits will be available on a no-fee basis.

### General Permit Camping

The FRSF has a long history of providing camping by permit for short-term camping at undeveloped sites across the property for hunting, fishing, and backpacking. Traditional camps are established annually for deer hunting and sturgeon fishing parties. Special camping permits are also available for dispersed backpacking and winter camping at undeveloped, non-designated sites.

#### *Management Prescriptions*

- Maintain a permit system to administer camping opportunities for deer hunting, sturgeon fishing, dispersed backpacking, and winter camping at dispersed, undeveloped, non-designated sites.

### DAY-USE AREAS

Day-use areas typically are well developed destination sites that provide for variety of recreational uses such as picnicking, swimming, volleyball and play ground activities. There currently is only one day-use area on the forest, Connors Lake Picnic Area. This is a well developed, modern facility with a 300-foot swimming beach, boat landing, paved parking, pet walking area, fishing, beach-front benches, drinking water, volleyball court, horseshoe pits, and vault toilets. The picnic area includes a reservable shelter with electricity. The Connors Lake Day Use Area will be maintained and improved. A visitor Services Area focusing on information and education and other visitor services will be developed at the forest headquarters site, see Area 21 for details.

#### *Management Objectives*

- Provide areas for a variety of developed day-use activities on the FRSF; such as picnicking, boating, swimming, fishing, outdoor play, as well as more passive recreational activities, such as interpretation and education.

#### *Management Prescriptions*

- Maintain and improve the Connors Lake Day Use Area following the NR 44 standards for a modern day use area. Upgrade the existing picnic area with playground equipment and fishing piers. Provide informational facilities to interpret the site and to provide visitor education.

### LAKE AND FLOWAGE WATERCRAFT ACCESS

There are 5 lake and flowage watercraft landings on the forest. Some landings see heavy use and are in need of improvement. Minor changes are planned, such as the addition of fishing piers and upgrades to increase accessibility for all visitors.

Table 2.35 shows current landings, type of landing and planned changes.

#### *Management Objectives*

- Provide waterbody-appropriate watercraft access to the FRSF lakes and flowages for fishing and boating.
- Management Prescriptions:
- Develop and maintain barrier-free dock /ramp at Connors Lake.
- Relocate and redevelop the landing at Lake of the Pines. Provide a barrier-free dock /ramp.
- Install a boat /trailer washing and collection station for milfoil at Connors Lake (currently no milfoil on Lake of the Pines.)
- Renovate landings and put-ins/take-outs as necessary to protect shoreline or to improve access.
- Install and upgrade as needed information facilities at landings to provide maps and details to educate visitors about water-related conservation issues, rules or recreational opportunities.

### EDUCATION AND INTERPRETATION

The Flambeau River State Forest is rich in cultural history and tradition worth sharing and preserving for future generations. The forest's rich history, diverse forest and water resources, and quality resource management, offer abundant learning opportunities.

A range of educational activities will be initiated to enhance visitors' experience and appreciation, while alerting them to benefits and opportunities that the forest provides. Educational outreach will enhance the forest's recreational niche by encouraging responsible behavior and use of forest resources. Information facilities will be installed or upgraded at key public contact points, landings and trailheads.

#### *Management Objectives*

Provide coordinated and enhanced educational opportunities, facilities and services at appropriate sites throughout the forest following a variety of property-appropriate themes, such as natural resource management, environmental issues, nature interpretation, and outdoor recreation.

Utilize educational programs, exhibits and messages to enhance and protect forest resources.

#### *Management Prescriptions*

- Develop a comprehensive forest-wide information/interpretation/education plan to design the content and coordinate the delivery of education and public communications services on the Forest. Integrate implementation of the plan with other aspects of this master plan. Revise the plan and the delivery of information services as needed to include new topics of public interest or to address emerging conservation issues, or to improve delivery of the program to the public. See box 2.1 for details on what should be included in the plan.

### TEXT BOX 2.1: INFORMATION, EDUCATION AND INTERPRETATION PLAN SPECIFICATIONS

Design and provide self-guided interpretation exhibits and interactive learning experiences. Interpretive themes to consider for the exhibits include, but are not limited to:

- The Flambeau as a historic river highway- travels on the river
- Flambeau Forest's rich historical roots – Native American history, logging camps and river drives, CCC camps, historic hunting camps and partnerships
- People of the forest – from Native Americans, to loggers /settlers, historic figures, and recreational users
- The "living forest" – natural dynamics including wind effects and historic wind events, unique natural communities and resources
- Today's working forest – sustainable forest management
- A destination location for birding and wildlife viewing (the FRSF is stop #71 on the Great Wisconsin Birding and Nature Trail, and is near stop #64, the Kimberly Clark Wildlife Area).

Develop a self-guided auto tour route to interpret forest resources and management, and to educate visitors about public benefits and opportunities that the forest offers. (See "Motorized Recreation" for more information.)

Provide information and river education including:

- Delivery of information on recreation rules and etiquette for camping and water recreation at landings, headquarters, campsites and campgrounds, and educational programs; and
- Development of materials to promote canoe safety and skills, paddling and camp etiquette, and low-impact camping. Delivery might include such techniques as: safety, skills & etiquette cards; brochures; web pages, educational presentations or video.

Use the FRSF DNR web site to provide current maps, forest attractions, camping opportunities, and other user information.

- Identify opportunities for forest related educational outreach with area schools and communities.
- Take the following actions to support the delivery of information/interpretation/education services. (These are in addition to other related actions contained in the master plan.)
- Convert the former forest headquarters building for education and interpretative use. Remodel building interior to provide open space for exhibits. Provide interior /exterior interpretive exhibits as directed by the interpretive plan.
- Develop the fire tower as a forest landmark /historical interpretive stop. Consider the location as a site for supervised interpretive programs. Research the potential of providing a viewing tower. Construct parking area for 3 cars and 1 car trailer stalls.
- Maintain a system of self-guided nature trails at campgrounds and other key locations on the forest.
- Install/upgrade information facilities at landings, trail heads, campgrounds, river campsites, and day-use areas as appropriate – e.g. educational kiosks, rules and policy signs, maps, designated use or capacity.
- Consider staffing needs appropriate to development of educational facilities and services. Seek to provide professional staff, naturalist services and programming for forest visitors and recreation enthusiasts at boat landings, campgrounds, and headquarters.
- Maintain a law enforcement presence in concert with educational efforts to promote safe and sustainable river recreation.
- Seek opportunities to partner with other agencies on education projects and initiatives.
- Provide opportunities for casual hiking, mountain biking, skiing, snowshoeing, and ski-joring, and nature appreciation on improved trails.
- Provide family biking and hiking opportunities, particularly on routes that provide access to many of the primary recreational facilities on the Forest.
- Provide barrier-free trail opportunities.

### Wild River Hiking Trail

A new primitive hiking trail will be developed, extending the length of the forest and roughly paralleling the Flambeau River.

#### Management Prescriptions

- Lay out and construct a minimally developed, primitive trail, approximately 35 miles in length that roughly parallels the Flambeau River.
- Establish trail heads in conjunction with river landings or as needed to provide appropriate trail access points. Provide informational kiosk and trail maps. Trail markings should be appropriate to the recreational use classification of the area.
- Allow dispersed trailside backpack camping by special permit. No designated facilities or amenities will be provided and there is no associated fee.
- Develop trail spurs or connectors to scenic locations, day-use areas, campgrounds, and primitive camping facilities as opportunity allows.
- Seek opportunities to work with external partners to connect to trail systems on other public lands such as the North Country Trail, and trails extending northward to Lake Superior.

### NON-MOTORIZED TRAILS

Demand for hiking trails is high throughout Wisconsin, and outdoor recreationists are looking for more year-round opportunities to hike and observe nature. Non-motorized trail opportunities range from undesignated woods roads and hunter-walking access routes, to designated trail systems like the 14 mile Flambeau Hills Trail that is used for cross-country skiing in winter and mountain biking and hiking in snow-free seasons. The forest also offers a combined 3.5 miles of nature trails at the two campgrounds. Hiking, biking, horseback riding and snowshoeing will continue to be allowed throughout the forest on undesignated "woods roads". Opportunities for hiking will be increased and enhanced as new trails are developed and existing trails are improved. Abundant additional hiking, biking, and horseback riding opportunities will continue to be available on forest roads.

#### Management Objectives

- Provide opportunities for backcountry trail hiking and backpacking on primitive trails.

### Oxbo Trail System

The (former) Oxbo Ski Trail will be redesignated and improved for use as a multi-use, year-round non-motorized recreational trail area. The facility consists of 8 miles of trail situated on forested land bordered by an oxbo, or bend, of the Flambeau River. Trail loops offer varied topography to accommodate a range of recreational skill levels. Trailhead parking is located north of State Highway 70 and Snuss Boulevard. Future uses may include skiing, snowshoeing, and ski-joring in winter and hiking and mountain biking in the snow-free seasons.

#### Management Prescriptions

- Maintain an eight mile system of lightly to fully developed trails for year-round recreational activities. Manage to provide high quality trail experiences with a minimum of conflicts between different user groups. The trail will meet design standards for ski

trails, unless another activity is designated as the primary use.

- Install trail signage confidence markers and maps, and develop an accompanying map brochure for various trail uses.
- Upgrade parking area to include a vault toilet and informational kiosk.

### Flambeau Hills Ski Trail System

The Flambeau Hills Trail is the only designated cross-country ski trail currently on the property, with 14 miles of groomed and tracked trails for traditional and skate skiers, and is a popular destination for cross country skiing and hiking in snow-free seasons. The trail system offers loops of varying skill levels from easiest to most difficult. The trail winds through a mix of hardwoods and conifers, crossing several bridges and offering occasional views of the Flambeau River. Trailhead parking areas are located on Highway 70 and on Highway W.

#### Management Prescriptions

- Maintain the 14 mile Flambeau Hills ski trail as a system of lightly to fully developed trails.
- Construct a ski-trail warming house and equipment shelter at the trailhead.

### Nature Trails

#### Management Prescriptions

- As part of the Forest's Education and Interpretation program, redevelop nature trails and interpretive signage at Lake of the Pines and Connors Lake campgrounds. Develop and maintain these as moderately developed trails.

### ADA Accessible – Barrier-free Trails

#### Management Prescriptions

- Install a moderately developed, barrier-free nature trail on the property in the new forest headquarters visitor services area. See Management Area 21.
- Seek opportunities to make suitable trails or portions of trails barrier free.

### Backcountry Hiking Trails

#### Management Prescriptions

- Develop primitive hiking trails to provide access to four new backcountry campsites (See Primitive Backcountry Camping).

### Family Bike/Hike Trail

A family biking and hike route will be developed to link the campgrounds and a number of primary recreational sites on the Forest. The trail will serve both as a recreational

trail and as an alternate transportation route for families hiking or biking to the forest headquarters, shower, playground, or beach facilities.

#### Management Prescriptions

- Construct a family bike and hike trail that connects the Connors Lake and Lake of the Pines campgrounds with the Connor's Lake Picnic Area and the FRSF Headquarters Area. Also, extend a link to the Flambeau Hills trail system. Total trail distance will be about 7 miles.
- Construct the trail as a fully developed trail (with a crushed gravel surface) following existing trail corridors and road right-of-ways as much as possible. For safety, design the trail route to avoid conflict with highway and recreational vehicles by minimizing road crossings and travel along highway shoulders and motorized recreation trails.

### MOTORIZED TRAILS

Motorized recreation on the FRSF is well established, providing 38 miles of trail for ATV riding from May 15-November 15, and snowmobiling throughout the winter. The trail connects to another 74 miles of snowmobile and 65 miles of ATV riding on the Tuscobia State Trail. The primary purpose of the current FRSF trail system is to provide a connection to other regional trail systems for snowmobile and ATV travel. Motorized trails are developed and maintained to either the lightly developed trail standard or the fully developed trail standard as appropriate for the designated use and site conditions. Some lightly developed trails may have sections with a higher level of development for environmental protection purposes.

#### Management Objectives

Provide sustainable, designated snowmobile and ATV trail riding opportunities as part of regional trail networks; and, as is feasible and compatible with other Forest objectives, support the expansion of the regional trail networks.

### All-Terrain Vehicles (ATVs)

There are 38 miles of ATV trail running nearly the length of the property from its northern link with the Tuscobia Trail, to Bear Creek Road, about 2 to 3 miles from the southern property boundary. Parking is available at four trailhead locations on the forest. The Department supports the development and maintenance of ATV riding opportunities on designated trails, particularly those that link with sustainable regional trail networks. This plan provides for extending the ATV trails by approximately six miles to connect to regional trail systems on the east and south. An additional ATV trail development, an ATV trail loop near Connors Lake Day Use Area, was evaluated but is not

proposed (see motorized recreation alternatives in the Environmental Analysis, Chapter 2).

#### *Management Prescriptions*

- Develop or maintain sustainable ATV trails on the Forest. Follow the Wisconsin Department of Natural Resources Guidance for All-Terrain Vehicle Use on Department Lands (WDNR 2005)
- Using existing snowmobile routes, construct about three miles of new ATV trail to connect the existing Flambeau River State Forest ATV trail to the Price County Trail system to the southeast. Trail designation and implementation is dependant on establishing a suitable trail corridor, and on the future extension of Price County trail systems.
- Using existing snowmobile routes, construct about three miles of new ATV trail to connect the existing Flambeau River State Forest ATV trail to the Rusk County Trail system to the south. Trail designation and implementation is dependant on establishing a suitable trail corridor, and on the future extension of Price County trail systems.
- Over time, allow partial canopy closure of ATV trails after initial construction to provide a more intimate riding experience. Do not allow too much closure as the vegetation prevents the trail from drying out, increasing impacts and maintenance.
- Construct a ramp at trail head(s) for loading/unloading ATVs.
- Establish interpretive stops at appropriate locations along trails as provided for in the Forest interpretive plan.
- Adjust timing of trail use (open/closed dates) for seasonal trail conditions.
- Consider law enforcement needs appropriate to increased trail mileage.

#### **Utility Terrain Vehicles (UTVs)**

Effective May 2010, the property began participation in the Utility Terrain Vehicle pilot program established by Act 175, 2009 which allows the Department to authorize the use of UTVs on designated ATV trails until June 30, 2012.

#### **Snowmobiles**

There are 55 miles of snowmobile trails on the forest. Snowmobiling is a popular winter activity on the Flambeau River State Forest and trails link to the Tuscobia State Trail and to Sawyer, Rusk and Price County trail systems. The state forest will maintain existing snowmobiling trails with the exception of one trail reroute that is planned for safety reasons.

#### *Management Prescriptions*

- Support and work in cooperation with partners to maintain a safe system of snowmobile trails throughout the forest.
- Develop a trail reroute from Price Lakes Road to trail #36 (approx. 2 miles). This will increase safety by removing travel from the town road Snowmobile/ATV trail facilities will be upgraded to accommodate users' needs and enhance sustainability.
- Due to the linear nature of the river trail, multiple landing access points, and the varied schedules of river travelers, river campsites are traditionally available on a first come-first served basis. As new river campsites are developed and renovated, consideration will be given to establishing some reservable campsites, possibly near forest headquarters, where administration of a reservation system may be practical. Trails will be located on upland sites to minimize impacts.

#### **HUNTING**

The Flambeau River State Forest is a destination for many hunting enthusiasts. Deer, grouse, woodcock, and bear hunting are popular. The state forest will continue to offer abundant opportunities for small and big game hunting and trapping. The diverse landscape of forest types, lakes and wetlands found on the property will continue to provide habitat for many game species.

Hunters desire good access to trails and habitat. It is important to provide multiple opportunities and to disperse hunters as much as possible for safety, to enhance users' experience and to avoid user conflicts. The forest will maintain 65 - 80 miles of lightly developed management roads that may also be used as hunter-walking access (See the Road Management section of this plan). Logging roads and non-designated trails will continue to provide hunting access. Non-motorized areas on the forest will also remain at current levels. Regulations governing hunting and trapping are outside the scope of the master plan.

#### *Management Objectives*

- Maintain and support traditional outdoor sporting activities such as hunting and trapping and fishing by maintaining trails and enhancing or upgrading existing boat landings, access points, and other facilities.

#### *Management Prescriptions*

- Increase the current level of hunter-walking access routes consistent with the Forest's road access plan (See Road Management section of this plan, and Map 2.26 in appendix).

**RECREATION MANAGEMENT**

- Provide maps of hunter- walking access routes, brochures and information on the FRSF web site.
- Consider the “adopt-a-hunting trail” concept. Explore additional funding sources and opportunities to work with private groups for partner projects.

**FISHING**

The Flambeau River State Forest is a traditional destination for fishing. Fishing enthusiasts pursue both warm and cold water species on the Flambeau River and surrounding lakes or along numerous streams that feed the river. Developed and undeveloped landings provide access to water resources throughout the forest. Some are in need of restoration or enhancement to accommodate use and demand. Information and access are important topics to sports enthusiasts who want to know about rules and opportunities on the forest.

Access to water resources will be maintained at lakes and river corridors throughout the forest to provide opportunities for water recreation, boating, and fishing. Piers will be developed in three locations to enhance opportunities for shoreline fishing. Some boat access sites are open in the winter for ice fishing. Fishing regulations are outside the scope of the Master Plan.

*Management Objectives*

- Support and provide opportunities for fishing.

*Management Prescriptions*

- Maintain reasonable access to traditional fishing areas on the north and south forks of the Flambeau River and forest lakes.

- Develop fishing piers at Connor’s Lake Campground, Connors Lake Day-use Area, and at Lake of the Pines Campground.
- Maintain primitive walking access trails to Hackett and Price Creeks.
- Provide information about fishing rules and opportunities at information facilities, in publications or online, taking care not to over-promote specific locations.
- Continue to work in cooperation with the fisheries division on trout stream improvement.

**PUBLIC MOTOR VEHICLE ACCESS**

There are approximately 61 miles of state forest roads open for public use, ranging from lightly developed woods roads to fully developed roads. The Road Management Plan focuses on primary corridors through the forest that provide access to forest resources for management purposes and for hunters and other recreation enthusiasts.

*Management Objectives*

- Provide public access opportunities according to the forest’s road access plan.

*Management Prescriptions*

- Maintain the level of forest roads and trails accessible to the public according to the current access plan.
- Maintain roads and trails according to prescribed road or trail classifications.
- Maintain a current map of roads and trails as part of the road management plan.
- Cooperate with county forests in providing future road access to county forest lands through state property if needed for management purposes or public licensed vehicle access.





## REAL ESTATE MANAGEMENT

### FOREST BOUNDARY EXPANSION

The Flambeau River State Forest was established in 1930 with 3,600 acres and a focus on protecting a small segment of the Flambeau River. It now protects over 75 linear miles of both the North and South Forks of the Flambeau River, state designated as Exceptional Resource Water and Outstanding Resource Water respectively. The FRSF comprises over 91,000 acres in five counties (Iron, Ashland, Price, Sawyer, and Rusk). In addition to protecting the river, the state forest is one of several large public land ownerships in the region, including the Chequamegon-Nicolet National Forest, Price, Rusk and Sawyer County Forests, and other State properties including the Turtle Flambeau Flowage, Hay Creek-Hoffman Lake, and Kimberly Clark Wildlife Areas. The forest boundary captures an outstanding natural amenity base locally and regionally, and provides connectivity to other public lands.

Six boundary expansion areas, totaling approximately 49,000 acres, have been incorporated into the Flambeau River State Forest project boundary (See Appendix Map 2.25: Project Boundary). These areas were selected for their ability to provide important additional ecological, economic, and social values to the property and region (Table 2.38: Boundary Expansion Acres). The boundary expansion aims to protect additional undeveloped shoreline along the Flambeau River and its flowages, wilderness lakes, high conservation value forests and unique wildlife habitats. Large tracts of undeveloped industrial forestland adjacent to the property provide opportunities to connect public lands, expand recreation opportunities, and create large blocks of high quality forest resources, while also contributing to the local economies of Price, Sawyer and Rusk Counties through forest production and increased tourism. These opportunities are discussed in greater detail in the area descriptions below. If all lands were purchased within the expanded property boundary, the Flambeau River State Forest would encompass approximately 140,000 acres.

### EXPANSION AREAS

#### Price Lakes Complex

Acres: 18,539

This area lies east of the Flambeau River State Forest boundary. Acquisition of this area would provide permanent protection of several undeveloped or lightly developed lakes within a mosaic of quality northern forest. This area would

also connect with the Kimberly Clark State Wildlife Area (8,700 acres), creating a large continuous block of public land.

#### Expansion Area Opportunities:

- Protect an important complex of undeveloped lakes, wetlands, and natural communities
- Create a large block of continuous forest land to maintain and enhance existing public uses
- Provide important habitat connectivity with Kimberly Clark State Wildlife Area to the east and Price County Forest to the south.
- Identified as a Conservation Area Opportunity for Species of Greatest Conservation Needs

### North Fork Watershed

Acres: 10,512

This area lies northeast of the Flambeau River State Forest boundary. Acquisition of this area would protect more than 8 miles of the North Fork of the Flambeau River along its northern bank and protect several tributaries, including the headwaters of Nine-Mile Creek. This area provides connectivity with the Chequamegon-Nicolet National Forest to the northeast.

#### Expansion Area Opportunities:

- Protect an important portion of the North Fork of the Flambeau River corridor
- Create a large block of continuous forest land to maintain and enhance existing public uses
- Provide linkages between blocks of existing public lands to provide important habitat connectivity, connect regional recreation trails and protect tributaries
- Protect important habitat areas for unique species (this area is adjacent to a native community management area)

**TABLE 2.38 BOUNDARY EXPANSION ACRES**

Expansion Areas	Acres
Price Lakes Complex	18,539
North Fork Watershed	10,512
Western Unit	8,265
Big Falls Flowage	9,954
South Fork Buffer	990
Upper North Fork Buffer	859
<b>Total Acres</b>	<b>49,184</b>

- Opportunity for elk and marten introduction due to the remoteness and undeveloped landscape
- High conservation value forests have been identified in this area, with scattered pockets of old-growth hemlocks

### Western Boundary

Acres: 8,265

This area lies west of the Flambeau River State Forest boundary. Acquisition of this piece would create a large block of continuous forest land, connecting state forest land with Sawyer County Forest land to the north and south. This expansion would allow for greater recreational access which has become more restrictive with changes in private ownership.

#### *Expansion Area Opportunities:*

- Create a large block of continuous forest land, most of which is presently under a single ownership
- Connect state and Sawyer County forest land to create a large, continuous block of public ownership and connect important regional recreation trails
- Continue sustainable forestry practices on forested lands
- Existing County Highways (M and W) provide access to the area for management and recreation

### Big Falls Flowage

Acres: 9,954

This area lies south of the Flambeau River State Forest boundary. This is an important component of the boundary expansion, protecting 2.5 miles of the Flambeau River shoreline and Big Falls Flowage. Additionally, this acquisition area would create a large block of continuous forest land, most of which is presently under one ownership (industrial forest). It would also connect state owned forest land with Silvernail State Wildlife Area and Sawyer and Rusk County Forests create a contiguous block of public ownership.

#### *Expansion Area Opportunities:*

- Protect an important portion of the Flambeau River corridor and Big Falls Flowage
- Connect state and county owned forest land to create a large, continuous block of public ownership and connect important regional recreation trails
- Create a large block of continuous forest land, most of which is presently under a single ownership and could be secured to maintain and enhance existing public uses
- This area includes a portion of the Thornapple River, which has been identified as a state Conservation Opportunity Area.

### South Fork Buffer

Acres: 990

The 400-foot buffer protects 6.7 miles on both sides of the South Fork Flambeau River and extends from the existing State Forest Boundary to the Kimberly Clark State Wildlife Area boundary. This acquisition would buffer and protect the scenic qualities of the undeveloped South Fork Flambeau River, as well as the unique Skinner Creek spring complex that flows into the river.

#### *Expansion Area Opportunities:*

- Buffer and protect river corridor to preserve the scenic qualities of the undeveloped river way
- Provide a buffer against incompatible land uses that would diminish visitor experience in the river corridor
- Protect critical portions of rivers or streams and ensuring the quality of the larger watershed

### Upper North Fork River Buffer

Acres: 924

The 300-foot buffer protects 6.5 miles on both sides of the North Fork Flambeau River. This area extends from the Department's existing ownership to the City of Park Falls and from Park Falls to Smith Lake, a Price County protection area. This acquisition would buffer and protect the scenic qualities of the undeveloped North Fork Flambeau River. In addition, new public access points could be established to provide a "river trail" experience.

#### *Expansion Area Opportunities:*

- Buffer and protect the river corridor to preserve the scenic qualities of the undeveloped river-way
- Provide a buffer against incompatible land uses that would diminish visitor experience along the river corridor
- Protect critical portions of rivers or streams and ensure the quality of the larger watershed
- Establish new and/or enhance existing accesses to the river and adjacent lands to promote public access and establish a "river trail"

### Other Conservation Opportunities

Just west of the Western Boundary, is a large block of privately-owned industrial forestland that has been recognized as an important area for resource protection and recreational opportunities. While the area is not included in the property boundary because of its large size, it has been identified as having considerable ecological, economic and social attributes under its current ownership, including sustainably managed forests, recreation trails and available public access. The land is located west of CTY Hwy M to the Thornapple River and south

of CTY Hwy W to the Sawyer County Forest and is approximately 28,000 acres in size.

The area provides key amenities including terrestrial and aquatic system Conservation Opportunity Areas (COAs) for species of greatest conservation need, including the Thor-napple River, and recreational access points, including regional motorized trail opportunities. The Department would work with local governments to evaluate options for preserving this land, including conservation easements.

### ACQUISITION POLICIES

All property purchases are on a willing seller basis. As required by state and federal laws, the Department pays just compensation for property, which is the estimated market value based on an appraisal. At times, it is in the interest of the Department and the landowner for the Department to acquire only part of the rights to a property, or an easement. The Department has a number of easement options available to address these situations.

Landowners within the state forest boundary will be contacted periodically by Department staff to explain the Department's land acquisition program and to see if they have an interest in selling their property. Acquisition priorities within the state forest vary from year to year and are based on a variety of factors, such as resource management or recreation needs and available funding.

Master plan amendments will be done when and as required by Wisconsin Administrative Code NR 44.04 when adding newly acquired lands to the Forest Plan.

### AIDES IN LIEU OF TAXES

Local governments and communities are often concerned about the perceived reduction of the tax base when private lands come under public ownership. According to State Statute 70.11(1), property acquired by Wisconsin Department of Natural Resources will come off the tax roll. However, in lieu of the loss of tax base, each taxing jurisdiction receives an aid payment dependent on the year the land was purchased (Wis. Stats. 70.113 & 70.114). Lands purchased by the Wisconsin Department of Natural Resources after January 1, 1992 (Wis. Stats. 70.114) pay aids-in-lieu-of-taxes that are similar to property taxes that would have been paid had the land remained in private ownership.

The difference between the Wisconsin Department of Natural Resources aid-in-lieu-of-tax program, as outlined in Wis. Stats. 70.114, and private lands is how the assessed value is determined. For lands purchased by the Wisconsin Department of Natural Resources the initial "estimated fair market value" is set at the purchase price of the property, which is based on an appraisal. If for any reason, such as a gift or partial donation, the purchase price is less than the property's current estimated fair market value as indicated by tax records, then the current tax value will be used instead. Once the Department's estimated fair market value is determined, the local taxation district's level of assessment is applied to determine the assessed value. In subsequent years, this value is adjusted to reflect the change in the assessed value of the land in the taxation district. All other aspects of the way the Wisconsin Department of Natural Resources pays aid-in-lieu-of-tax are the same as those for a local taxpayer. More detailed information on how the Department pays property taxes may be found in a publication entitled Public Lands and Property Taxes, PUB-LF-001 07REV or <http://dnr.wi.gov/org/land/facilities/documents/PublicLandandPropertyTaxesPUB-LF001.pdf>

### EASEMENTS, ACCESS PERMITS, AND LAND USE AGREEMENTS

- Easements provide access across state property for utilities, town roads, or county highways. Easements are permanent and would continue to be upheld under the master plan.
- Access permits provide access across state property to private ownership within the forest boundary. Land use agreements provide for a variety of uses on state forest property, such as snowmobile trails and other recreational facilities open to the public.
- The Wisconsin Department of Natural Resources has a long history of cooperation in managing and maintaining public recreational and community facilities and access.

The Flambeau River State Forest supports land use agreements with public and private partners that provide public benefits. Land use agreements can be used to facilitate agreements with partners to provide services that meet the goals and objectives of the forest plan. Existing and future land use agreements will be evaluated on an individual basis and reviewed periodically. New Land Use agreements will follow Department standards for review and approval.

Existing easements, land use and access permits will be reviewed periodically for compliance. The Department may grant new agreements, permits or easements where they do not conflict with the master plan's goals and objectives. All such requests will be evaluated on an individual basis, and follow Department standards for review approval.

#### **FUTURE BOUNDARY ADJUSTMENT PROCESS**

From time to time adjustments in the forest boundary are needed. In some cases parcels of land are removed from the

boundary to allow alternative, necessary public uses by local governments. In other cases it may be desirable to add small parcels adjacent to the Forest so they can be purchased for resource protection or to meet expanding recreational needs. Property boundary changes of 40 acres or more require approval by the Natural Resources Board. Wisconsin Administrative Code Ch. NR 44 provides a plan amendment process that may be used to make adjustments in the forest boundary.





## ROAD MANAGEMENT

Roads, skid trails and landings are all part of the forest transportation system. Roads connect the forest land to existing public roads. They provide access for such activities as managing timber, improving fish and wildlife habitat, fighting fires, and recreation. Access across and within the Flambeau River State Forest is on a variety of road types, including State and County Highways, Town roads and State Forest Roads (Map 2.26, Appendix). Roads are maintained by the respective unit of Government. There are approximately 10 miles of State Highway, (State Highway 70), 20 miles of County Highway (M, W and EE) and 47 miles of town roads. There are approximately 60 miles of State Forest roads open for public vehicles and maintained at a level appropriate for a standard vehicle. State Forest Roads are considered State Highways by law. There are additional permanent and temporary State Forest roads closed to public vehicles and used for management purposes. These roads vary in development and maintenance standards including a lightly to primitive level of development. These roads also provide foot access for hunters and hikers. The State Forest is responsible for the maintenance of all State Forest roads with more attention given to roads open for public vehicles.

### STATE FOREST ROAD CLASSIFICATION

There are several types of road classifications outlined in NR 44.07(3). The classifications reflect a range of development and maintenance standards. Road classifications include primitive, lightly-developed, moderately developed, and fully developed.

### COUNTY AND TOWN ROADS

County and town roads within the state forest boundary will continue to be managed by their respective jurisdictions and are outside the scope of the Flambeau River State Forest Master Plan.

A moderately developed road is defined as a permanent seasonal road or a permanent all-season road which typically is 2-lane, but may be one-lane, have a maximum sustained cleared width normally not exceeding 45 feet for 2-lane and 30 feet for one-lane, a well-graded roadbed and may have moderate cuts and fills and shallow ditching, has a surface of aggregate, asphalt or native material, and a maximum design speed of 25 mph.

### ROAD MANAGEMENT OBJECTIVES

- Provide a network of roads on the FRSF that meet land management and recreation objectives, while minimizing environmental impacts.
- Maintain state forest roads to the designated road standards and in a sustainable condition.
- Protect scenic values along road corridors in balance with management area objectives.
- Manage the spread of invasive plant species along road corridors.

### GENERAL ROAD MANAGEMENT PRESCRIPTIONS

- The Department managed roadways within the Flambeau River State Forest will be maintained in part according to the following requirements from the Best Management Practices for water quality:
  - Clear debris from culverts, ditches, dips and other drainage structures to decrease clogging that can lead to washouts.
  - Keep traffic to a minimum during wet periods and spring breakup to reduce maintenance needs.
  - Shape road surfaces periodically to maintain proper surface drainage.
  - Restore roads used in timber harvest operations to non-erosive conditions after harvesting is completed.
  - Inspect permanent roads throughout the year and develop a maintenance schedule.
- Monitor and manage the spread of invasive plant species along roads using Wisconsin's Forestry Best Management Practices for Invasive Species. Control invasive species uses appropriate management techniques including but not limited to, herbicides, burning, cutting and mowing.
- Maintain visibility and clearance along roads that is adequate for the road classification and use.
- Annually review the roads open for public use and make adjustments as needed to enhance access for recreational users as allowed by the management area's land use classification.
- Inspect and maintain designated lightly developed roads every three years to provide a system of roads for hunter walkers. Review, on an annual basis, the roads designated in this classification and make changes based on opportunities to expand or enhance the road network for recreational access as allowed by the area's land management classification.
- All non-state forest road right-of-ways (66 feet) will continue to be controlled and maintained by their current operator (state, county, or town).

### ACCESS POLICY FOR PUBLIC VEHICLES

All state forest roads are open to public access with street licensed vehicles unless the road is bermed, gated, or signed

## ROAD MANAGEMENT

TABLE 2.39 STATE FOREST ROAD CLASSIFICATIONS ON THE FRSF OPEN TO PUBLIC VEHICLES

Road Name	Approximate Mileage	Approximate Mileage
Prettie Road	1	Moderately Developed
County Line Road	0.5	Moderately Developed
Dix Dox Road Complex	3.5	Moderately Developed
Log Creek Road	0.5	Moderately Developed
Payne Farm Road	2	Moderately Developed
Payne Farm Road Spur Complex (3)	1.8	Moderately Developed
Tapaske Road Complex	2.8	Moderately Developed
West Lane North Access Road Spurs (4)	3	Moderately Developed
Camp 41 Road	0.5	Moderately Developed
West Lane South Access Road Spurs (5)	2.5	Moderately Developed
Hervas Road	3.5	Moderately Developed
Hervas Road Spur Complex (7)	3.5	Moderately Developed
Hervas Landing Road	0.5	Moderately Developed
Skinner Creek Road	3.5	Moderately Developed
Sobieski Road Complex	0.5	Moderately Developed
Power Line Road	0.5	Moderately Developed
Bear Creek Road	5.5	Moderately Developed
Connors Creek road	0.5	Moderately Developed
Bear Creek Camp Road	0.5	Moderately Developed
Hines Grade Road	2.5	Moderately Developed
Carlson Road	1	Moderately Developed
Price Creek Road	7	Moderately Developed
Price Creek Road Spur Complex (7)	1.5	Moderately Developed
Little Connors Creek Road	0.2	Moderately Developed
Nedli Road	4	Moderately Developed
Connors Lake Campground / Day Use Road	1	Moderately Developed
Highway W East Access Complex (4)	0.75	Moderately Developed
Tower Hill Road	2.5	Moderately Developed
Bass Lake Road	1.25	Moderately Developed
Lake of the Pines Road	1	Moderately Developed
Pelican Lake Road	0.18	Moderately Developed
North Fork Road	0.2	Moderately Developed
<b>Total Mileage</b>	<b>60</b>	

**ROAD MANAGEMENT**

closed. State forest roads are closed to ATVs unless designated for such use. The State Forest Superintendent may close a road to public use if it becomes degraded, unsafe, or for law enforcement reasons.

State forests regularly open and close forest roads primarily to conduct forest management. Roads open for management purposes are generally open to the public during the management period (one to two years) and a short time thereafter to allow access for firewood collection or other uses. Following this period they are closed with gates or berms.

The state forest will not maintain roads for the expressed benefit of private individuals or residents, but may, at the discretion of the State Forest Superintendent, consider land use agreements.

**AESTHETIC MANAGEMENT FOR ROADWAY CORRIDORS**

Forest management techniques can be adjusted along roadways on the forest to ensure the long-term maintenance of scenic conditions is proportionate to the road's level of public use. The DNR Silviculture and Forest Aesthetics Handbook distinguishes three separate road types including Class A, Class B, and Class C roads.

*Class A Roads* are travel routes with heavy to medium use or roads where the use is for the specific purpose of enjoying scenery. These areas should be developed and maintained to the greatest scenic potential for public enjoyment. All state highways and county roads located within the state forest are classified as Class A roads, approximately 20 miles. All management activities will follow guidelines according to the DNR Silviculture and Forest Aesthetics Handbook

*Class B Roads* are travel routes that serve a variety of uses where public traffic use is generally light to medium. Scenic attractiveness is of equal importance and is in balance with other land management objectives.

*Class C Roads* are primarily used for management access and public use does not occur, is infrequent, or is primarily for activities such as hunting, fishing, or berry picking. Aesthetics are considered in the management along these roadways; however, they are secondary to the prescribed land management activities for the area.



**TABLE 2.40 STATE FOREST ROAD CLASSIFICATIONS CLOSED TO PUBLIC VEHICLES ON THE FLAMBEAU RIVER STATE FOREST**

Road Type	Approximate Mileage	NR44 Designation
Lightly Developed Roads (Hunter Walker Access)	65- 85	Lightly to Primitive Developed
Primitive Forest Roads	300-500	Primitive Developed



## NON-METALLIC MINING POLICY

The Department may use gravel, sand, fill dirt, or other fill material from Department-owned lands for Department use. Under certain circumstances other government bodies or agencies may also have access to these materials. Section 23.20 of the Wisconsin Statutes states, “the department may permit any town, county, or state agency to obtain gravel, sand, fill dirt or other fill material needed for road purposes from any department-owned gravel pit or similar facility if this material is unavailable from private vendors within a reasonable distance of the worksite. The department shall charge a fee for this material commensurate with the fee charged by private vendors.”

The Flambeau River State Forest has two licensed gravel pit sites on the southern end of the property, one near Price Creek and one near Cedar Rapids. Any non-metallic mining in the Flambeau River State Forest, whether by the Department or as authorized under s. 23.20, Stats., is regulated under the reclamation requirements of NR 135, Wis. Adm. Code, - except for sites that do not exceed one acre in total for the life of the mining operation or are otherwise exempt under s. NR 135.02(3), Wis. Adm. Code. Site reclamation under NR 135 is administered by the county — or in some cases municipal — regulatory authority.

NR 135 requires mining sites to be reclaimed according to a reclamation plan to meet uniform state reclamation standards. Most Department of Transportation (DOT) projects are exempt from NR 135 but subject to WisDOT’s own mining site restoration requirements as provided in s. NR 135.02(3)(j), Wis. Adm. Code. In general, DOT and its contractors would be discouraged from non-metallic mining on the state forest property. The use of state-owned land by the state and municipalities for gravel pits and sand will continue on a case-by-case basis. Nonmetallic mining at new sites will not be permitted where a Geological Feature of Importance has been identified.

### IMPORTANT GEOLOGIC FEATURES

The Flambeau River State Forest’s geology is comprised of Precambrian bedrock covered by 50 to 100 feet of glacial till. Significant bedrock exposures and outcrops are associated with the major river corridors and larger rapids along the South Fork of the Flambeau River. The FRSF lies within the terminal moraine of the Chippewa Lobe of the Wisconsin glaciation. Ground moraine of depositional materials predominates, with areas of pitted outwash also present. There are extensive areas of undulating outwash plain with smaller inclusions of pitted outwash. Outwash deposits are somewhat narrow and are associated with post-glacial meltwater drainage channels. Minor landform features associated with these meltwater deposits include eskers, kames, outwash river terraces, narrow stream-cut ravines, and steep cut banks. A uniform silt loam surface textures is often present on these landforms.

Because many of the unique geological features on the forest contain sand and gravel deposits, they would be subject to extraction and other disturbances if not protected on public land. The Department recognizes the importance of setting aside and preserving representative examples of these non-renewable geological features to serve as a base for geological and ecological educational programs and as a baseline against which to compare sites that become disturbed in various ways.

## CULTURAL RESOURCES MANAGEMENT



### CULTURAL RESOURCES MANAGEMENT

The cultural resources management plan for the Flambeau River State Forest recognizes that cultural resources, such as archaeological sites, historic structures, and tribal heritage areas, are significant resources and provide important clues to the historic use of state forest lands.

#### PRESHISTORIC, HISTORIC AND OTHER CULTURAL RESOURCES

Twelve archaeological sites have been identified and reported on the primary unit of the FRSF, representing prehistoric and historic Indian as well as historic EuroAmerican occupations. The prehistoric campsites and villages date as far back as the Late PaleoIndian period (ca. 8000-4500 BC), with other sites evidencing Archaic (ca. 5000-500 BC), Woodland (ca. 500 BC-1650 AD) and, still later, Historic Indian (ca. 1650-recent), and Historic EuroAmerican (ca. 1800-WPA/CCC era) occupations, which variously include campsites and villages, garden beds, trading posts, and logging camps. Identified burial areas are associated with prehistoric Indian peoples (including the state's northernmost effigy mound, a bird effigy), historic Indian communities, and historic EuroAmerican sites. One of these sites, the Deadman Slough site (site no.: PR-0046), is listed on the National Register of Historic Places.

Additionally, three historic structures are reported for the FRSF, including the Flambeau River State Forest Office building, built in 1951.

There are no recorded historical or archaeological sites or structures on the Upper Flambeau River unit of the forest.

There have been no intensive surveys to identify cultural resources; therefore, many FRSF archaeological sites (and likely some historic structures as well) remain undiscovered and unreported. Archaeological sites would be expected to occur along the elevated margins of the river's waterways, especially at the confluence of rivers, and the inlets and outlets of rivers on lakes.

#### TRIBAL GATHERING

The FRSF lies within the ceded territory of the Chippewa tribes (Appendix D). The Lac Court Oreilles Band is the closest tribe to the FRSF, and to date, is not a major user of the forest or its resources.

The gathering of miscellaneous forest products, including bark, boughs, firewood, lodge poles, sap, etc. by Chippewa treaty rights participants is regulated by subch. IV, ch. NR 13, Wis. Adm. Code.

The Department may not deny a request to gather miscellaneous forest products on a Department property unless the gathering is inconsistent with the management plan for the property, or gathering will conflict with the pre-existing rights of a permittee, or other person, who has approval to conduct an activity on the property, is inconsistent with conservation, public healthy or safety.

For more information on the Chippewa treaty rights, see Appendix D.

#### CULTURAL RESOURCES MANAGEMENT GOAL

The goal of the Flambeau River State Forest is to identify and manage cultural resources to provide future generations an opportunity to appreciate and experience the forest's diversity of human history, and the delicate ecological relationship between people and the land.

#### CULTURAL RESOURCES MANAGEMENT OBJECTIVES

- The protection and preservation of areas, objects, and records of cultural importance will be coordinated with the Department Archaeologist in consultation with interested tribal communities, institutions, and/or other interested parties. This consultation will include (but is not necessarily limited to) notification to interested parties of activities and potential impacts in areas of known concerns. Opportunities for involvement in research of sites of known cultural importance will be made.
- Protection of cultural resources will be coordinated with the Wisconsin Historical Society (WHS) as required by applicable state and federal historic preservation laws and regulations.
- Protection of burial sites will follow Section 157.70 of Wisconsin Statutes, and the Department's "Burials, Earthworks, and Mounds Preservation Policy & Plan" (WDNR 2008).

**CULTURAL RESOURCES MANAGEMENT**

- The Flambeau River State Forest Superintendent will consult with Tribal and GLIFWC (Great Lakes Indian Fish and Wildlife Commission) representatives regarding state forest management issues on a government-to-government basis as required under Wisconsin Administrative Code NR 44.04 (7)(c).
- As needed, approved future facility development sites (parking lots, buildings, etc.) will be inspected prior to construction to locate and evaluate any evidence of significant archaeological or historic material in compliance with Section 44.40 of the Wisconsin State Statutes, and Manual Code 1810.1.
- All accommodations necessary will be made to avoid adverse impacts on cultural sites that may be affected by management activities.
- Cultural resources may be developed for scientific and educational purposes to the extent that the integrity of the resource is maintained.



## GENERAL LAND AND FOREST MANAGEMENT POLICIES AND PROVISIONS

The following section describes general policies and provisions that are applied to all lands of the Flambeau River State Forest that are under state ownership.

### FOREST INVENTORY AND RECONNAISSANCE

The state forest uses a forest inventory system to gather and record information on its land. The database created from the inventory captures the physical description of these areas (dominant forest cover type, soils, ecological attributes, stand origin, guidelines, restrictions and goals). Reports are generated to summarize forest stands that are scheduled for management review. The acreage listed for review is considered the forest's "sustainable harvest" meaning those lands are due for a decision regarding management. Some stands inventoried, such as passive management zones contained in some native community management areas, are excluded from the management schedule. Forestry staff conduct field exams to verify whether stands scheduled for management are ready for the prescription. If stands are not yet ready for management, the reconnaissance database is updated and rescheduled for future review. Stands rescheduled for future review are still considered accomplishments toward the forest's annual sustainable harvest acreage. For stands that are ready for management, forestry staff consult with other Department programs such as endangered resources, fisheries, and wildlife to ensure an integrated resource approach prior to establishing the proposed practice. When establishing the practice, silvicultural guidelines and BMPs for water quality and invasive species are followed. After a management practice is completed, the forest reconnaissance database is updated. In the future, the state forest will be using a Continuous Forest Inventory (CFI) system in conjunction with the reconnaissance system. This system will track growth, mortality, and management of forested lands and allow for more concise management of state forest lands. Using the Continuous Forest Inventory system will not change the objectives stated in the master plan.

### BEST MANAGEMENT PRACTICES FOR WATER QUALITY

All management activities within the state forest will follow, as a minimum standard, the guidelines in Wisconsin's Forestry Best Management Practices for Water Quality: Field Manual for Loggers, Landowners and Land Managers (DNR PUB-FR-093-03).

Ephemeral ponds and permanent small ponds provide important breeding sites for amphibians and waterfowl. Forested ephemeral ponds are a unique natural community, providing wetland habitat in the spring and early summer, and typically drying up by mid to late summer. They flourish with productivity annually and provide critical breeding habitat for certain invertebrates, as well as many amphibians such as wood frogs and salamanders. Ephemeral ponds are widely distributed across much of the FRSF and can be found in high densities in some areas. As ephemeral ponds are abundant on the FRSF compared to other state properties, their protection is particularly important. Trees adjacent to ephemeral ponds provide a variety of benefits such as maintaining cool water temperatures, preventing premature drying, and adding to the local food web, so these trees will be retained whenever possible. Ephemeral ponds and permanent small ponds will be protected through vegetative management adapted to minimize impacts and by following Best Management Practices for Water Quality, and the Department's Marking Guidelines and Biomass Harvesting Guidelines.

### FOREST PEST CONTROL

As stated in Wisconsin Statute 26.30, it is the public policy of the state to control forest pests threatening forests of the state. Within the Flambeau River State Forest, any significant forest pest event will be evaluated with consideration given to the property management goals and the potential threat of the pest to other landowners. Infestations of the non-native gypsy moth caterpillar will be managed according to the forest's Gypsy Moth Management Plan. Responses to significant infestations from other forest pests, including but not limited to the Emerald Ash Borer, may include timber salvage or pesticide treatments. Any response to a significant pest outbreak will be evaluated by an interdisciplinary team of scientists and communicated through press releases and notices to interested parties.

### INVASIVE SPECIES CONTROL

Invasive non-native species have become recognized in recent years as a major threat to the integrity of the state forests.



**GENERAL LAND AND FOREST MANAGEMENT POLICIES AND PROVISIONS**

These species have the ability to invade natural systems and proliferate, often dominating a community to the detriment and sometimes the exclusion of native species. Invasive species can alter natural ecological processes by reducing the interactions of many species to the interaction of only a few species. The FRSF has an integrated invasive species plan for the property. This document out-lines various factors in managing for invasive species such as early detection and inventory, mapping, control, monitoring and research and education. The plan is used as a guide to managing for the invasives on the state forest. In addition, Best Management Practices (BMPs) for Invasive Species will be incorporated into management practices on the property.

If detected, invasive species may be controlled using appropriate and effective methods, including but not limited to the use of herbicides, cutting, or hand removal. Control methods may be restricted in certain sensitive management areas. Before initiating control measures, the management prescriptions for the area being treated will be referenced.

**CHEMICAL USE**

Approved herbicides and pesticides may be used for various purposes on the forest, such as to control invasive plants, to control plant competition in forest regeneration areas, or for insect control except as restricted in the management prescriptions in this master plan. All Department procedures and herbicide and pesticide label requirements will be followed.

**ENDANGERED, THREATENED AND SPECIES OF SPECIAL CONCERN PROTECTION**

The Flambeau River State Forest supports several Natural Heritage Inventory (NHI) listed threatened, endangered, and special concern species, both plants and animals. These include 10 bird species, two dragonflies, two mammals, two reptiles, six plants, and four mussels. Of these species, four are endangered, five are threatened, and the remaining are species of special concern.

Several of the native community management areas are designed to protect rare species habitats. In addition, all management prescriptions in the master plan will consider the needs of these species and the potential impacts to the species and their habitat. Management actions being planned on the state forest are checked against an up-to-date database of listed species to assure that no Department actions result in the taking of any known endangered or threatened resource. Property managers routinely work with department biologists and ecologists to protect rare species where they are known to occur. Please refer to Appendix B for a listing of the endangered, threatened, and Species of Special Concern found on this property.

**FIRE SUPPRESSION**

As stated in Wisconsin Statutes 26.11, "The Department is vested with power, authority and jurisdiction in all matters relating to the prevention, detection and suppression of forest fires outside the limits of incorporated villages and cities in the state except as provided in sub (2), and to do all things necessary in the exercise of such power, authority and jurisdiction." Forest fire suppression actions within the state forest will consider the property management goals and the threats of the fire to life and property. Appropriate techniques will be used in each event to provide effective fire suppression while minimizing resource damage. Selected areas of the state forest are periodically used for fire equipment training purposes.

**FOREST CERTIFICATION**

In 2004, Wisconsin State Forests gained dual Forest Certification from the Forest Stewardship Council (FSC) and the Sustainable Forestry Initiative (SFI). Independent, third-party certification means management of Wisconsin's forests meets strict standards for ecological, social, and economic sustainability. In 2009, State Forests were re-certified under FSC and SFI. The State Forest program will continue to participate in forest certification. The status of certification corrective actions will be shared annually.

**RESEARCH**

The Flambeau River State Forest provides an operational and strategic location for experimental trials and research, especially with regard to tree improvement, genetics, forest health and flowages. The research conducted by Department managers, scientists, and educational partners can be beneficial for the forest, the Department and the general public. Scientific research that is compatible with the ecological and aesthetic attributes of the site is generally supported. The State Forest Superintendent has the authority to approve or deny requests for research projects on the Flambeau River State Forest. All research activities will be carried out in locations and using methods that are consistent with the management classifications and management objectives in this property plan.

**AUTHORIZED RESPONSE TO CATASTROPHIC EVENTS**

Wildfires, timber diseases, and insect infestations shall be controlled to the degree appropriate to protect the values of each management area. Necessary emergency actions will be taken to protect public health and safety. Appropriate management responses to catastrophic events are determined on a case-by-case basis, and action will be taken as appropriate. At a minimum, salvage of trees damaged by wind, fire, ice, disease, or insects may occur if consistent with the objectives of the management area or as prescribed in the plan for the management area.



## GENERAL ADMINISTRATION POLICIES AND PROVISIONS

The following section describes general administration policies and provisions that are applied to all lands of the Flambeau River State Forest that are under state ownership.

### FACILITY MANAGEMENT

The State Forest Superintendent may close and relocate campsites, renovate facilities, relocate trail segments and post speed limits on trails as deemed necessary.

The State Forest Superintendent may maintain and construct storage buildings, employee housing, and/or other similar facilities to support the management of the state forest, as is authorized by normal Department facility approval processes. The structure's location and design must be consistent with the land classification requirements in NR 44 and the management objectives for the area in which it is located.

### FACILITY DEVELOPMENT STANDARDS

All facilities, roads, and structures providing either public recreation or supporting public recreation activities or other administrative services will be designed and constructed in compliance with state building codes and DNR design standards including NR 44. All new facilities and buildings, whether for use by the public or by employees, will comply with the Americans with Disabilities Act (ADA).

### DISABLED ACCESSIBILITY

All new construction and renovation of facilities will follow guidelines set forth within the Americans with Disabilities Act (ADA) and will also be done in a manner consistent with NR 44 standards of the land use classification of the site where the development is located. Across the Flambeau River State Forest, the State Forest Superintendent has the authority to make reasonable accommodations for people with disabilities, consistent with the requirements of the area's land use classification.

### INSPECTION OF DESIGNATED USE AREAS

All designated use areas must be inspected semi-annually (Wis. Statutes s. 23.115). Vegetation inspections in designated use areas must be performed semi-annually with one of the inspections performed by a person trained in the identification of hazard trees. Monitoring will pay particular attention to forest infestations that pose a serious threat to forest resources such

as: oak wilt, pine bark beetles, gypsy moth, forest tent caterpillar, two-lined chestnut borer, emerald ash borer, and invasive plants. Control measures will be performed as needed.

### PROPERTY WIDE MANAGEMENT OF DAMS AND FLOWAGES

The Flambeau River State Forest contains one dam at Sobieski Flowage. Maintenance, repair, and/or removal of dams will be evaluated and conducted on a case-by-case basis, based on cost-effectiveness, property needs, anticipated benefits, and wildlife habitat impacts. Consultation with the Dam Safety Engineer will occur prior to making any major changes to the dam system.

Several dams are located along the Flambeau River but are not owned or operated by the Flambeau River State Forest. Xcel Energy and Flambeau Hydro, Inc. operate the dams and control the water levels of the Flambeau River. The operation of these dams is outside the scope of this master plan.

### CORRECTION CREW ACTIVITIES

The Department of Corrections operates a minimum security facility on the Flambeau River State Forest. When working on the state forest, correction crews perform duties under the guidance of a Corrections Supervisor with all work assignments pre-approved by the State Forest Superintendent. A Memorandum of Understanding between the two agencies will be maintained to describe appropriate work projects on the state forest.

### REFUSE MANAGEMENT

Refuse is collected by a private contractor from designated sites at campgrounds and other primary use facilities. Recyclables are also collected by the property. Visitors are required to carry out any refuse they bring when no designated refuse or recycling receptacles are available. This carry-in, carry-out policy applies to most primitive campsites, trails, and boat landings. Burying of refuse is not allowed anywhere on the property.

### PUBLIC HEALTH AND SAFETY

All facilities will comply with federal, state, and local health and sanitation codes; such as well testing, campground licensing and wastewater treatment. The State Forest Superintendent has the authority to close campsites or campgrounds, trails, and other facilities on the forest when necessary due to health, safety, or environmental damage concerns.

Within designated public use areas such as campgrounds, picnic areas, parking lots, and high use trail systems, trees or other natural elements that are deemed public hazards will be removed. Safety inspections are done at least twice per year.

## GENERAL ADMINISTRATION POLICIES AND PROVISIONS

### EMERGENCY ACTION PLAN

The property maintains on file an emergency action plan that describes staff response and coordination with other agencies to natural disasters as they affect public safety and facilities. It is reviewed annually.

### MONITORING THE IMPLEMENTATION OF THE MASTER PLAN

The implementation of this master plan will be monitored on an annual basis to determine progress made in meeting the plan's management objectives. Master plans set specific goals and objectives describing a future desired state. An on-going monitoring program is essential to track whether the plan is achieving the desired results and if funding and staff resources are being allocated most effectively. A well-constructed monitoring program also provides essential data for adaptive management. That is, checking results and making management corrections when needed so as to stay on the best path to achieve the desired result and minimize adverse or undesirable impacts. On a broader scale, some master plan related monitoring data will also contribute to the Department's state-wide and regional ecosystem and environmental monitoring programs.

Monitoring and evaluation can be used to improve management results or efficiency, build and maintain credibility with public, validate past decisions and build better decisions in the future, and build certainty where uncertainty exists regarding

the impact of management actions or uses. A solid monitoring program will allow the plan to be kept up to date through adaptive management and substantially reduce the need for a major plan revision process every 15 years.

Monitoring reports will be available on the Department's webpage, at the property, and during annual public meetings.

### YEARLY MANAGEMENT ASSESSMENT

The property manager will coordinate, schedule, and lead a yearly meeting to document and assess progress on the management actions accomplished during the previous year and plan management activities for the upcoming year. A file is kept with these yearly assessments in preparation for implementation of the Manual Code 9314.1(C), which calls for formal plans to determine progress on implementation and whether the plan is accomplishing intended results.

### FUNDING CONSTRAINTS

Many of the initiatives proposed in the master plan are dependent upon additional funding and staffing. Operational funding for state forests is established bi-annually by the state legislature. Development projects follow an administrative funding and approval process outside of the master plan. Therefore, a number of legislative and administrative processes outside of the master plan determine the rate at which this master plan can be implemented.





## PUBLIC COMMUNICATIONS PLAN

The public and other governmental agencies will have the opportunity for on-going involvement in the implementation of this master plan. This communication plan describes how the public will be notified about activities and issues on the Flambeau River State Forest.

Annually the State Forest Superintendent will write a report that summarizes the following:

- For the past year, the primary management and development activities that were completed and other significant issues that were addressed.
- For the coming year, outline any proposed management and development activities and any changing management actions or approaches.

The annual report may also include other information of interest to the public on various topics related to management and use of the Forest. Some of the additional types of information that may be included are: the status of forest insect or disease problems, fires or storm damage, new information on endangered or threatened species, recreational management problems or new opportunities, and recreational use changes or trends.

The State Forest Superintendent will maintain a list of persons, groups, and governments interested in receiving information about on-going management of the forest. When requested, the State Forest Superintendent will provide the information via U.S. mail, e-mail or direct them to the Department's internet web site.

Annually, the Flambeau River State Forest will meet with stakeholders to update interested parties on state forest proposed activities.

In the event the Department considers a change to the master plan through a plan variance or amendment, the public will be advised of the proposal and informed of the review and comment process. As appropriate, a public news release will be prepared and stakeholders notified of the comment process.

### TRIBAL CONSULTATION

The Flambeau River State Forest Superintendent will consult at least annually with the Lac Court Oreilles Band as well as

the Great Lakes Indian Fish and Wildlife Commission and Voigt Intertribal task Force on state forest management issues related to Treaty rights. Additional consultation meetings may be scheduled should issues warrant immediate attention.

### CONTACT PERSON

The Flambeau River State Forest Superintendent should be contacted regarding the master plan or other state forest related topics. At the time of this publication, the Flambeau River State Forest Superintendent contact information is:

#### Jim Halvorson

#### Flambeau River State Forest Superintendent

Wisconsin Department of Natural Resources  
W1613 County Road W  
Winter, WI 54896  
715-332-5271  
james.halvorson@wisconsin.gov



**PUBLIC COMMUNICATIONS PLAN**





## BACKGROUND & AFFECTED ENVIRONMENT

### SIGNIFICANCE OF THE RPA IN THE MASTER PLANNING PROCESS

The purpose of the Regional and Property Analysis (RPA) is to provide baseline information for developing the property's Vision Statement, Goals, and informing the Alternatives phase of the master planning process according to NR 44. The RPA has four components: Introduction, Regional Assessment, Property Assessment, and Findings and Conclusions.

#### *Regional Assessment*

Provides an overview of the current socio-economic, cultural, ecological, and recreational environment in the region and how they affect the property and its use.

#### *Property Assessment*

Provides an overview of the existing conditions on the property, including: natural resources, recreational use and facilities, and adjacent land use.

#### *Findings and Conclusions*

This section uses the information from the region and property to draw conclusions about the property's niche and serves as the basis for the draft Vision Statement, Property Goals, and Alternatives.

Combined, these sections consider the economic, ecological, and social conditions, opportunities, and constraints associated with the property on a local and regional scale. State Forest master planning goes beyond forest management, spanning a wide range of issues and uses. Examining the role the FRFSF plays in north central Wisconsin will contribute to sound, long-term forest planning.

### DESCRIPTION OF THE PROPERTY AND REGION

Located in north central Wisconsin in the Village of Winter, the Flambeau River State Forest is located in Sawyer, Price, Rusk, Ashland, and Iron Counties. With just over 90,000 acres, the forest is one of the largest pieces of public land in the region. It is a popular destination for canoeists and kayakers who come to enjoy the rapids and the remote forested nature of

the Flambeau River and a traditional hunting area for large and small game. With a vast regional ATV trail network, the forest and surrounding region have also become a destination for ATV riders. And from the late 1800s through the present, the area has produced a variety of important forest products for local and statewide industries.

The forest consists of approximately 90,000 acres in Sawyer, Rusk, and Price Counties with an additional 1,000 acres along the shores of the Flambeau River in Ashland and Iron Counties. Other large public lands in the area include the Chequamegon-Nicolet National Forest and the county forests of Sawyer, Price, and Rusk Counties. The large amount of public land and outstanding natural amenity base in the region provides some of the largest intact forests in the state and provides for a broad range of recreational and ecological opportunities.

### PAST MANAGEMENT AND USE

The Flambeau River State Forest was established in 1930. Beginning with 3,600 acres in public ownership, the forest has grown to include over 90,000 acres. In 1904 Wisconsin's first State Forester felt, "the main reason for establishing forest reserves in Wisconsin was to preserve the stream flow in the important rivers... where the greatest rivers of the state rise." The Flambeau River is one of these remarkable rivers; the North and South Forks meet within the Forest to provide over 75 miles of nearly uninterrupted natural beauty.

The desire to maintain the Flambeau River corridor was codified in 1955 by the Department in a report on the "public usefulness and potentialities" of state forests (Wisconsin Conservation Department 1955). Two of the major conclusions of the report relate to the lack of extensive wilderness remaining in the state and the establishment of a "river wilderness zone." In effect, the wilderness zone was created to "preserve, restore, and maintain the primitive character of the Flambeau River...in a manner... [which] will leave it unimpaired for future generations."

For centuries, the Flambeau River was an important resource for native people. “Flambeau” is translated from French as “torch river.” The name is derived from 17th century accounts of European settlers who described Native Americans using torches to illuminate the base of the waterfalls where they speared muskellunge, sturgeon, and other fish. The waterfalls were earlier known as Muskellunge Falls, and they are presently inundated by Lower Park Falls Flowage within the City of Park Falls. In the 19th and early 20th centuries, the river was used by loggers and timber companies for floating logs to area mills and transportation hubs.

As with most of the northern state forests, the FRSF developed from land cutover by lumber companies during the late 19th and early 20th centuries. The ‘cutover’ period left a mixed cultural and ecological legacy. Forest management activities began in earnest in the mid-1940’s with tree harvesting and planting with the long-term goal of developing a regulated harvest schedule. Updating forest reconnaissance for forest management purposes became a priority in the 1970’s and continues to the present.

Active forest management and natural regeneration coupled with suitable ecological characteristics has allowed the northern forests, including the Flambeau, to recover, although forest composition, structure, and patch size differ significantly from pre-settlement conditions. The most notable difference between current and pre-settlement cover types is the reduction of hemlock and yellow birch as late successional dominants and the increase of early successional species such as aspen and birch. Many factors contribute to the decline of hemlock and yellow birch, including poor regeneration due to heavy deer browse, and in this region, windthrow.

Forest composition is significantly impacted by windthrow. These large-scale disturbance events not only shape forest composition, they have enormous ecological and forest management implications. In the past 30 years, there have been approximately 12 large windthrow events on the Forest. An event in 1977 leveled most of a large stand of old-growth hemlock and affected approximately 1/3 of the total FRSF land area.

The Flambeau River has long been recognized as one of the best canoe streams in the Lake States. A broad, fast flowing river with many rapids and rips, and wild wooded shoreline, the river is the defining feature of the forest. Recreation development on the Forest has been guided by the Department’s policy to “preserve, restore, and maintain the primitive...nature” of the river since 1955. The Flambeau River still provides some of the longest and most beautiful stretches of river for paddling and boating in the state. The river and forests

have been a recreational draw for hunters, fishers, paddlers, and outdoor enthusiasts for decades.

## PURPOSE OF STATE FORESTS

State Forests are defined by Wisconsin Statutes 28.04 to assure sustainably managed forests that provide ecological, social, and economic benefits for present and future generations.

## PROPERTY SIDEBOARDS

State Forests are managed in accordance with Wisconsin’s 28.04 and are an important part of the Department’s broader mission to provide leadership in “all matters pertaining to forestry within the jurisdiction of the state...and advance the cause of forestry within the state” (§28.01). In order to define this mission, the purposes and benefits of state forests are outlined in the following language of 28.04 (2):

- (a) The department shall manage the state forests to benefit the present and future generations of residents of this state, recognizing that the state forests contribute to local and statewide economies and to a healthy natural environment. The department shall assure the practice of sustainable forestry and use it to assure that state forests can provide a full range of benefits for present and future generations. The department shall also assure that the management of state forests is consistent with the ecological capability of the state forest land and with the long-term maintenance of sustainable forest communities and ecosystems. These benefits include soil protection, public hunting, protection of water quality, production of recurring forest products, outdoor recreation, native biological diversity, aquatic and terrestrial wildlife, and aesthetics. The range of benefits provided by the department in each state forest shall reflect its unique character and position in the regional landscape.
- (b) In managing the state forests, the department shall recognize that not all benefits under par. (a) can or should be provided in every area of a state forest.
- (c) In managing the state forests, the department shall recognize that management may consist of both active and passive techniques.

## FOREST CERTIFICATION

In 2004, Wisconsin state forests were dual certified under Forest Stewardship Council (FSC) and Sustainable Forest Initiative (SFI) standards. All state and most county forests in the FRSF region are certified by FSC and SFI. In addition to ensuring that raw materials are certified sustainable, the process also confirms that certified forests provide a wide array of ecological benefits through management plans that provide protection of rare, threatened, and endangered species and protection of representative examples of ecosystems.

**INTRODUCTION****EXISTING ASSESSMENT REPORTS**

Many sources were used for this analysis. To assess recreational resources, the Wisconsin Statewide Comprehensive Outdoor Recreation Report (2005-2010) was used, particularly the Great Northwest and Northwoods Regional Profiles. The Flambeau River State Forest Biotic Inventory (2008) was used for ecological inventories, along with the Natural Heritage Inventory (WDNR), Wisconsin's Strategy for Wildlife Species

of Greatest Conservation Need (WDNR 2005), Ecological Landscapes of Wisconsin (WDNR 2006), Wisconsin's Biodiversity as a Management Issue (WDNR 1995), and many other sources listed in the bibliography. Analyses reflect the best available data at the time the RPA was written.





## REGIONAL ASSESSMENT

### REGIONAL LANDUSE, OWNERSHIP, PATTERNS, AND TRENDS

The FRSF covers approximately 90,000 acres in five counties (Sawyer, Price, Rusk, Ashland, and Iron). Since nearly all population, economic, and land use information currently available is organized and presented by county, the “region” for this part of the analysis will include all portions of these counties. This region comprises about 9.6% of Wisconsin. This is the socioeconomic area that has the most effect on and is most affected by the State Forest.

#### Population Centers

The population of the five county region has slowly but steadily climbed over the last several decades, from 62,000 in 1970 to 73,000 in 2007. Sawyer County has experienced the largest population growth in the region over this period, climbing from 9,700 to over 17,000 residents in 2007. The other four counties have experienced very slow or negative population growth over the last decade. The region’s population as a whole is projected to remain at this level through the year 2030, substantially below the state average.

The age profile of the region’s population is expected to increase as the “baby boomer” generation ages. Although the overall population in the region is expected to remain relatively constant, the number of deaths is projected to exceed births over the next several decades. This decrease is projected to be offset by a continuation of in-migration of new residents, many of whom are likely to be older residents. Together, these trends will result in a dramatic increase in the 60 and older age cohort, from 25% of the population in 2005 to nearly 40% in 2030.

The region is sparsely populated and largely rural, with most of the growth and housing development occurring in small villages and rural towns, with few urban centers. The FRSF is located near Winter, which has a population of approximately 350. Nearby communities include Phillips and Park Falls to the east, Hayward to the northwest, and Ladysmith to the south. Ladysmith is the largest of these communities with a population of approximately 4,000. Minneapolis/St. Paul, Minnesota, approximately 175 miles to the west and the source of many visitors, is the largest metropolitan area near the FRSF. Other cities relatively near include Eau Claire, Superior, and Wausau.

The number of seasonal homes decreased slightly from 1990 to 2000, while the number of occupied housing units (i.e., used as a permanent residence) modestly increased. This likely is the result of some seasonal residents in the region converting their status to permanent residents. Nonetheless, seasonal homes comprise 31% of the housing units in the region, which is one of the highest rates in Wisconsin. As seen elsewhere in the state, with the increase in the number of retirees living here, household size has declined (see <http://factfinder.census.gov/>).

#### Land-Use Patterns

Land use in the five-county region is dominated by forestry, both on private and public lands. With approximately 75% of the region in forest cover, production of wood products (both pulp and sawtimber) is the primary land use. Given the soils and climate in the area, agriculture comprises only about 15% of the region’s land use. Less than 1% of the land area is in residential, commercial or industrial uses.

The abundant natural amenities of the region, including lakes, forests, and rivers, also attract seasonal residents, tourists, and in-migrating retirees to the region. This in turn has led to a rise throughout the region in housing adjacent to these amenities. Many previously forested areas, for example in the area just south of the FRSF, have been converted to other land uses with the remaining forest cover often highly fragmented.

Road density is relatively low and several large roadless blocks are present in the area (The Nature Conservancy 2002). The FRSF is not located on any of the state’s interstates. It is accessed by U.S. Highway 8 or State Highways 70 and 13, which are major regional transportation corridors. County Highways M and W are the major roads into the Forest. There are approximately 55 miles of township roads on the forest that access remote private residences and recreation sites. Some of these are gravel or unimproved forest roads.

#### Land Ownership

About 40% of the land in the five-county region is publicly owned, the vast majority in National, State, and County Forests. The FRSF is the largest state owned property in this five-county region, the bulk of which is in southeastern Sawyer County. A separate “unit” of the forest, the Upper North Fork Flambeau River Natural Area is approximately 1,000 acres, consisting of a 300 foot wide buffer along 15 miles of the Flambeau River northeast of the city of Park Falls. The total acreage within the FRSF project boundary is approximately 97,000 acres; of which about 92,000 are in state ownership and about 5,000 acres are private in-holdings.

In addition to the FRSF, other large public lands include the Chequamegon-Nicolet National Forest (450,000 acres), county forests (530,000 acres), Kimberly-Clark State Wildlife Area

## REGIONAL ASSESSMENT

(8,700 acres), and other state lands such as state fishery and natural areas.

The other form of large landholding in the region is private industrial forests, which comprise approximately 10% of private ownership. These forests are actively managed and provide pulp and sawtimber to the wood products industry. Historically most of these lands were enrolled in one of the state's forest tax law programs (MFL and FCL), which provided public access for hunting, fishing, hiking, cross-country skiing, and sight seeing in exchange for lower tax rates. Divestment of these land holdings is occurring across the state, with frequent changes in ownership and conversion to other uses. As these lands become unavailable for public use, there is greater pressure on public lands to provide this benefit. In addition, loss of large blocks of industrial forest and conversion to non-forest uses, such as recreational properties, further fragments the landscape.

Not only has the amount of public access to these large private industrial forests been reduced, new landowners often have different forest management goals and planned uses. Industrial forest lands have traditionally been important sources of forest products for local mills (and likewise have been important components of the local economy). The shifts in use and management of these lands have reduced the level of harvest in many areas.

Related to both the increase in seasonal residents and the fragmentation and development of some of the land that used to be devoted to forest production is the rise in property values in the region. The sale price of forest land in the five-county region has increased an average of 10%/year from 2000 to 2007 (jumping from \$845 to \$1432/acre). Similarly, the increase in the number of ownership parcels and residences has increased. The total assessed value of land and improve-

ments in the region 12.6%/year from 2002 to 2007. Sites associated with lakes and large rivers have long been the most valuable land in the region (see [http://www.nass.usda.gov/Statistics\\_by\\_State/Wisconsin/Publications/Land\\_Sales/index.asp](http://www.nass.usda.gov/Statistics_by_State/Wisconsin/Publications/Land_Sales/index.asp) and <http://www.revenue.wi.gov/equ/2007/eqstrat.html>).

### SOCIO-ECONOMIC TRENDS AND CONDITIONS

The region's economy has long been centered around the forest products industry, including both the production of raw material and the manufacturing of various equipment and products (e.g., windows and doors). With the large percentage of public lands here, the tourism industry also plays an important role.

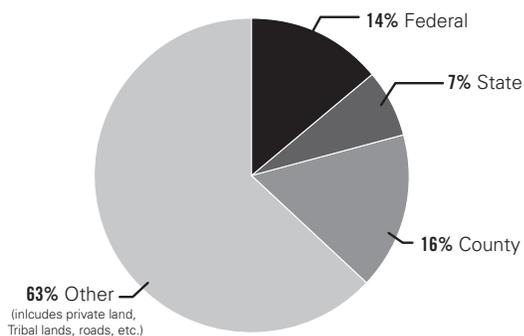
Globalization and the divestment of landholdings by large industrial forests are changing the traditional forest products industry. The industry and its raw material supply/demand flows are extremely complex, often described as a "spider web" of interdependence (Wisconsin's Northern State Forest Assessments 1999). The reduction or expansion of timber supply from an individual property usually does not cause an instant change in price. Over time however, raw material supply will create changes in price.

Timber harvests from state forests are intermingled with timber supplies from other land owners in the region. Changes in the supply of timber (by type or volume) from public lands, particularly County Forests, will have an effect on timber prices and wood processing industries; not simply within this region, but throughout the Lake States (Socioeconomics in Northwest Wisconsin 1999). Figure 3.2 shows timber harvests in Price, Rusk, and Sawyer Counties.

### Forestry and Timber Products

Timber production and wood processing remain important economic contributors to local and regional economies in this area of the state. As seen in Table 3.1 below, the wood based and forest products industries are important components in the three county area surrounding the forest. This is especially true in Sawyer and Rusk Counties, where these sectors provide 20% and 25% respectively, of the jobs in these counties. Tables 3.2 and 3.3 show the acres harvested and cord equivalents from County Forests and the FRFS. Many of the forest products from the Flambeau River State Forest are used locally such as Flambeau Papers and Park Falls Hardwoods in Park Falls, Futurewood and LP in Hayward, and Biewer Sawmill in Prentice. Products are also taken to other parts of Wisconsin or to other states such as Minnesota and Michigan. These mills include SAPPI, New Page, Potlatch, PCA, Kretz Lumber, and Domtar to name a few.

**FIGURE 3.1 LAND OWNERSHIP IN THE FIVE-COUNTY REGION**



Source: WI Department of Administration, Demographic Services and US Census Bureau

**REGIONAL ASSESSMENT**

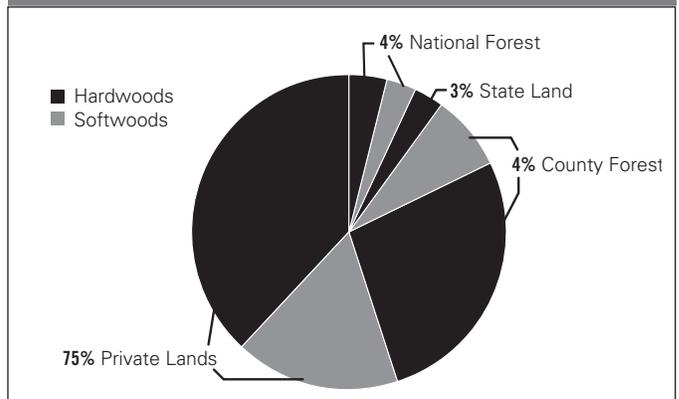
**Labor Force**

The region’s labor force is experiencing similar trends to the state’s overall labor force. Although the unemployment rate is higher in the region than the state average (6.0% vs. 4.7%), employment over the past decade has been generally increasing and unemployment rates have been decreasing. Also consistent with statewide trends, the average age of the labor-force-age population (16 years and older) will climb dramatically with the aging of the “baby boomer” generation. The labor force is also seasonal, with employment typically peaking in late summer and unemployment peaking in early spring.

**Jobs and Wages**

As seen in Table 3.4 below, the largest employment sector is manufacturing. Nearly half of the region’s manufacturing industry is associated with local timber production and wood

**FIGURE 3.2 TIMBER HARVESTS (CUFT/YR) BY OWNERSHIP IN PRICE, RUSK AND SAWYER COUNTIES 2006**



Source: FIA Data, USFS

**TABLE 3.1 RELATIVE IMPORTANCE OF WOOD-BASED SECTORS FOR SAWYER, PRICE, AND RUSK COUNTIES**  
SOURCE: SUMMARY OF COUNTY ECONOMIC SECTORS, 2003 FOR SAWYER, PRICE, AND RUSK COUNTIES.

County and Sector	Industry Output (Millions of dollars)	Employment (Number of jobs)	Employee Compensation (Millions of dollars)
<b>Sawyer</b>			
Wood Based Sectors			
Agriculture, Fishing & Hunting	5.5%	5.0%	10.0
Forest Products & Processing	7.1%	6.9%	6.2
<b>Price</b>			
Wood Based Sectors			
Agriculture, Fishing & Hunting	4.0%	6.4%	5.0
Forest Products & Processing	28.2%	18.9%	23.3
<b>Rusk</b>			
Wood Based Sectors			
Agriculture, Fishing & Hunting	11.2%	11.8%	10.0
Forest Products & Processing	23.0%	24.5%	26.7

Source: Summary of County Economic Sectors, 2003 for Sawyer, Price, and Rusk Counties.

**TABLE 3.2 ACRES HARVESTED ON COUNTY FOREST AND THE FRSF**

Ownership	Approximate Acres	Acres Harvested					5 Year Average
		2003	2004	2005	2006	2007	
Price County Forest	92,000	1,244	1,467	2,010	1,330	2,340	1,678
Rusk County Forest	89,000	3,673	2,439	6,011	1,623	3,211	3,391
Sawyer County Forest	114,800	1,636	1,980	3,008	3,024	2,169	2,363
FRSF	90,000	1,561	993	223	268	1,372	883

Source: Wisconsin County Forests

**REGIONAL ASSESSMENT**

processing. Not only does this segment of the economy provide a significant number of the jobs, with an average wage of \$30,000/yr or more, they tend to be among the higher paying jobs in the region. Equally important, for every job in the forest products industry, an additional two jobs are generated and supported elsewhere within the economy (e.g., accountants, sales representatives, transportation workers, etc.).

Although there are many jobs associated with the leisure and hospitality industry in the region, tourism sensitive sectors are difficult to separate and identify, in part because they also service local demand. These jobs, which include the areas of entertainment, outdoor recreation, accommodations, and food services, tend to be among the lowest paying jobs in the economy and thus contribute only a modest amount to the region’s overall payroll figure. Additionally, these jobs are often part-time and seasonal, contributing to low median wages.

**Income**

All counties in the region have significantly lower per capita personal income (PCPI) than the state (about 75% of state’s PCPI). This is consistent with non-metropolitan counties elsewhere in the state, particularly those with relatively high percentages of workers in service sectors. Not surprisingly, most personal income in the region is derived from the wages

workers receive. Yet, a significant amount of personal income in the region is derived from two other sources – property income (about 20% of total personal income) and transfer receipts (about 25%, most of which are Social Security, Medicare and Medicaid payments). This is expected, given the large number of seasonal houses and older population.

**RECREATION RESOURCES**

The Wisconsin Statewide Comprehensive Outdoor Recreation Plan (SCORP) classifies and measures the preferences and needs of a statewide recreating public and is an invaluable tool in understanding the supply and demand of regional recreation. The plan is updated every five years, informing and shaping recreational planning on state properties. The FRFS is unique from a recreational planning perspective because it straddles two very different SCORP regions, the Great Northwest (Douglas, Bayfield, Ashland, Sawyer, Rusk, Baron, Washburn, Burnett, and Polk counties) and the Northwoods Region (Iron, Vilas, Florence, Forest, Langlade, Lincoln, Oneida, Price, and Taylor counties). However, in terms of recreational interest, the FRSF best identifies with activities and interests that occur in the Great Northwest Region. The appeal of this region serves visitors seeking a “wild and remote” outdoor experience.

**TABLE 3.3 TOTAL CORD EQUIVALENTS FOR COUNTY FORESTS AND THE FRSF**

Total Cord Equivalents							
Ownership	Approximate Acres	2003	2004	2005	2006	2007	5 Year Average
Price County Forest	92,000	23,044	25,796	35,237	24,060	38,923	29,412
Rusk County Forest	89,000	27,610	27,729	76,322	23,972	46,880	40,502
Sawyer County Forest	114,800	24,232	29,398	52,019	59,538	27,217	38,480
FRSF	90,000	25,925	22,617	4,118	4,233	18,841	15,146

Source: Wisconsin County Forests

**TABLE 3.4 2006 EMPLOYMENT AND WAGES BY INDUSTRY SECTOR IN THE REGION (WISCONSIN)**

Industry Sector	Employment		Total Payroll		Employment	Total Payroll
Natural Resources	409	1.4%	\$10,759,661	1.3%	0.8%	0.6%
Construction	1,457	4.9%	\$55,445,176	6.8%	4.7%	5.7%
Manufacturing	6,707	22.4%	\$227,388,779	27.8%	18.4%	22.9%
Trade, Transportation, Utilities	5,142	17.1%	\$122,922,945	15.0%	20.3%	17.6%
Information	325	1.1%	\$8,847,465	1.1%	1.9%	2.3%
Financial Activities	1,046	3.5%	\$28,603,526	3.5%	5.8%	7.6%

Source: WI Dept. of Workforce Development, County Workforce Profiles

## REGIONAL ASSESSMENT

To understand the differences between the Great Northwest and the Northwoods SCORP regions, one can compare and contrast the FRSF with the Northern Highland-American Legion State Forest (NHAL) just 70 miles to the east. The NHAL receives an entirely different mix of recreational users. While double the size, the setting is very different. Numerous small tourist towns and lake communities dot the landscape, and recreational activity is diverse and intense; maximizing area resources during peak times.

A primary reason for the differences between the state forests is the location of the NHAL in the state's "lake district." The hundreds of lakes and natural resource amenities in the region are a draw for seasonal and recreational home development. The area surrounding the NHAL is one of the most rapidly expanding tourism centers in the region, with seasonal housing accounting for more than half of all the housing in many of these counties.

Comparatively, recreational activity on the FRSF and surrounding area is less busy. Towns are rural and widely dispersed and large blocks of public land surround the forest. The Chequamegon-Nicolet National Forest as well as Price, Rusk, and Sawyer County forests adjoin the FRSF boundary in all directions. Due to its more remote location and large blocks of public land, the FRSF provides a less fragmented, less intensely used block of public land than the NHAL.

### Regional Recreation Supply and Demand

The following sections describe the recreation demand in the region, the supply of opportunities, and trends and issues for future use. Analysis of the FRSF regional recreation is drawn primarily from the 2005-2010 SCORP report. SCORP divides the state into eight planning regions based on a collection of natural resource and tourism assets. The Great Northwest and Northwoods regions have significant natural resource amenities, such as lakes, forests, and rivers which draw recreationists and seasonal homeowners from outside the region.

The most popular activities in Wisconsin are water-based with nearly 50% of all residents participating in a variety of water sports. The Northwest Region has the highest participation rates in water-based recreation in the state. Nature-based recreation involves 38% of Wisconsin residents. A typical nature-based visitor wants to experience natural surroundings – hiking, camping, visiting wilderness areas. Come winter, snow and ice-based activities involve 44% percent of Wisconsin residents.

Recreational demand in the Great Northwest Region is largely determined by Wisconsin residents but is also influenced by out-of-state visitors. Minneapolis and St. Paul, Minnesota are about a 3 ½ hour drive from FRSF. Although more than twice

as far from the forest, residents from the Chicago, Illinois area also recreate here. Popular regional recreational pursuits among these groups include: fishing, sight seeing, camping, picnicking, hiking, birding, boating, canoeing and downhill skiing.

Popular outdoor recreational activities on or near the forest (among all participants) in the Great Northwest Region of the SCORP study include: boating, swimming, fishing, picnicking, camping, visiting wilderness or primitive areas, day hiking, big & small game hunting, canoeing, snowmobiling, snowshoeing, backpacking, migratory bird hunting, ATV riding, biking, snow and ice activities, off-road 4-wheel driving (SUV), and cross-country skiing. Table 3.6 compares the top recreation demands in Wisconsin and the Great Northwest Region.

To analyze recreation demand and supply, it is important to evaluate within the specific context of a given region. Compared to other regions, The Great Northwest region has a large geographical extent and low population. A metric used to study the relative abundance or scarcity of a recreation resource (recreation location quotient-RLQ) allows comparison to other regions even though their population and area size differ. The RLQ helps to evaluate what a region's recreation niche may be and where supply is lacking. Overall, the northern half of Wisconsin is providing abundant outdoor recreation for its population but for its large geographical area, it could be providing more "nature-based", "snow and ice", and "viewing and learning" opportunities (see SCORP 2005 for descriptions of these categories).

### Water Based Recreation

Recreation along, on, and in our waters is important to the character and quality of life in Wisconsin and supports a vital tourism industry. From lakes and flowages to rivers and streams, the supply of various water resources in the FRSF region is extensive. In Rusk, Price, and Sawyer Counties

**TABLE 3.5 SEASONAL HOUSING AND TOURISM**

County	Population	Housing Units	% Seasonal	% Employed in Tourism
Price	15,822	9,574	26.30%	6.20%
Rusk	15,347	7,609	15.10%	6.20%
Sawyer	16,196	13,722	48.50%	16.80%
Total	47,365	30,905	29.97%	9.73%
**Wisconsin	5,363,675	2,534,075	6.10%	7.30%

Source: Wisconsin SCORP 2005-2010. Regional Demographic Profile, Great Northwest and Northwoods

**REGIONAL ASSESSMENT**

alone there are over 79,000 acres of lakes and over 70 miles of remote and scenic river. The Turtle Flambeau Flowage, the head of the Flambeau River in Iron County, is 33,820 acres. The Chippewa Flowage in northwest Sawyer County is 15,300 acres. Both are excellent fisheries with spectacular natural scenery.

*The Flambeau River*

The Flambeau River is a significant river resource in Wisconsin. It meanders 150 miles southward from the Turtle Flambeau Flowage, southwest of Mercer, Wisconsin, in Iron County, through Ashland, Price, and Sawyer Counties to its confluence with the Chippewa River at the southern edge of Rusk County. High water quality, year round water levels for paddling, “wild” shoreline, occasional whitewater drops and the opportunity for multi-day canoe trips with secluded campsites, make this truly one of Wisconsin’s unique recreational resources. Only the Namekagon-St. Croix River National Scenic River offers a comparable experience. While other rivers in the region, such as the Brule provide paddling opportunities, the secluded, river accessible campsites on the Flambeau provide a more remote camping experience than a campground. The FRSF also contains 10 miles of the smaller South Fork of the Flambeau River.

has long been recognized as one of the best, if not the best, white-water canoe trip in the Midwest. Each year brings new friends to its waters to enjoy its miles of shaded shorelines and its roaring rapids.

A number of river-based paddle sport opportunities exist within the region. High quality water resources and a network of glacial watersheds throughout northern Wisconsin provide water recreation of all types. In addition to the Flambeau River, the region includes the St. Croix, the Namekagon and the Bois Brule River. Each of these rivers varies in character, size, flow, and surrounding vegetation and land forms. Additional canoe opportunities exist in the region but are less popular due to difficult access, frequent low water, poor water quality, and in-stream hazards (WDNR State Forest Assessment 2001).

The Flambeau River is somewhat unique in the region due to the diversity of resources and recreational opportunities the river and forest provides. It, too, offers wilderness-like, remote recreational experiences and protected shoreline, but all within the borders of a large block of managed public forest land. This scenic river resource presents a blend of fishing, boating, swimming, camping, and wildlife viewing opportunities.

**Land Based Recreation**

As with water based recreation, the large amount of public land in the region provides an abundant supply of land-based recreation opportunities. Tourism is a large and growing industry here and the demand for facilities and trails is increasing from visitors to the region (SCORP 2005). The region has an established set of trails for biking, skiing, hiking, horseback riding, ATV riding and snowmobiling (Table 3.7). Trails are located in the Flambeau River State Forest, the Chequamegon-Nicolet National Forest, and local county forests. Trails in the region tend to be multi-use and occasionally are designated as single use. Most trails are for hiking, biking, horseback riding, and ATV riding in the warm season and cross-country skiing, snowmobiling, or ATV riding in the winter. Multi-use allowance can create a single use trail situation when motorized and non-motorized recreation use the same trails. For example, even though bicycles are allowed on the Tuscobia Trail, the trail is largely used by ATVs.

The following sections describe the regional supply and demand for some popular land-based recreational activities in the Great Northwest region, including the FRSF.

*Biking*

Demand for biking opportunities is high across the state for Wisconsin residents. Mountain or off-road biking is the fifth most popular nature-based activity and road bicycling is the sixth most popular activity in a developed setting (SCORP).

**TABLE 3.6 STATE AND REGIONAL RECREATIONAL PREFERENCES**

Activity	% Wisconsin	% Great Northwest
Boating (any type) streams, etc	47.6	56.2
Swimming in lakes,	45.8	52.9
Snow/ice activities (any type)	44.4	48.7
Freshwater fishing	40.7	49.4
Visit a wilderness or primitive area	38.3	62.2
Motor boating	36.4	44.1
Day hiking	35	42.7
Hunting (any type)	21.7	37.3
Canoeing	20.5	29
Snowmobiling	18.3	26.5
Off-road 4-wheel driving (SUV)	17.7	22.7
Developed Camping	32.3	30.5
Coldwater fishing	13.9	17.1

Source: WI SCORP 2005-2010

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*Road Biking*

There are few designated bicycle trails in the region and biking on local roads and highways can be challenging due to narrow shoulders. Price County offers 12 "road routes" totaling 167 miles. These routes provide scenic bicycling opportunities on county and town roads. Demand for road biking is high in the Northwest region; 43% of those surveyed participate in this activity and consider the lack of designated trails an important issue (SCORP).

*Mountain Biking*

While trails for mountain biking are abundant in parts of the region, biking opportunities on or near the forest are limited. Demand for mountain biking in the Northwest Region is 28% of those surveyed (SCORP). Sawyer County provides several levels of off-road and mountain bike trails ranging from highly challenging to family-friendly. There are approximately 211 miles of bicycle trails in the Great Northwest region (SCORP), an insufficient amount for demand. There is roughly one major family-friendly off-road bike trail in each county in the region.

On the Forest, the Flambeau Hills Ski Trail doubles as a hiking and biking trail, with 15 trail miles in non-winter months. While biking is allowed on the 74 mile Tussock State Trail, ATV use during the spring, summer, and fall, make this trail difficult to use by cyclists. The Pine Line Trail (26.2 miles in Price and Taylor Counties) offers a similar trail type with fewer trail miles and without ATVs.

More challenging trails are found on forest roads or single track trails. These include the Blue Hills Trail System (20 miles in Rusk County) or the Sisters Farm Trail System (7 miles in Rusk County). The CNNF has over 100 miles of hard pack twin track, multi-use trails and forest roads open to mountain biking, although ATV traffic is regularly encountered.

Arguably the best collection of challenging mountain bike trails in the state can be found on the CNNF. The Chequamegon Area Mountain Bike Association (CAMBA) manages six areas

of trails which range in length from 40-100 miles, mostly in Bayfield and Sawyer Counties. There are 190 miles of trail in Sawyer County.

*Cross-Country Skiing*

Northwest Wisconsin is a region rich in Nordic skiing tradition and history, with some of the best cross country ski trails in the country. Not only are there hundreds of kilometers of groomed trails, they provide for a range of skill levels; from family-oriented to athletically challenging. Every year over 8,000 skiers and 20,000 spectators from around the world come to Sawyer County to ski the world famous American Birkebeiner cross-country ski race.

The demand for ski trails in the FRSF region is high. Historically, snow conditions are favorable and skiers from southern Wisconsin travel here to find snow. On the Forest, the Flambeau Hills Trail provides 15 miles of trail groomed and tracked for both traditional and skate skiers. Trails near the American Birkebeiner Ski Trail are popular. The Chequamegon side of the CNNF offers many trails, mostly for classic skiing. There are a few municipal and private providers of cross-country ski trails such as the Blue Hills Trail (Rusk County) and the Log Jam Trail (Phillips). County forests provide additional trails in the region.

*Hiking*

According to SCORP there is a shortage of hiking trails in the Great Northwest. Given the amount of publicly owned land in the area, the shortage may be perceived rather than actual. For example, hikers do not know where hiking is available on the public forests (i.e. old logging roads) and they prefer signed and designated trails. The majority of hiking trails in the FRSF region are on the Chequamegon side of the CNNF. All public lands allow hiking on forest roads and specified trails. Almost all ski trails are open for hiking when there is no snow on the trails.

Two of only eight National Scenic Trails in the nation run through this region and provide long distance hiking possibilities; the Ice Age and North Country Trails are multi-state trails with segments in various stages of development. Motorized use on these trails is prohibited.

*Horseback Riding*

There are few designated equestrian trails in the Great Northwest Region. Two such trails are on the CNNF. The 18.5 mile Smith Rapids Saddle Trail and 23 mile Horseshoe Lake Trail are non-motorized and provide an equestrian campground. In Rusk County there are 10 miles of equestrian trail next to the Flambeau River on the Flambeau Mine Copper Park. In addition to designated trails, horseback riding is allowed on all forest roads.

**TABLE 3.7 RECREATIONAL TRAIL MILES BY TYPE IN SAWYER, PRICE, RUSK, AND TAYLOR COUNTIES**

Activity	Existing Miles	Trail Tread
Cross-country Skiing	280	Grass/dirt
Equestrian	49	Grass/dirt
Hiking	259	Grass/dirt
Mountain Biking	421	Dirt
Snowshoeing	189	Grass/dirt
Interpretive or Nature	25	Gravel or Wood Chips

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*Motorized Recreation*

**ATVs**

There are over 800 miles of winter ATV trails and 400 miles of summer trails in the Great Northwest region (Table 3.8). The trails are highly connected offering many routes over 100 miles in length. Many are multi-use trails and usage is coordinated with snowmobiles and seasons when the trails can be driven on without damage. The Wisconsin Department of Tourism surveyed Wisconsin ATV users and found that the majority travel to areas specifically to ride their ATVs on trails and stay an average of three nights in that location (WDT 2004). This is an important tourism component in the Great Northwest where there are many trails. Twenty ATV clubs exist in the region providing group rides, education, trail maintenance and services to members. The majority of trails are on county and federal land. Camping is available on or near the CNNF trails, county forest trails, Tuscobia State Trail, and the FRSF (Table 3.9).

Converted from an abandoned railroad bed, the Tuscobia State Trail is a 74 mile multi-use linear trail that runs through the north end of the Forest. The primary use of the Tuscobia is ATV-riding in summer and snowmobiling in the winter. Other permitted uses are hiking, biking, and equestrian. Motorcycles and licensed vehicles are prohibited. The trail is mostly gravel and natural soil and maintained for motorized recreational vehicles. The trail connects to the CNNF's Dead Horse Trail , providing approximately 130 miles of ATV trail.

*Snowmobiling*

Snowmobiling is a well-established winter activity in Wisconsin. There are roughly 2,700 miles of state-funded trails in the Great Northwest region (SCORP 2005). Snowmobile and ATV trails often share the same path; ATVs being restricted during certain seasons. The Flambeau River State Forest provides for 55 miles of snowmobile trails and 38 miles of ATV trails. Snowmobiling is a popular winter activity in the region. FRSF trails are linked to the Tuscobia State Trail and to exten-

sive trails systems in Sawyer, Rusk and Price Counties. Table 3.10 lists the regional snowmobile trail miles by county.

*Camping*

In the Great Northwest Region camping opportunities vary from primitive campsites to modern RV campgrounds with multiple amenities. The FRSF region is characterized by nature-based recreation. Historically, camping in rustic campgrounds has been part of the appeal of the northern forest for vaca-

**TABLE 3.8 ATV TRAIL MILES BY COUNTY**

County	Trail Name	Miles
Sawyer County	All trails	98
Price County	All trails	108
Taylor County	All trails	291
Iron County	All trails	163
Rusk County	Loop connector to Tuscobia and Birchwood	20
Wisconsin State (Sawyer, Price)	Tuscobia State Trail	74
FRSF (Sawyer)	Flambeau River State Forest Trail	38
CNNF (Price)	Flambeau Trail System (Price)	60
CNNF (Ashland)	Dead Horse Trail (links with the Tuscobia Trail, and Stock Farm Bridge Campground as well as ATV routes and trails to Gildden, Clam Lake, and Cayuga.	56
CNNF (Taylor)	Perkinstown Trails	20
Price County	Prentice Bushbenders Winter Trail	
Price, Taylor Counties	Pine Line Trails	26.2
Ashland County	Tri-County Connector	62
Price County	Georgetown Trail	13

**TABLE 3.9 REGIONAL ATV CAMPING OPPORTUNITIES WITH TRAIL ACCESS**

Name and County	Distance from FRSF Headquarters (miles)	Number of Campsites (Access by Car, Trailer, ATV)	Electric	Amenities		
Sawyer County						
Ojibwa Park, Town of Ojibwa	20	3 tent sites along Tuscobia trail	x	Pit Toilets	RV Dump Station	Picnic Area
Price County						
Smith Lake County Park and Campground	35	30 sites with access to Tuscobia trail	x	Showers and flush toilets	N/A	N/A
Sailor Lake Campground	35	20 sites with ATV access to Flambeau River Trail	N/A	Vault toilets	N/A	N/A

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tioners. Federal and State forests are traditional providers of these facilities (Table 3.11).

Camping is a popular recreational activity in the region. There are approximately 1,300 campsites available within a 50 mile radius of the Forest. The majority of these sites are privately-owned with electric hook-ups. About 29% of them are designed for rustic camping. Most of the rustic camping opportunities can be found on municipal, county, state, and federal owned lands.

A typical “rustic campground” has fewer than 75 campsites with moderate development – a tent pad, fire ring, picnic table, vault toilets and parking. Electric hook-ups for RVs (except the campground host’s site), and showers, are not provided.

Figure 3.3 shows the current preferences in camping type. Today, 49% of people camping in Wisconsin do so with an RV, whereas 32% are tent campers. RV camping is a growing trend statewide.

The largest supplier of rustic tent camping near the Forest is the CNNF. The National Forest has over 500 sites; most of them near water bodies. Many of the national forest sites allow RVs, but still promote a less developed camping experience.

County forests are the second largest public supplier of campsites in the region (Table 3.12). They offer a greater variety of services such as electric sites, pressurized water, flush toilets, and day use areas than other public campgrounds. Rusk, Price, and Taylor counties each have over 60 sites on county forest land, whereas Sawyer County does not have any campgrounds. Both to the west and south of the FRSF, camping opportunities are limited. Most of the camping opportunities in the area are with the National Forest and Price County to the north and east.

State campgrounds are limited in the region. The FRSF has two rustic campgrounds (total of 59 sites) and 14 canoe campsites along the Flambeau River. The Turtle-Flambeau Flowage has 60 campsites and the Chippewa Flowage has 18 island sites.

State forests have traditionally provided rustic camping. In recent years the trend has shifted toward larger vehicles with pull-behind campers and trailers. These larger units often require more space for set-up and parking. Many campers are demanding more amenities and services.

Neither the FRSF nor the flowages have electrical sites or showers. Some campers desire electricity to power their campers or outdoor appliances. Some say that providing electricity is a quieter option than allowing electrical generators for charging camper batteries. In some cases, campers request an

electrical source to power health maintenance equipment (e.g. breathing apparatus).

Modern amenities and fully developed campgrounds are typically provided by the private sector, state parks and a few state forests. In general, there are two types of campers: those who want flush toilets, showers and electricity, and those who do not. Some campers feel that adding amenities such as showers, flush toilets and electricity increases competition for campsites at already popular locations, changes camper

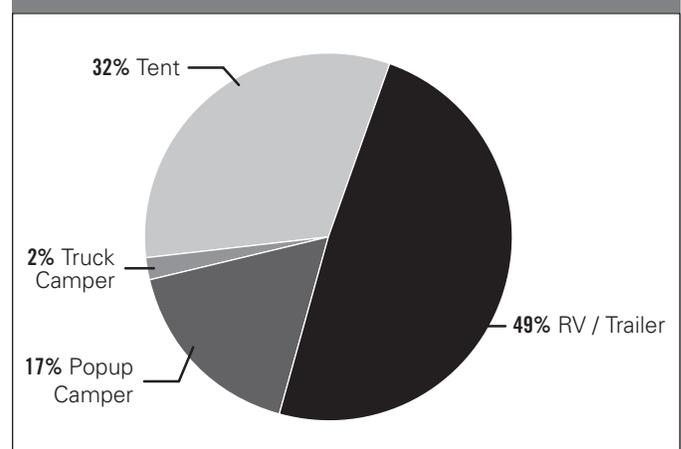
**TABLE 3.10 SNOWMOBILE TRAIL MILES BY COUNTY**

County	Trail Miles
Ashland	205
Iron	289
Price	365
Rusk	165
Sawyer	528
Taylor	300

**TABLE 3.11 PUBLIC CAMPSITES WITHIN A 50-MILE RADIUS OF THE FRSF**

Regional Campgrounds	Sites with Electricity	Sites Without Electricity	Total	% of Total
Federal	0	248	248	0%
State	13	41	54	24%
County	112	40	152	74%
Municipal	127	45	172	74%
Private	681	3	684	100%

**FIGURE 3.3 PREFERENCES IN CAMPING BY TYPE**



Source: WI SCORP 2005-2010

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clientele and changes the camping experience overall. Others feel that features like showers and flush toilets are crucial for a quality camping experience. (Wisconsin’s Northern State Forest Assessments, WDNR, 2001). Table 3.11 lists public campgrounds near the FRSF.

*Private Campgrounds*

Traditionally privately owned campgrounds cater to campers looking for a developed setting with a full range of camping amenities and lodging options. According to the Wisconsin Association of Campground Owners (WACO), there are 10 WACO-member private campgrounds within 50 miles of the FRSF headquarters. The majority offer full hook-ups (water/ sewer/electric service) for RVs, and pull-through campsites for large vehicles. Six of the private campgrounds offer additional lodging options – cabins, cottages, or trailer rentals. Only four offer tent campsites. Table 3.13 lists private campgrounds in the region.

*Hunting*

Hunting is allowed on all undeveloped public property and on industry-owned forest lands in the region. The FRSF, state wildlife lands, county forests and the CNNF provide extensive acreage for a variety of species.

The FRSF region is highly regarded for bear, deer and grouse hunting. Northern Wisconsin features one of the largest Ruffed Grouse populations in the nation. Park Falls, in northern Price County, claims to have the most habitat for Ruffed Grouse anywhere and holds the title of “Ruffed Grouse Capital of the World.” Wild turkey hunting is becoming increasingly popular in the region as populations of these birds continue to increase and expand statewide. The majority of the FRSF region is currently designated in a white-tailed deer “Herd Control Unit” for 2008 due to herd size that exceeds overwintering goals. Additional gun and archery hunting of antlerless deer is allowed to meet reduction goals.

Opportunities exist for hunting camps in the FRSF and CNNF. These camps derive from a deep traditional hunting heritage within the FRSF region.

A variety of hunter-walking trails are available in the FRSF, the CNNF, and county forests. Some are located on existing hiking trails while others are specifically designed for hunters. For those wanting a primitive, non-motorized hunting experience, two wilderness areas on the Chequamegon side of the CNNF, and two wild areas in the FRSF are open to hunting.

**TABLE 3.12 COUNTY FOREST CAMPSITES IN FRSF REGION**

Name of County	Number of sites (total)	Electric Fee	Sewer	Lake Shore	Boat Access	Swimming	Play ground	Pit or Flush Toilets	Showers
Ashland	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron	20	yes	yes	yes	yes	yes	yes	both	yes
	5	yes	yes	yes	yes	yes	yes	pit	no
	33	yes	yes	yes	yes	yes	yes	pit	no
Price	6	yes	yes	no	no	no	yes	pit	no
	54	yes	yes / dump station	yes	yes	yes	yes	both	yes
	6	yes yes	yes / dump station	yes	yes	yes	yes	both	yes
	30	yes	yes	yes	yes	yes	yes	both	yes
Rusk	15	N/A	N/A	yes	yes	yes	no	pit	no
	15	yes	N/A	yes	yes	no	yes	pit	no
	25	yes	yes	yes	yes	yes	yes	pit	no
	9	yes	N/A	yes	yes	no	yes	pit	no
Sawyer	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: Wis. County Forests Assoc.

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*Wildlife Viewing*

The SCORP report states that roughly 65% of Wisconsinites enjoy viewing and photographing nature and visiting nature centers. The National Forest Service estimates that 60% of visitors participate in nature-related activities such as viewing wildlife and natural features, nature study, visiting a nature center or viewing a forest – overall the most popular activities.

The “Great Wisconsin Birding and Nature Trail” guides the nature traveler to the best of Wisconsin’s wildlife watching areas. The Flambeau River State Forest is listed as stop #71 on the Great Wisconsin Birding and Nature Trail system. Other highlights in the FRSF region are the Hay Creek State Wildlife Area in Price County, Blue Hills/ Moose Ear Creek in Rusk County, Totagatic Lake State Wildlife Area in Sawyer County, and Kimberly Clark State Wildlife area in Price County.

*Outdoor Education/Interpretation*

Lack of educational programs/naturalists/interpreters in the Northwest Region was an issue and need identified among public perspectives in the 2005-2010 SCORP report. Opportunity exists to educate visitors, hunters, campers, back-country and river users about recreational opportunities and facilities on the forest, FRSF management activities, regulations and safety.

Developed facilities for nature education and interpretation are lacking in the FRSF region. The nearest locations are: Hunt Hill Nature Center and Audubon Sanctuary, located 55 miles away in Sarona, WI, and The Northern Great Lakes Visitor Center located in Ashland, WI, 75 miles from the Forest. Two additional centers located farther west include Crex Meadows State Wildlife Area Visitor Center, in Grantsburg, WI and St. Croix River National Scenic Riverway Visitor Center in St. Croix Falls, WI.

**Trends, Issues, and Needs**

According to SCORP, various factors influence visitors’ travel, visitation, and recreation participation. Recent changes in our economy are an example. Visitor perceptions of recreation issues specific to the Great Northwest Region include:

- Lack of funding for park and recreation maintenance
- Increasing ATV usage and associated impacts
- Lack of outdoor education centers and naturalists
- Overcrowding
- Perception of logging on public lands
- Loss of public access to lands and water
- Noise pollution from motorized activities
- Possible loss of silent sport facilities.

Additional trends and issues that could affect the FRSF include:

- Conflicts between silent sports and motorized uses
- Perceptions of logging on public lands
- Conflicts of access management
- Loss of open industrial forest lands for public use
- New forms of recreation
- Increasing waterfront development
- Aging population of user groups
- Changes in recreational and seasonal housing
- Increased cost of fuel and travel
- Fragmentation of forest lands; loss of habitat and open space due to land development
- Changing demographics and interests of future generations

Understanding the supply and demand of recreational resources is an important component of planning for recreational opportunities. If there is a demonstrated shortage of a resource, it is important to know what future demand for that resource will be. Table 3.14 lists potential level of demand and supply shortages for activities associated in the Northwest region. This list only includes activities that are consistent with the FRSF’s mission or activities the forest can support.

**Compatibility and Conflict**

The 2005-2010 SCORP identified the primary concerns of recreation users statewide are: lack of funding for park and recreation maintenance, increasing ATV usage and associated impacts, increasing noise pollution from motorized activities,

**TABLE 3.13 PRIVATE CAMPGROUNDS WITHIN 50 MILES OF THE FRSF**

Campground	Number of Sites	Full Hook-Up	Water/Electricity	Pull -Thru	Tents	Credit	Trailer Rental	Cabins/Cottages
Springbrook	34	34	5	0	x	x		x
Spooner	21	0	21	7		x		
Birchwood	20	20	-	-				
Birchwood	17	17	-	16				
Ladysmith	25	0	0	0	x			x
Hayward	219	49	-	120		x		x
Spooner	47	47	0	7				x

Source: Wis. Assoc. of Private Campground Owners (WACO)

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lack of outdoor education centers and naturalists, overcrowding, and pressure from the logging industry to harvest on public lands.

**ECOLOGICAL LANDSCAPE**

The National Hierarchical Framework of Ecological Units (NHFEU) is a land classification system used nationwide to describe landscapes, based on climate, soils, and dominant vegetation types. Using the NHFEU classification system as a basis, the WDNR has mapped Wisconsin into 16 distinct Ecological Landscapes. According to the WDNR’s system, the Flambeau River State Forest and its surroundings are located in the heart of the North Central Forest Ecological Landscape (see Ecological Landscapes of Wisconsin, WDNR Handbook for more information). The North Central Forest is characterized by heavily forested uplands, forested and unforested lowlands, and a number of major river systems, including the Flambeau, Chippewa, and Jump Rivers.

This Ecological Landscape has a continental climate, with cold winters and warm summers. The growing season averages 114 days (base 32°F), ranging from 85 to 140 days. The growing season length is average among Ecological Landscapes in the state. The average January minimum temperature is -2°F, and the average August maximum temperature is 79°F. Summer temperatures can be cold or freezing at night in low-lying areas, limiting the occurrence of some flora. Annual precipitation averages 32 (30-35) inches, an average value as compared with the rest of the state. Annual snowfall averages 63 inches, ranging from 24-139 inches, a snowfall typical of northern Wisconsin, but lower than the 71 inches of the Superior Coastal Plain Ecological Landscape.

The pre-settlement vegetation of the uplands was primarily hemlock-hardwoods, with eastern hemlock, yellow birch and sugar maple as the dominant tree species. White pine was also present in this Landscape, mostly as scattered patches or as individual trees within the hemlock-hardwood forests. Other species represented, although far less important, included white ash, basswood, red pine and red oak. Forested wetlands were extensive in the North Central Forest. Wet-mesic forests are better represented here than in other Landscapes, including conifer-dominated white cedar swamps, and hardwood-dominated black ash swamps. Acidic conifer swamps consisting of black spruce and/or tamarack were also common and widespread. Unforested peatland communities such as Muskeg, Open Bog, and Poor Fen were also present throughout this landscape.

The region remains a tree-dominated landscape, with over 80% of the Landscape in forest cover. Species composition has shifted from pre-settlement conditions; northern hardwood stands are now dominant, with sugar maple, basswood, white ash, and red maple abundant and increasing. Remnant pockets of hemlock, yellow birch and white pine are present, but uncommon. Aspen-white birch forest is also a significant part of this Landscape, but declining across the region, with the white spruce-balsam fir type being the least represented. Forested wetlands are still a significant component of this Landscape. Conifer-dominated wetlands are the most abundant type on saturated soils, followed by swamp hardwood, and minor amounts of floodplain forest are present along some of the larger river systems. All combined the forested areas within this landscape represent over 25% of the total forested acreage in Wisconsin. Unforested wetlands continue to exist in the North Central Forest, including acidic peatlands, alder/willow thickets, and sedge meadows. Agriculture is not completely absent from the North Central Forest, but it does play a minor role in general, comprising just 6% of the North Central Forest.

**TABLE 3.14 REGIONAL RECREATION SHORTAGES AND DEMAND**

Shortages	Level of Demand
Boat Launches – Carry In	Increasing
Campgrounds	Increasing
Picnic Areas	Increasing
ATV Trails	Increasing
Cross-Country Ski Trails	Stable
Hiking Trails	Stable
Snowmobile Trails	Decreasing
Snowshoe Trails	Increasing
Water Trails	Increasing
Bicycle Trails	Increasing

**Ecoregions**

Using the NHFEU, the Flambeau River State Forest is located with Province 212 - Laurentian Mixed Forest; Subsection 212Xd – Central/Northwest Wisconsin Loess Plains. The FRSF is located within three Land Type Associations (LTA), and these are described below:

- 212Xd02 (Flambeau Silt-capped Drumlins). The characteristic landform pattern is rolling drumlins with swamps common; this LTA has soils that are predominantly moderately well-drained silt loam over acid sandy loam till. Common habitat types (Kotar et al. 2002) are ArAbCo, Lowland, ATM, AOCa, and ACal. This LTA comprises 16% of the FRSF in the north and east portions of the property.
- 212Xd03 (Exeland Plains). The characteristic landform pattern is undulating outwash plain. Soils are predomi-

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nantly well-drained silt loam over outwash. Common habitat types are AOCa/AH, Lowland, ACal/AHI, ArAbCo, TMC, and ATM. This LTA comprises the majority (77%) of the FRSF.

- 212Xd05 (Jump River Ground Moraine). The characteristic landform pattern is undulating moraine and stream terraces. Soils are predominantly somewhat poorly drained silt loam over dense, acid sandy loam till. Common habitat types are ArAbCo, Lowland, AHI/ACal, AH/AOCa, and ATM. This LTA comprises only 7% of the FRSF in the southernmost portion of the forest and includes the richest mesic forest stands on the property, based on field observations of the ground flora.

## Natural Resources

### Forest Resources

The North Central Forest makes up over 25% of the forested lands in Wisconsin, and some of the largest contiguous blocks of forest in the state occur in this Landscape. Northern Wisconsin has a long tradition as a leading producer of timber products, with a number of both sawmills and pulpwood mills being located in the region. Forest resources form a significant base of the economy in this Landscape (landscape level data from the Draft North Central Forest Ecological Landscape, June 2008).

As previously mentioned, northern hardwoods are the most prevalent forest cover type in this part of the state. Older age classes of this and other cover types are uncommon for most landholdings in the area. Based on 2006 FIA data, there are no forest cover types with more than 1% of their acreage in age classes over 80 years in the 3 counties comprising the FRSF.

Aspen management is an important focus in much of the surrounding landscape, especially on county-owned lands and large industrial forests. Price, Sawyer, and Rusk counties have the 3rd, 6th, and 12th highest acreages of aspen in the state, based on 2006 FIA data. All three of these counties are also in the top 10 counties in the state for total aspen acreage in both the 0-20 and 21-40 age classes. Nearby wildlife areas, such as the Kimberly-Clark Wildlife Area (8,639 acres) maintain extensive areas of aspen and upland brush for game management and Sharp-tailed Grouse habitat. Finally, the three-county forests combined contain over 100,000 acres of aspen.

### Wildlife

The region provides excellent habitat for both game and non-game species. White-tailed deer, black bear, ruffed grouse, and furbearers are abundant, and this region attracts hunters and trappers nationwide in pursuit of these species. Relatively uncommon species include occasional moose, increasing numbers of wild turkey, and an introduced population of North American Elk.

### Rare Animals

Wisconsin's Natural Heritage Inventory (NHI) Working List includes those species that are listed at the Federal and State level as well as Special Concern Species. As of September 2007 (WDNR 2007), NHI documented 104 rare animal species within this Landscape including 7 mammals, 23 birds, 5 herpetiles, 12 fishes, and 57 invertebrates. These include 1 federal candidate for future listing, 10 State Endangered species, 16 State Threatened species, and 77 State Special Concern species.

### Rare Plants

WDNR's Natural Heritage Inventory database (NHI WDNR 2007) contains records for 95 vascular plant species occurring within the North Central Forest Ecological Landscape that are currently listed as Endangered (15), Threatened (15), or Special Concern (65) by the state of Wisconsin. The federally Threatened Fasset's Locoweed (*Oxytropis campestris* var. *chartacea*) occurs in this landscape and is the only plant listed at the Federal level to date found within the North Central Forest.

### Aquatic Resources

Across the North Central Forest Ecological Landscape flow 4,850 perennial streams, ranging from small headwaters spring flows to some of the largest warm water rivers in the state with high quality habitat. Many rivers and streams here host Species of Greatest Conservation Need (SGCN). Among these are several that are candidates for designation as Priority Conservation Opportunity Areas including: North Fork Flambeau River; South Fork Flambeau River; lower Flambeau River; and Jump River. Natural lakes and man-made flowages are also abundant, with such popular water bodies as the Chippewa, Turtle-Flambeau and Holcombe Flowages (see Draft North Central Forest Ecological Landscape, June 2008).

Several rivers in the region have been identified as Outstanding Water Resources (ORW) and Exceptional Water Resources (ERW). Outstanding and Exceptional water resources are surface waters which provide outstanding recreational opportunities, support valuable fisheries, have unique hydrologic or geologic features, and have unique environmental settings. The Property Assessment portion of this document provides more detail. Information and maps related to the wildlife Action Plan and Species of Greatest Conservation Need can be found at this website: <http://dnr.wi.gov/org/land/er/wwap/implementation/>.

### Conservation Opportunity Areas

The Wildlife Action Plan (WDNR 2006) identifies three Conservation Opportunity Areas (COAs) associated with the FRSF; these are places in Wisconsin that contain ecological features, natural communities or Species of Greatest Conservation Need (SGCN) habitat for which Wisconsin has a unique responsibility

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for protecting when viewed from the global, continental, upper Midwest, or state perspective. The COAs comprised by the FRSF (4.10 Upper Flambeau Woods, 4.11 Skinner Creek, and A.41 Flambeau River) are part of a group of COAs characterized by large blocks of forest that provide an opportunity to manage for mature to older age classes. The area features a continuum of an extensive matrix of older northern hardwood forest with imbedded lakes, wetlands, and bedrock including Northern Mesic Forest, Northern Dry-Mesic Forest, Northern Wet-Mesic Forest, Northern Wet Forest, Open Bog, Muskeg, Northern Hardwood Swamp, Northern Sedge Meadow, and Bedrock Features.

*Ecological Management Opportunities in the North Central Forest Ecological Landscape*

Significant management opportunities in the North Central Forest Ecological Landscape have been identified and highlighted for key ecological features, including: 1) Matrix forest of northern hardwoods and hemlock hardwoods (Northern Mesic Forest) with opportunities to manage extensive interior forest because of the large public land base and large private holdings, potential for high connectivity, restoration of missing features, source areas for many species including forest interior specialists and wide ranging species; 2) White Cedar and Black Ash Swamps; 3) Abundant acid peatlands: Black Spruce Swamp, Tamarack Swamp, Muskeg, Open Bog, Poor Fen; 4) Shrub Swamp and Open Wetland Communities; 5) Forested Watersheds, protecting the water quality and quantity of many lakes and rivers, including headwaters areas; 6) Ephemeral Ponds; 7) Bedrock Features; 8) Miscellaneous Features that provide habitat or other resources that would otherwise not be available.

Specifically, the Landscape provides the following:

- The state's best opportunity to manage for interior mesic forest at a landscape scale.
- Opportunities to diversify forest structure and composition, especially at larger scales, and this can be accomplished via integrated planning, restoration, active management, and protection.
- Diminished forest attributes throughout most of the Landscape include large patches of unbroken interior forest, old growth and old forests of all types, formerly widespread and abundant structural features associated with old growth forest, greater coniferous cover, connections within and across Landscapes, structural features associated with old growth forest, and canopy cover of formerly dominant species such as hemlock and yellow birch.

- Forested wetlands are common and widespread: wet-mesic forests of white cedar and black ash offer great opportunities for conservation, as do the wet forests of tamarack and black spruce.
- This Landscape contains a large public land base, a factor that contributes to ecological, recreational, and economic opportunities. Federal, state, and county ownerships are significant here.
- Large private holdings here include tribal lands, industrial forests, and NGO-led conservation projects.
- The headwaters or other important stretches of ecologically and socio-economically important rivers such as the Wisconsin, Wolf, Chippewa, Flambeau, Black, Pine, Popple, and Oconto are embedded within the extensive forests of this Landscape.
- Lakes are common on certain landforms where they provide key habitats for aquatic and other water dependent organisms.
- Excellent representation of glacial landforms: e.g., ground moraine, end moraine, outwash plain, drumlin, esker, ice-walled lake plain, and water gaps. Each of these may be associated with characteristic vegetation types, aquatic features, species assemblages, and conservation opportunities.
- Concentrations of kettle lakes associated with landforms such as end moraines and collapsed outwash, other lake types occupy poorly drained depressions in ground moraine.
- Areas of glacial till with low relief, fine-textured soils, impeded drainage, and an abundance of ephemeral ponds.
- Extensive and widespread acid peatlands.
- Many locations for white cedar swamp and black ash swamp, some of which are extensive.
- Forested watersheds, some of them very large.
- This Landscape may be a 'source area' for many forest interior species.

These opportunities can be further considered at the property level to provide property specific management objectives that reflect the larger regional opportunities.



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### PHYSICAL ENVIRONMENT

#### Topography and Soils

The Forest and much of the surrounding area are underlain by Precambrian bedrock covered by 50 to 100 feet of glacial till. Bedrock exposures are generally restricted to the major river corridors where post-glacial meltwater drainage caused erosion. On the Forest, significant bedrock outcrops are associated with many of the larger rapids, especially along the North and South Forks of the Flambeau River.

The FRSF lies within the terminal moraine of the Chippewa Lobe of the Wisconsin glaciation. Ground moraine of depositional materials predominates, with areas of pitted outwash. There are also extensive areas of undulating outwash plain (Exeland Plains Land Type Association (LTA)) with smaller inclusions of pitted outwash with very hilly topography on the Forest (see Wisconsin Land Type Associations, 1999). The outwash deposits are somewhat narrow, and are associated with post-glacial, meltwater drainage channels. Minor landform features associated with these meltwater deposits include eskers, kames, outwash river terraces, narrow stream-cut ravines, and steep cut banks. A uniform silt loam surface texture is often present on all of the above-mentioned landforms.

Surface soils in the Central/Northwest Wisconsin Loess Plains Subsection range from well-drained to somewhat poorly-drained and include silt loams, loams, and sandy loams over a compact sandy loam till (deposited underneath the weight of the glaciers). The dense till subsoil is tight, limiting downward movement of water and roots. The water table is often “perched” within this subsection. The compact till, firm, silty soils, and the gentle terrain also account for prolonged periods of seasonal wetness, numerous small wetlands, and an abundance of ephemeral ponds found in some areas. Windthrow occurs in some areas due to shallow rooting on these soils.

Sandy soils are uncommon on the FRSF. Only two small units are known to occur (Mark Schmidt, personal communication), and the largest of these is on the northern portion of the State Forest near the town of Oxbo (see the “Oxbo Pines” Primary Site). Wetland soils on the FRSF include large areas of poorly drained mucks and organic peats.

### WATER RESOURCES AND AQUATIC HABITATS

#### Description of Lakes, Streams, and Aquatic Habitats

Surface water resources comprise a substantial proportion of the Flambeau River State Forest. Open water, covers about 5.3% of the combined area of the main unit and the Upper North Fork Natural Area. Classified wetlands account for an additional 26.5% of the total land coverage within these property boundaries.

The physical characteristics of the property’s seven natural lakes are summarized in Table 3.15. The 3-acre widening on Connors Creek between Lake of the Pines and Connors Lake is locally known as Papoose Lake. The 138-acre Skinner Creek Flowage, the only artificial impoundment on the Flambeau River State Forest, is locally known as Sobieski Flowage.

The surface water inventory on the Flambeau River State Forest includes 160 miles of perennial streams and 30 miles of intermittent streams. The largest streams are the South Fork Flambeau River and the Flambeau River downstream from the confluence of its North and South forks.

#### Special Designations

##### *Outstanding Resource Waters*

The South Fork Flambeau River, the North Fork in the Upper Flambeau River Natural Area, and Evergreen Lake are classified as Outstanding Resource Waters (Table 3.16) under Chapter NR 102.10, Wisconsin Administrative Code. This special designation affords the highest level of protection in decisions and actions pertaining to discharges. Outstanding Resource Waters may not be diminished in quality.

##### *Exceptional Resource Waters*

An additional 72.7 stream miles are designated as Exceptional Resource Waters (Table 3.16) under Chapter NR 102.11. Exceptional Resource Waters provide valuable fisheries, hydrologically or geologically unique features, outstanding recreational opportunities, unique environmental settings, and they are not significantly impacted by human activities. Water quality of Exceptional Resource Waters may not be degraded, except as provided in Chapter NR 207.

#### Fishery Management Classifications

**Trout Streams**—Of the 189.4 miles of rivers and streams within the project boundary, 34.2% are currently classified into three categories of trout streams for fishery management purposes (Table 3.17). No Class 3 trout streams are stocked on the Forest.

Class 1 streams are high quality waters in which wild trout reproduce sufficiently to sustain populations at or near carrying capacity. No stocking is necessary.

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Class 2 streams support good survival and some natural reproduction, but not enough to optimize available food and habitat. Therefore, stocking is required to maintain a desirable sport fishery. Class 2 trout streams often produce larger than average trout.

Class 3 streams are marginal trout habitat with no natural reproduction and virtually no year-to-year survival. They require annual stocking to provide put-and-take trout fishing.

Muskellunge Waters—Muskellunge populations are known to occur in three lakes and in portions of two rivers systems associated with the Flambeau River State Forest (Table 3.18). Muskellunge waters are differentiated by the level of natural production and the extent to which muskellunge waters must be stocked. Muskellunge provide an important component of the recreational fishery in the FRSF. Local, visiting, and guided anglers appreciate the abundance and size structure of musky available in these waters.

**Aquatic habitats**

This section provides a general overview of water quality, aquatic vegetation, habitat improvement projects, and fishery for major lakes, rivers, and streams (Table 3.18) on the property.

*Connors Lake*

A deep lake with good water quality and thermal stratification. Stakeholders have expressed interest in establishing a lake trout fishery. Ciscoe may be present and half-logs have been installed to enhance smallmouth bass spawning habitat. Fish cribs have been installed as recently as 2008, with experimental stocking of spottail shiners to enhance forage. The lake is currently stocked with walleye and muskellunge.

*Lake of the Pines*

Large muskellunge fingerlings are stocked in alternate (odd) years at 1/acre.

*Mason Lake*

Landowner currently allows free public access via private road, no improvements at access.

*Evergreen Lake*

Occasional algae blooms are moderate to severe, which is surprising given the small drainage area, the low amount of development along the shoreline, and the benign land uses in the forested watershed.

*Skinner Creek Flowage (Sobieski Flowage)*

Suffers recurrent fish kills in winter when decomposing organic material depletes dissolved oxygen. Consequently, the Department manages this impoundment for furbearers

and waterfowl, rather than as a recreational fishery. Despite its history of chronic winterkill, Sobieski Flowage receives some fishing pressure from anglers seeking bullheads and northern pike, which can tolerate low oxygen concentrations or move upstream to find suitable conditions in tributary streams.

*North Fork Flambeau River*

The Aquatic habitat and shorelines were severely altered by log driving practices. Water quality was severely impaired by industrial discharges from wood processing and paper manufacturing in Park Falls, with massive fishkills documented in 1920's. With improved water treatment and decreased discharge, water quality and aquatic communities have rebounded although sediments still contain high levels of contaminants (metals). The dams continue to hinder recovery of the mussel community by obstructing movement of fish species that serve as hosts for their parasitic larvae. Fishery data can be found in Table 3.18.

*South Fork Flambeau River*

The aquatic habitat has been severely altered by log driving practices. Although the water quality was never degraded from industrial discharges, the influx of its clean water tended to dilute historical pollutants from the North Fork to moderate the impact on riverine ecosystems downstream of their confluence. Fishery data can be found in Table 3.18.

*Price Creek*

From the mid 1980's through the early 1990's WDNR Fisheries staff installed numerous brush bundles and other structures in Price Creek to improve trout habitat, trout population density, and size structure. The project was funded from Trout Stamp revenues. The current condition of the structures is unknown, and no maintenance has been done since the mid 1990s.

**VEGETATION AND NATURAL COMMUNITIES****Historic Vegetation**

Information on historic vegetation comes primarily from the General Land Office's Public Land Survey (PLS), conducted in Wisconsin between 1832 and 1866 (Schulte and Mladenoff 2001) and also from Finley (1976). The uplands comprising the FRSF were historically vegetated with mature Northern Mesic Forest, dominated by hemlock and yellow birch, with white pine, sugar maple, and basswood as major associates. Balsam fir and hemlock "brush" are frequently mentioned as understory species. It is possible the surveyors were referring to Canada yew or "ground hemlock," a common understory shrub in the pre-settlement forest (Swift 1967). Hemlock and yellow birch were historically co-dominant in much of what's now the FRSF and surrounding area.

No early successional aspen-birch stands large enough to be mapped at the township scale were delineated by Finley, and aspen was the least reported tree species from the Public Land

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Survey data. Windthrow is the major natural disturbance over much of this landscape. Historically dominant lowland species were mostly swamp conifers, including tamarack, black spruce, and white cedar. Hemlock, yellow birch, black ash, white pine, and balsam fir were also noted in the wetlands in some areas. Many of today's ash swamps were likely to have been dominated by conifer species (hemlock) historically.

Changes in forest cover types have been affected by both natural disturbance events and forest management. The major cover types have not changed significantly in the past 40 years—northern hardwoods and aspen remain the dominant cover types and comprise almost half of the Forest's acreage. Other cover types, such as hemlock, have changed dramatically. Almost half of the hemlock acreage was lost to the 1977 windstorm. Additionally, red maple was not a significant cover type in 1970 but now comprises 3 percent of the land cover. Table 3.19 compares major cover types in 1970 to current conditions. There was no significant change in non-forested cover types.

Forest management also influences forest cover types. The 1980 Master Plan identified a preliminary annual harvest goal of 675 acres to meet plan objectives. This goal was established without updated forest reconnaissance (recon) data from the 1977 windstorm. Harvest goals were to be examined and modified as forest recon data were updated. Current recon data identifies approximately 8,000 acres of forest management practices in backlog for the FRSF. The current planning schedule estimates that approximately 2,300 acres/year be established for timber sale for the next 15 to eliminate the backlog. In 2007, the Flambeau established 2,200 acres

for timber sale, close to annual acreage need to reduce the backlog. On average, the Forest harvests 790 acres per year with an average of 10,000 cord equivalents.

#### Current Vegetation and Forest Resources

The area comprising the FRSF is still largely forested (Figure 3.4). Deciduous forests, covering roughly half of the land area of the three counties comprising the main unit of the forest, are the most common land cover type, followed by Lowland Shrub, Forested Wetland, Agriculture, Grassland, Coniferous Forest, Mixed Deciduous/Coniferous Forest, Open Water, and Emergent/Wet Meadow types based on WISCLAND (1993) data. Forested cover types account for approximately 70% of the FRSF based on WDNR Forest Reconnaissance data. Northern Hardwoods is the most common cover type, comprising 44% of the forested acreage on the forest, followed by Aspen, Swamp Hardwoods, and Lowland Brush, and Fir-Spruce (Table 3.19). Map 2.2 represents cover types on the Forest. Although northern hardwood forest remains the most common forest cover type on the FRSF, the composition, structure, and patch sizes differ significantly from pre-settlement conditions. Hemlock and yellow birch reproduction is scarce or patchy here, as in many other parts of the state, and both of these species have declined in frequency in the forests of the FRSF and surrounding areas relative to presettlement conditions. Forest management on the FRSF has focused on improving the yield and timber quality of northern hardwood sawlogs through uneven-aged management.

The FRSF contains abundant wetlands, including hardwood swamps, conifer swamps, open peatlands, wet meadows,

**TABLE 3.15 PHYSICAL CHARACTERISTICS OF NAMED LAKES WITHIN THE FLAMBEAU RIVER STATE FOREST**

	Connors	Lake of the Pines	Swamp	Evergreen	Mason	Pelican	Champagne
Surface Area (acres)	429	273	248	200	190	32	7
Maximum Depth (feet)	82	39	8	25	39	16	12
Average Depth (feet)	38	17	6	12	17	9	
% Surface Area < 3 feet deep	7	7	6	9.45	6.4	7	
Shoreline Length (miles)	4.96	4.89	2.36	2.20	3.50	1.03	0.40
Public Frontage (miles)	1.30	4.24	1.84	0.05	0	0.85	0.28
Substrate	Boulder	--	--	--	--	--	--
	Rubble	--	--	--	--	--	--
	Gravel	xxx	xx	--	xx	x	--
	Sand	xx	xxx	xx	xx	xxx	xx
	Muck	x	x	xxx	xx	xx	xxx

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alder thickets, and small amounts of emergent marsh. Some of the FRSF lowland forested acreage, especially the swamp hardwoods cover type, is currently being actively managed for timber production. Several of the peatlands are large and undisturbed, with mostly undisturbed hydrology. White cedar swamps are currently uncommon on the FRSF, and white cedar regeneration appears to be lacking, as it is in many parts of the state, likely due to excessive browse of deer, hare and rodents. Ephemeral ponds are common and found dispersed throughout many of the forested areas of the FRSF.

Several historical factors influenced the structure and composition of the FRSF and surrounding landscape, including unregulated logging during the state’s “cutover” period, along with subsequent land clearing and uncontrolled wildfires, as well as the more recent 1977 windstorm event ( a “downburst”) that greatly affected approximately 1/3 of the total FRSF land area. Currently, this forested landscape is heavily dominated by sapling to pole-sized trees. Old growth successional stages of all forest types are rare and larger blocks of older forest with mature forest structure are uncommon. Many of the dominant species associated with the pre-settlement forest types are currently experiencing region-wide regeneration failure, likely due to a combination of factors, including heavy deer browse. Deer browse pressure on the FRSF and surrounding areas is

high, and evidence of heavy deer browse can be seen in many locations throughout the forest. Table 3.19 provides current acres of forest cover types on the forest.

The Forest continues to provide high quality northern hardwoods to the local and regional economy through uneven aged stand management. Some of the challenges faced by forest managers include: windthrow events, high deer populations, the reduction of fire as a management technique, and climate change. Each of these factors constrain forest management in some way; some in more obvious ways (deer browse) than others (climate change). Forest managers must be responsive and adaptive to changing conditions in resource management as opportunities and constraints become known.

**Current Management Designations**

Two of the three state-designated Wilderness Areas occur on the FRSF. “Wilderness” and “Wild Area” designations are from a land classification system that has since been replaced by a different set of land management classifications (Wisconsin Administrative Code NR 44).

*River Wilderness Area*

Designed to preserve, restore, and maintain the pristine character of the Flambeau River for future generations (Wisconsin

**TABLE 3.16 STREAM ORDER, SPECIAL DESIGNATIONS, AND FISHERY MANAGEMENT CLASSIFICATIONS FOR THE FLAMBEAU RIVER STATE FOREST**

		UPPER NORTH FORK FLAMBEAU RIVER NATURAL AREA (MILES)	MAIN UNIT		TOTAL (MILES)
			(ACRES)	(MILES)	
STRAHLER STREAM ORDER	1st	0.1		65.8	65.9
	2nd	0.5		28.9	29.4
	3rd	0.2		17.2	17.4
	4th	0.0		21.0	21.0
	Total	13.4		176.2	189.6
TROUT WATERS	Class 1	0.0		29.6	29.6
	Class 2	0.2		24.5	24.7
	Class 3	0.0		10.5	10.5
	Total	0.2		64.6	64.8
CHAPTER NR102	Outstanding Resource Water	12.6	200	11.7	24.3
	Exceptional Resource Water	0.0		72.7	72.7
FISHERY MANAGEMENT WATERS	Smallmouth Bass Waters	12.6		59.0	71.6
	Muskellunge Waters	0.0	1084	53.7	53.7
	Sturgeon Waters	0.0		53.7	53.7
	Walleye Waters	0.0	1129	0.0	0.0
	Natural Heritage Inventory Waters	12.8	1483	76.9	89.7

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Department of Conservation 1955). The wilderness area applies to all state owned lands within ¼-mile of the high water mark of the North and South Fork of the Flambeau River. Timber harvest within this zone is limited to existing pine plantations. Some pre-existing roads, trails, and recreational developments occur within the zone and remain open for public use. Many private developments along the river corridor have been removed and allowed to revert to a more natural condition since the state acquired the property, although there are several privately owned in- holdings located with this area.

#### *Big Block Wilderness Area*

This area is comprised of 1,354 out of a total if 1,600 total acres. This tract was formerly occupied by a landmark stand of old growth hemlock-hardwood forest representing the largest remaining state-owned old-growth remnant. In 1952, 370 acres of the Big Block, mostly in the River Wilderness Zone,

were designated as the Flambeau River Hardwood Forest State Natural Area (SNA). The remainder of this old growth stand was actively managed for timber production, including a Northern Hardwood management “demonstration area” east of CTH M. On July 4, 1977 most of Big Block was blown down by a major windstorm event.

Following this event, extensive timber salvage operations occurred here and elsewhere on the FRSF, including approximately 100 acres of the SNA. Only small residual pockets of old growth remain today. Most of the Big Block is currently dominated by a mix of hardwood saplings and poles, small patches of grassy openings, and upland brush.

#### *Wild Areas*

Wild areas share many characteristics of wilderness areas, including the predominance of natural forces or restoration possibilities. They will however, be subject to some management practices not permitted in wilderness areas, such as timber harvesting to retain the wild quality if the area. Public

**TABLE 3.17 TROUT CLASSIFICATION FOR STREAMS AND STREAM SEGMENTS WITHIN THE FLAMBEAU RIVER STATE FOREST**

	Stream Name	Trout Class	Length (Miles)
Upper North Fork Natural Area	Deer Creek	2	0.20
Main Unit	Bear Creek	1	1.83
	Butternut Creek	2	6.33
	Connors Creek	1	2.11
	Connors Creek	3	0.72
	Deer Creek	1	2.55
	Deer Creek	2	0.72
	Hackett Creek	1	3.95
	Hackett Creek	2	2.37
	Little Connors Creek	3	2.71
	Log Creek	2	8.13
	Mason Creek	3	1.38
	Ninemile Creek	2	0.97
	Pine Creek	3	1.52
	Price Creek	1	4.05
	Price Creek	2	2.08
	Rock Creek	2	2.26
	Unnamed Creek	1	15.10
	Unnamed Creek	2	1.66
Unnamed Creek	3	4.22	
<b>Total</b>			<b>64.86</b>

**TABLE 3.18 FISHERY MANAGEMENT CLASSIFICATIONS FOR WATERS WITHIN THE FLAMBEAU RIVER STATE FOREST**

Fishery Management Waters	Waterbody Name	Surface Area (Acres)	Stream Length (Miles)
Muskellunge	Big Falls Flowage	45.1	
	Connors Lake	410.0	
	Evergreen Lake	204.2	
	Flambeau River		44.2
	Flambeau River, South Fork		9.6
	Mason Lake	197.2	
	Smallmouth Bass	Butternut Creek	
Flambeau River			44.2
Flambeau River, South Fork			9.6
Log Creek			0.0
Pine Creek			1.5
Sturgeon	Flambeau River		44.2
	Flambeau River, South Fork		9.6
Walleye	Big Falls Flowage	45.1	
	Connors Lake	410.0	
	Evergreen Lake	204.2	
	Lake of the Pines	272.7	
	Mason Lake	197.2	
<b>Total</b>		<b>1,985.7</b>	<b>165.0</b>

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vehicles are not permitted. The purpose of these areas is to meet the public need to experience solitude and primitive recreation.

- Butternut Creek (3,100 acres)
- Bear Creek (2,072 acres)

*Wilderness Lake Zones and Wild Lake Zones*

These designations exclude motorized access, motorized watercraft, and recreational development, as well as limit timber harvest within 400 feet of shoreline areas. Wilderness Lakes exclude camping and have no road access. See the current master plan (WDNR 1980) for more information. Swamp and Bass Lakes are classified as wilderness lakes.

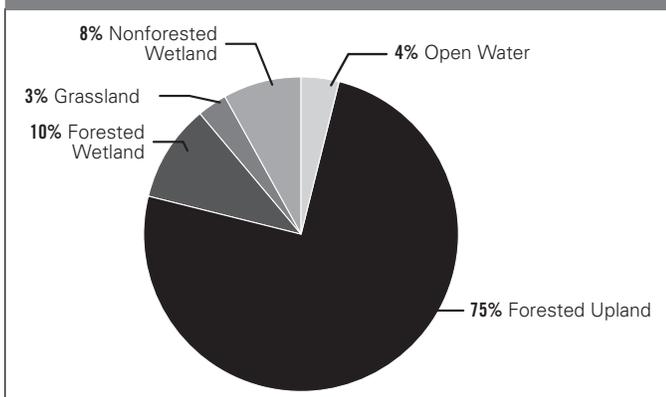
- Swamp Lake (744 acres)
- Bass Lake (708 acres)
- Hanson Lake (148 acres)
- Champagne Lake (28 acres)
- Mason and Evergreen Lakes (622 state-owned acres)

*State Natural Areas*

There are two State Natural Areas (SNAs) on the forest (also known as scientific areas), both of which were significantly impacted by the 1977 windstorm. They now serve as benchmarks for studying natural regeneration of old growth forest ecosystems following natural disturbance events – with and without salvage logging. Although the Natural Resources Board approved some salvage operations in both of these areas following the windstorm, roughly two-thirds of the SNA acreage were not harvested. The combined acreage of these areas is 526 acres, less than one percent of the property.

- Lake of the Pines Conifer-Hardwoods (156 acres)
- Flambeau River Hemlock-Hardwoods (370 acres). These SNAs were established to protect examples of relatively undisturbed old growth hemlock-hardwood forest.

**FIGURE 3.4 PERCENTAGE OF COVER TYPES ON THE FLAMBEAU RIVER STATE FOREST**



Source: Wiscland

**Forest Habitat Type**

The Forest Habitat Type Classification System (FHTCS) is one tool in conducting site assessments in forested stands. Based on the FHTCS the most common habitat type on the FRSF is AOCa/AH (Acer, Onocela, Caulophyllum/Acer, Hydrophyllum) and ACal/AHI (Acer, Caulophyllum, Impatiens/Acer, Hydrophyllum, Impatiens) on mesic, wet-mesic medium to rich sites. Much of the primary soil is either moderately well to poorly drained silt loam which has a habitat type of AHI. The more well drained sites of silt (to sandy) loam can have ATM (Acer, Tsuga, Maianthemum) habitat type. The water table is often “perched” which may result in more hydromesic habitat types. Wetland soils are quite common and include poorly drained muck and organic peats that would also have hydromesic habitat types (Map 2.1 Current Landcover). Habitat types help assess true site capability and help resource managers evaluate management alternatives (Kotar et al 2002).

**NATURAL COMMUNITIES**

The FRSF supports a diversity of natural communities which differ in size and quality. High quality natural communities listed in the Natural Heritage Inventory (NHI) database found in and around the FRSF and are listed in Table 3.20. While other community types are present, they were largely represented by stands that were too small, too highly disturbed, or too altered to warrant inclusion in the NHI database. General descriptions of the natural communities found within the FRSF can be found in the FRSF Biotic Inventory (WDNR 2008).

**THREATENED, ENDANGERED, AND SPECIAL CONCERN SPECIES**

**Plants**

The Wisconsin Natural Heritage Database tracks seven rare plant species on the Forest (Table 3.21). Mountain cranberry (*Vaccinium vitis-idaea* ssp. *minus*) is listed as State Endangered; the other five species are Special Concern. Heritage staff documented three of these rare species during recent field inventory, while the others have not been seen for decades.

*Swamp-pink*

Swamp-pink (*Arethusa bulbosa*) prefers neutral bog and fen mats with a mix of sedges, Ericads, and Sphagnum.

*Mingan’s moonwort*

Mingan’s moonwort (*Botrychium minganense*) is most often found in cool, mixed conifer-hardwood forests near Lake Superior.

*Blunt-lobe grape-fern*

Blunt-lobe grape-fern (*Botrychium oneidense*) prefers moist, often acid depressions in damp open forests.

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*Assiniboine sedge*

Assiniboine sedge (*Carex assiniboinensis*) prefers rich alluvial terraces along rivers.

*Sparse-flowered Sedge*

Sparse-flowered sedge (*Carex tenuiflora*) is found in open- to closed-canopy cold, wet, coniferous forests, usually on neutral to calcareous substrates.

*Swamp bedstraw*

Swamp bedstraw (*Galium brevipes*) is found in calcareous swamps and wet shores.

*Mountain cranberry*

Mountain cranberry (*Vaccinium vitis-idaea ssp. minus*) is the only Endangered plant to be documented on the FRSF. In this portion of the state, it has been found in open conifer swamps, although there are few documented occurrences.

**Animals**

The NHI Working List of animals documented within the forest includes: 10 birds, 2 dragonflies, 2 herpetiles, and 4 mussels. Table 3.22 provides a complete list of animals from the NHI database.

**Birds***Northern Goshawk*

The Northern Goshawk is a large forest-dwelling hawk generally associated with mature deciduous, coniferous, or mixed forests in the northern half of the state.

*Red-shouldered Hawk*

The Red-shouldered Hawk prefers larger stands of medium-aged to mature lowland deciduous forests, and dry-mesic to mesic forest with small wetland pockets.

*Black-throated Blue Warbler*

Black-throated Blue Warbler is found in dense hardwood or coniferous undergrowth within extensive stands of mesic deciduous or mixed forests of mature sugar maple, basswood, yellow birch and hemlock.

*Cerulean Warbler*

Cerulean Warblers occur most frequently in large stands of unfragmented, mature hardwood forest, in both upland and lowland habitats. Although at some locations its presence has been strongly associated with large canopy oaks, they are not dependent on the presence of oaks.

*Cape May Warbler*

Cape May Warbler breeds in northern Wisconsin, primarily in stands of mature boreal conifers such as spruce and fir. Both upland and lowland conifer forests may be used, and they occasionally occupy mature spruce plantations.

*Bald Eagle*

Bald Eagles prefer large lakes and rivers with nearby tall pine trees for nesting. Favored wintering and roosting habitat includes wooded valleys near open water and major rivers from December through March.

*Connecticut Warbler*

The Connecticut Warbler prefers mature, multi-layered pine stands, particularly jack pine, and occasionally tamarack-pine stands with a dense hardwood understory. They also breed in boggy stands of swamp conifers composed of black spruce and tamarack.

*Osprey*

Osprey, a fish-eating raptor, prefers large trees in isolated areas in proximity to large areas of surface water, large complexes of deciduous forest, coniferous forest, wetland, and shrub communities.

TABLE 3.19 ACRES OF COVER TYPE

Cover Type	Acres 1970	Acres Current	Percent of Total Acres
Aspen	13,668	16,536	18
White Birch	517	468	1
White Cedar		654	1
Balsam Fir		110	0
Fir Spruce	3,974	2,444	3
Hemlock	4,688	2,544	3
Red Maple		2,424	3
Northern Hardwoods	34,089	35,042	39
Red Pine	1,128	835	1
White Pine	1,299	1,319	1
Black Spruce	2,419	4,090	5
Swamp Conifer	1,366	1,871	2
Swamp Hardwoods	5,448	7,673	8
White Spruce		273	0
Tamarack	684	2,819	3
<b>Total</b>	<b>69,280</b>	<b>79,267</b>	<b>88</b>
Non Forest Type	Acres 1970	Acres Current	Percent Of Total Acres
Water		452	1
Lowland Brush - Alder		5,894	7
Minor Stream		1,632	2
Right of Way		351	0
Upland Brush		1,389	2
<b>Total</b>		<b>9,367</b>	<b>12</b>

Source: WDNR Forest RECON database, August, 2008. Classifications <100 acres not displayed

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*Louisiana Waterthrush*

Louisiana Waterthrush breeds along rocky, high-gradient streams within relatively large, intact deciduous or mixed forests, primarily in the southern 2/3 of the state. It is sometimes found in Floodplain Forest near streams.

*Swainson's Thrush*

Swainson's Thrush breeds in northern Wisconsin, primarily in coniferous or mixed deciduous-coniferous forests, nesting in understory shrubs or saplings.

**Dragonflies**

*Extra-striped Snaketail*

Extra-striped snaketail (*Ophiogomphus anomalus*), a dragonfly, has been found locally in medium to large fast, clean, cool to warm streams.

*Pygmy Snaketail*

Pygmy snaketails, (*Ophiogomphus howei*), have been found in small to large, clean, fast-flowing warm streams with gravel-

sand substrates. Adults apparently forage and perch on the stream-side forest canopy.

**Reptiles**

*Wood Turtle*

Wood Turtle (*Clemmys insculpta*), a turtle listed as Threatened in Wisconsin, prefers deciduous forests, shrub swamps, and open meadows along moderate- to fast-moving streams and rivers. Egg-laying occurs in open, often sandy areas, during the month of June. Eggs hatch in late Summer.

*Northern Ringneck Snake*

Unlike most snakes, the northern ringneck (*Diadophis punctatus edwardsii*) occurs in moist deciduous forests and is fossorial (lives underground). Its diet consists of earthworms, beetles, salamanders, frogs, and other small snakes.

**Mussels**

*Salamander Mussel*

Salamander mussel (*Simpsonia ambigua*) is a State Threatened species that occurs in both the Mississippi River drainage and the Lake Michigan drainage. In Wisconsin, this species prefers mud, silt or sand substrates directly beneath medium to large-sized rocks and undercut ledges, where its host, the mudpuppy frequents and is considered a microhabitat specialist.

*Elktoe*

Elktoe (*Alasmidonta marginata*), a State Special Concern mussel, is found in various-sized streams with flowing water, sand, gravel or rock substrates that are stable. The known host

**TABLE 3.20 COMMUNITY TYPES ON THE FRSF**

Community Type
Black Spruce Swamp
Emergent Marsh
Floodplain Forest
Forested Seep
Lake-Deep, Very Soft, Seepage
Lake-Shallow, Soft, Seepage
Lake-Soft Bog
Muskeg
Northern Dry-mesic Forest
Northern Mesic Forest
Northern Sedge Meadow
Northern Wet Forest
Northern Wet-mesic Forest
Open Bog
Poor Fen
Tamarack

Source: FRSF Biotic Inventory 2008.

**TABLE 3.21 NHI WORKING LIST PLANTS DOCUMENTED WITHIN THE FLAMBEAU RIVER STATE FOREST**

Common Name	Scientific Name	Year Last Observed
Swamp-pink	<i>Arethusa bulbosa</i>	2006
Mingan's Moonwort *	<i>Botrychium minganense</i>	1979
Blunt-lobe Grape-fern *	<i>Botrychium oneidense</i>	1979
Assiniboine Sedge	<i>Carex assiniboinensis</i>	2000
Sparse-flowered Sedge	<i>Carex tenuiflora</i>	2000
Swamp Bedstraw	<i>Galium brevipes</i>	1963
Mountain Cranberry	<i>Vaccinium vitis-idaea</i> ssp. <i>minus</i>	2006

Source: FRSF Biotic Inventory 2008

\*These species were found just outside of the FRSF boundary.

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fishes include five widespread species including redhorse and sucker species and rockbass.

#### *Purple Wartyback*

Purple wartyback (*Cyclonaias tuberculata*), a mussel listed as Endangered in Wisconsin, is now restricted to large streams in the northwestern part of the state. It prefers a stable substrate containing rock, gravel and sand in swift current. Known hosts include bullhead and catfish species.

#### *Round Pigtoe*

Round pigtoe (*Pleurobema sintoxia*) is a State Special Concern mussel. In Wisconsin, this species occurs only in clean water of small streams to large rivers on stable substrate. The known host fish include a number of cyprinid species.

#### **Mammal**

##### *American Marten*

American martens live in mature, dense conifer forests or mixed conifer hardwood forests, preferring woods with a mixture of conifers and deciduous trees including hemlock, white pine, yellow birch, maple, fir and spruce. The presence of large limbs, snags, and coarse woody debris provide important prey, protection and den sites. Although they have not been documented on the FRSF to date, they are known to occur immediately to the north of the property on the Chequamegon-Nicolet National Forest.

#### **Species of Greatest Conservation Need**

Numerous Species of Greatest Conservation (SGCN) from the Wisconsin Wildlife Action Plan (WDNR 2006) are known from the North Central Forest, including 10 mammal, 53 bird, 7 herp-

**TABLE 3.22 NHI WORKING LIST ANIMALS DOCUMENTED WITHIN THE FLAMBEAU RIVER STATE FOREST**

Common Name	Scientific Name	Year Last Observed	State Status
<b>Birds</b>			
Northern Goshawk	<i>Accipiter gentilis</i>	2006	SC/M
Red-shouldered Hawk	<i>Buteo lineatus</i>	1980	THR
Swainson's Thrush	<i>Catharus ustulatus</i>	2000	SC/M
Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	2000	SC/M
Cerulean Warbler	<i>Dendroica cerulea</i>	2001	THR
Cape May Warbler	<i>Dendroica tigrina</i>	2000	SC/M
Bald Eagle	<i>Haliaeetus leucocephalus</i>	2007	SC/P
Connecticut Warbler	<i>Oporornis agilis</i>	2000	SC/M
Osprey	<i>Pandion haliaetus</i>	1992	THR
Louisiana Waterthrush	<i>Seiurus motacilla</i>	2002	SC/M
<b>Dragonflies</b>			
Extra-striped Snaketail	<i>Ophiogomphus anomalus</i>	1995	END
Pygmy Snaketail	<i>Ophiogomphus howei</i>	2002	THR
<b>Reptiles and Amphibians</b>			
Wood Turtle	<i>Clemmys insculpta</i>	2005	THR
Northern Ringneck Snake	<i>Diadophis punctatus edwardsii</i>	2000	SC/H
<b>Mussels</b>			
Elktoe	<i>Alasmidonta marginata</i>	1990	SC/H
Purple Wartyback	<i>Cyclonaias tuberculata</i>	1992	END
Round Pigtoe	<i>Pleurobema sintoxia</i>	1990	SC/H
Salamander Mussel	<i>Simpsonaias ambigua</i>	1990	THR

Source: FRSF Biotic Inventory 2008

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tile, and 10 fish species. Several of these species have been recorded on the FRSF, and several others have the potential to occur there (Table 3.23). Species in bold are known to occur on the Flambeau River State Forest, and several others are potentially present. See the Wisconsin Wildlife Action Plan (WDNR 2006d) for more information on Species of Greatest Conservation Need and their habitats.

### Opportunities for Biodiversity Conservation

The best examples of rare and representative native ecosystems, aquatic features, and sensitive species populations have been identified by WDNR as opportunities for biodiversity conservation (WDNR Biotic Inventory 2008). These include the largest and potentially most viable populations of plants and animals from the NHI Working List known to occur on the forest. Priority natural community examples are: 1) the least modified from a natural condition, 2) occur in a context which is compatible with maintaining that community over time, and 3) represented by relatively large stands. Although few rare natural community types are known to occur on the forest, both rare and representative community types are needed to manage for biological diversity (e.g., Northern Mesic Forest as a type is abundant throughout northern Wisconsin, but old growth stands, stands dominated by conifers, and stands constituting large patches are now rare and may continue to decline).

#### *Landscape Level Priorities*

The FRSF presents opportunities to maintain large blocks of contiguous forest, with embedded, undeveloped lakes, streams, and wetlands, that are representative of the natural community types known from this region.

#### Old-growth Forests

The WDNR has identified a need to conserve, protect, and manage old-growth forests (WDNR 2004, WDNR 1995). Old-growth forests can support high densities of certain forest herbs, as well as certain assemblages of birds and other animals, fungi, and bacteria species that are scarce or absent elsewhere. Old-growth forest management is one important facet of providing the diverse range of habitats needed for sustainable forest management (WDNR 2006b).

Older forests, for example those with trees older than 120 years, are rare in the state, especially upland forests with structural attributes such as trees with a range of diameter sizes including very large sizes, large-diameter coarse woody debris, abundant large dead snags and den trees, and pit-and-mound micro-topography. Although the FRSF is the second-largest state-owned property in Wisconsin and is located in one of the most heavily forested portions of the state, much of the forested lands of the FRSF and surrounding land are represented by young and medium-aged stands; these stands are often dominated by early successional species such as

aspen within a mosaic of relatively small patches providing ample habitat for species associated with such vegetation (this is almost the reverse of the historical condition). In contrast, older, less disturbed mesic forests, especially in larger patches used by certain bird assemblages and other animal species, are not well represented in this landscape. The FRSF offers excellent opportunities to manage specific areas for older forest within a context of outstanding aquatic features, intact and relatively undisturbed wetlands, and vast public landholdings. With its large, mostly contiguous forested acreage, the FRSF could provide for a range of forest successional stages and patch sizes, as well as the ability to practice a wide spectrum of management strategies ranging from more intensive harvest activities designed to enhance timber production to establishing new benchmark areas for studying natural processes.

There could be opportunities to practice non-traditional techniques such as "Managed Old-growth" including experimental manipulations to accelerate old-growth characteristics (two WDNR-supported studies are currently in progress on the FRSF for achieving this goal). Table 3.24 contains acreages for major cover types on the FRSF with ages 100 and higher, along with the percent of the total acreage for that cover type on the forest. For northern hardwoods, the WDNR Old-growth Handbook (WDNR 2006) contains more detailed criteria for old-growth. Although these criteria are difficult to apply directly to forest reconnaissance data, there are over 4,000 acres of northern hardwoods in the 15" and higher diameter class with density in classes 2 and higher, suggesting there are stands with opportunities for old-growth management. As age is only one consideration regarding old-growth management, a more detailed analysis would be helpful. The Biotic Inventory (WDNR 2008) highlights several sites that may offer opportunities for developing old-growth.

The FRSF presents opportunities to maintain or re-establish ecological connectivity between ecologically significant areas identified within the landscape (WDNR Biotic Inventory 2008). During the planning process, consideration should be given to forest patterns and processes, as well as the context of ecologically important areas and how stands function within the regional landscape. For example, the FRSF contains a rich mosaic of wetlands, streams, and lakes in a mostly remote, forested context, so forest and wetland /riparian connections will need to be recognized during planning efforts. Forest fragmentation should also be avoided wherever possible to preserve the ecological integrity of the forest.

#### *Community Level Priorities*

##### Northern Mesic Forest

Species composition of mesic forests in Wisconsin has changed dramatically. In most cases, as with the FRSF, mixed coniferous-deciduous types have lost much of their coniferous component (Schulte et al. 2007, WDNR 1995). Reproduction of

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hemlock and white pine in mesic forests, as well as northern white cedar in wet-mesic forests, is lacking in most areas of the Forest. In addition, yellow birch has decreased. There may be opportunities to restore these communities where a seed source still exists. Additional deer control may be needed to successfully regenerate some species, such as hemlock. Older mesic forests are uncommon, and there are good opportunities on the FRSF to develop Northern Mesic Forests with old-growth characteristics.

#### Northern Dry-mesic Forest

A rare type on the Forest, high-quality examples of Northern Dry-mesic Forests are limited to a few locations on the FRSF. These stands contain mature trees, conifer dominance, and areas of high crown closure. These sites offer opportunities to develop older forests of an uncommon type with ecological connections to the surrounding forest and the Flambeau River. They may also provide a seed source for the potential re-establishment of the now missing pine component in some of the adjoining mesic forests.

#### Northern Wet-mesic Forest

The FRSF and surrounding areas contain good examples of the Northern Wet-mesic Forest community; forested wetlands dominated by northern white cedar. This natural community type is known to harbor rare plant species and should be given special consideration during planning and management activities. Most of the stands documented on the FRSF have been heavily impacted by deer browse and have little cedar reproduction, but otherwise retain good structure and representative species composition.

#### Forested Seep

Several spring seeps were examined in the FRSF, mostly in the southernmost portion of the forest, and in places near the Flambeau River and Butternut Creek. These areas sometimes occur near the bases of steep slopes or bluffs. Seepage areas, with active discharges of groundwater, sometimes host uncommon or rare plant and animal species. They also contribute to high water quality of the streams they feed. These features are highly susceptible to damage, and land use practices that lead to soil or hydrological disturbance should be avoided. Recharge areas need to be identified and managed carefully if the springs and seeps are to remain functional.

#### Ephemeral Ponds

Also known as vernal pools, Ephemeral Ponds are important refugia and breeding sites for a wide range of amphibian and aquatic invertebrate species within forested landscapes. These ponds can exhibit high macroinvertebrate richness and harbor invertebrates known only from these specialized habitats. Whenever possible, Ephemeral Ponds should remain embedded within forested habitats. To protect these habitats, the ponds should not be isolated by clear cutting around them,

their canopy coverage should be maintained, and efforts should be made to minimize or prevent negative impacts to hydrology by limiting road, ditch, or dike construction. The timing of management activities around ephemeral ponds can be critical. Ephemeral Ponds can be difficult to identify in the winter when tree marking often occurs, so additional provisions may need to be made to protect these areas during harvest. Finally, places with known concentrations of Ephemeral Ponds may warrant special consideration during the master planning process to provide landscape-level protection to this resource within the larger forested context.

#### Forested and Non-forested Wetlands

Wetlands are abundant throughout the study area and include several forested and non-forested types. Many of them are in good condition, and they support a disproportionately high percentage of the rare species observed on the Forest. The FRSF offers several opportunities to protect wetlands within a mosaic of forest and aquatic communities. Some of the best quality wetlands could be considered for special management and protection designation, particularly where sensitive (including rare) species have been documented.

#### Lakes

The undeveloped lakes within the FRSF warrant continued protection. The forest contains good examples of several lake types. Undeveloped examples of these lakes are becoming increasingly rare throughout the region, and they are important for several plant and animal species. Hansen Lake and its associated lakes and ponds have fluctuating shorelines that could harbor rare plants. Planners could use a landscape approach and consider buffering undeveloped lakes on the Forest further by embedding them within special management areas of intact native communities, rather than applying a set distance buffer. Care will be needed to avoid introduction of aquatic invasive species to these waterbodies.

#### Flambeau River

The free-flowing stretches of the river provide important habitat for many rare animal species, and management of lands adjacent to the river will have important effects on water quality. Many of the areas along the river slopes contain mature forests, as well as forested seeps that can harbor rare plant assemblages. A river "buffer" that accounts for steepness of slope, soil type, vegetative cover, and the habitat needs of sensitive species that are, or could be, present would be most effective for protecting species associated with the river.

### **THREATS TO NATURAL COMMUNITIES, AQUATIC SYSTEMS, AND RARE SPECIES**

The FRSF and surrounding areas are part of an extensive and contiguous forested landscape with low human population, low road density and large acres of public land. This area and the state forest offer the potential to continue management while

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TABLE 3.23 SPECIES OF GREATEST CONSERVATION NEED OCCURRING IN THE NORTH CENTRAL FOREST ECOLOGICAL LANDSCAPE

	Species with a high degree of probability of occurring in this Ecological Landscape	Species with a moderate degree of probability of occurring in this Ecological Landscape
<b>Mammals</b>	<b>Gray Wolf</b>	Moose
	Northern Flying Squirrel	Eastern Red Bat
	Water Shrew	Northern Long-eared Bat
	Woodland Jumping Mouse	
	Silver-haired Bat	
	Hoary Bat	
	American Marten	
<b>Birds</b>	<b>American Bittern</b>	Canvasback
	Trumpeter Swan	Sharp-tailed Grouse
	Lesser Scaup	Solitary Sandpiper
	<b>Osprey*</b>	Black Tern
	<b>Bald Eagle</b>	<b>Brown Thrasher</b>
	Northern Harrier	<b>Cerulean Warbler*</b>
	<b>Northern Goshawk*</b>	<b>Connecticut Warbler*</b>
	<b>Red-shouldered Hawk*</b>	<b>Bobolink</b>
	Spruce Grouse	Rusty Blackbird
	American Woodcock	
	<b>Black-billed Cuckoo</b>	
	<b>Whip-poor-will</b>	
	Black-backed Woodpecker	
	Olive-sided Flycatcher	
	<b>Least Flycatcher</b>	
	Boreal Chickadee	
	<b>Veery</b>	
	<b>Wood Thrush</b>	
	<b>Golden-winged Warbler</b>	
	<b>Black-throated Blue Warbler*</b>	
Canada Warbler		
Red Crossbill		
<b>Herptiles</b>	<b>Wood Turtle*</b>	Mudpuppy
	Boreal Chorus Frog	Pickerel Frog
	Four-toed Salamander	
	Mink Frog	
<b>Fishes</b>	Lake Sturgeon	Greater Redhorse
	Gilt Darter	
	Longear Sunfish	

Source: WDNR Wildlife Action Plan 2006

\* Special Concern Species and Threatened Species

Bold Type indicates species found on Flambeau River State Forest

\*\* In addition to these species, Louisiana Waterthrush, another bird SGCN found here at the extreme northern edge of its breeding range, was documented along high gradient streams in the FRSF.

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considering ecological opportunities to restore and enhance biodiversity at the landscape level. Some potential and existing threats include ecological simplification, fragmentation and invasive species.

### Ecological Simplification

Ecological simplification refers to a loss of species and structural diversity and an increased dominance of fewer species. The increase in sugar maple dominance that is occurring in northern hardwood forests is an example of simplification as is the lack of features like large woody debris and tip-up mounds. Sugar maple is outcompeting conifers and other species that were common in the historic forests on the FRSF. Regeneration of hemlock and yellow birch are problematic in many cases. Strict application of the single-tree selection method is probably a factor that increases sugar maple's dominance (Crow et al. 2002). White tailed deer herbivory can give sugar maple a competitive advance and contributes to the loss of some native plants, some conifer species and even hardwood species. One example of a heavily impacted species is Canada yew, a formerly widespread evergreen shrub that provided structural diversity on the FRSF. These changes occur at the stand level, but have cumulative effects at broader spatial scales.

### Fragmentation

Fragmentation is a term used to describe certain kinds of landscape structure. "Permanent fragmentation" refers to long-term conversion of forest to urban, residential or agricultural uses. "Habitat fragmentation" is defined as a disruption of habitat continuity caused by human or natural disturbance creating a mosaic of successional stages within a forest tract. As Wisconsin's second-largest state property located within a largely unfragmented landscape, the FRSF provides unique opportunities for management. As many privately owned

forested areas in the state become parcelized and developed, the FRSF represents an important opportunity to maintain an intact forested landscape, serving critical functions on a state-wide level. To maintain the ecological integrity of this important area, it will be critical for planning and management efforts to consider possible fragmentation effects when planning developments, building roads, and acquiring new parcels or inholdings. Additionally, many species of wildlife, including forest interior birds (e.g. Martins and Goshawk) and wide ranging mammals depend on larger blocks of land.

### Invasive Species

Terrestrial invasive plant species occur on the FRSF but are not yet at high levels. Care needs to be taken to prevent the spread and introduction of invasive species. In forested community types, glossy and common buckthorn (*Rhamnus frangula* and *R. cathartica*), nonnative honeysuckles (*Lonicera* spp.), garlic mustard (*Alliaria petiolata*), and Dame's rocket (*Hesperis matronalis*), already pose problems. These species may initially colonize disturbed areas and edges, but once established, can continue to invade surrounding habitats, including forests. Along roads and in open or partially forested areas, spotted knapweed (*Centaurea biebersteinii*), wild parsnip (*Pastinaca sativa*), leafy spurge (*Euphorbia esula*), Canada thistle (*Cirsium arvense*), and common tansy (*Tanacetum vulgare*) are present. A native carex, Penn sedge (*Carex pennsylvanica*), behaves like an invasive in the region. It frequently forms monotypic mats after disturbance (i.e. timber harvests) crowding out native understory plants and tree seedlings. Human travel and recreation pursuits are major vectors for the spread of invasives.

In aquatic and wetland ecosystems, Eurasian water milfoil, curly pondweed (*Potamogeton crispus*), rusty crayfish (*Orconectes rusticus*), giant/common reed (*Phragmites australis*), purple loosestrife, and reed canary grass are the primary problem species. Watercress (*Nasturtium officinale*) is also present.

The invasion of forests by European earthworms of the family Lumbricidae is a concern in this Landscape. While native earthworms were absent from the Landscape after the last glaciation, exotic earthworms have been introduced since Euro-American settlement, primarily as discarded fishing bait (Hendrix and Bohlen 2002, Hale et al. 2005). Exotic earthworms can have dramatic impacts on forest floor properties by greatly reducing organic matter (Hale et al. 2005), microbial biomass (Groffman et al. 2004), nutrient availability (Bohlen et al. 2004, Suarez et al. 2004), and fine-root biomass (Fisk et al. 2004). These physical changes in the forest floor reduce densities of tree seedlings and rare herbs (Gundale 2002) and can favor invasive plants (Kourtev et al. 1999). In a study of 51 Northern Wisconsin forest stands, most in the surrounding area, Wiegmann (2006) found that shifts in understory plant community

**TABLE 3.24 MAJOR COVER TYPES ON THE FRSF > 100 YRS**

Age	Age 100+ (Acres)	% Total Acres
Black Spruce	1030	25%
Cedar	468	75%
Hemlock	1431	65%
Northern Hardwoods	424	13%
Swamp conifer	71	4%
Swamp Hardwoods	1554	20%
Tamarack	937	33%
White Pine	769	58%

Source: WISFIRS 2008

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composition due to exotic earthworms were more severe in stands with high white-tailed deer densities.

Localized efforts in the Upper Chippewa Area have contributed to increased awareness of invasive species. Several federal, state, tribal and other organizations have conducted invasive inventories and map occurrence information. The Upper Chippewa Cooperative Weed Management Association was established a couple years ago. This group of agency and private individuals help to work more effectively across jurisdictional boundaries by advancing action in control and awareness.

**WILDLIFE RESOURCES**

The FRSF property supports a broad range of wildlife habitats; from large blocks of mature hardwood forest with embedded ephemeral ponds to younger forests, grass openings, open wetlands, kegs, bogs, lakes, streams and the Flambeau River. As a result, a diversity of species are found here. Wildlife resources within the property are similar to the larger region surrounding the FRSF.

On the forest and in the region, deer densities are high, ranging from 23 to 31 deer per square mile. Deer density goals are not determined by the Master Plan, but are set through the statutory review process, and are updated every 3-5 years. High deer densities are well-documented in the state and present many risks to the long-term health of northern forests. Pre-European settlement deer densities in northern Wisconsin were thought to range between 5 and 10 deer per square mile (Alverson et al. 1988). Higher densities in the FRSF have already led to damage to understory plants, tree reproduction, and the deterioration of the habitat for birds and small mammals. Managing deer numbers will be important to achieving forest management objectives.

Black Bear is another big game species found on the property. Bear densities in Sawyer, Rusk and Price Counties are some of the highest in the State. They have adapted well to the agriculture/forest mix in the region and surrounding the Forest.

Timber Wolves are present throughout the property. Nine known wolf packs exist on, or within, five miles of the property.

Small game species commonly found in the region are also present on the property. These include the gray squirrel, snowshoe hare, and cotton tail rabbit. Upland game birds on the property are ruffed grouse, woodcock and wild turkey. Furbearers include; beaver otter, muskrat, mink, fisher, raccoon, red and grey fox, coyote and bobcat.

The property supports a host of other resident and seasonally present wildlife species that are very important to the ecological and social values of the property. These include resident

and neotropical migrant birds and nesting raptors including: Bald Eagle, Osprey and Northern Goshawk. Owls include: Great Horned, Northern Barred, Long-eared and Northern Saw-whet. Small mammals, both observed and documented include: voles, shrews, mice, ground squirrels, northern flying squirrel and bats.

Several species of herptiles are on the forest, including; western fox snake, northern water snake, northern ringneck snake, common snapping turtle, spiny soft-shelled turtle, wood turtle, Blanding's turtle, bull frog, wood frog, green frog, grey tree frog, mink frog, four-toed salamander, blue-spotted salamander, red-backed salamander and mudpuppy.

**Habitat Needs and Capabilities**

1. Perpetuate and maintain rotational blocks of early successional forests (including aspen) and habitat types which mimic structural attributes of early successional habitats (e.g. shrub-carr and alder thickets).

Wildlife Species of Greatest Conservation Need associated with this structural/seral stage include: the Golden-winged Warbler, Veery, Woodcock and Northern Goshawk.

2. Develop and maintain large blocks of mature and multi-story mesic and wet-mesic forests and northern hardwood swamps. Provide stands with ample canopy gaps, and/or dense, shrub sapling patches including stands with a complex understory throughout the forest matrix.

Wildlife species of greatest conservation need associated with the north-central forest landscape, this structural/seral stage, (and) the FRSF include the wood thrush, black-throated blue warbler, Canada warbler, Olive-sided Flycatcher and Northern Goshawk.

3. Maintain through proper silvicultural practices and BMPs the structural and functional integrity of all wetlands (permanent and ephemeral) including their riparian zones within the Forest and its associated drainages.

**RECREATIONAL FACILITIES AND USE**

The forest provides many recreational opportunities in a wild and remote setting. River recreation remains one of the primary draws for recreationists, along with ATV-riding, hunting, and fishing. The forest provides a range of rustic camping experiences, including river campsites and two campgrounds, as well as a day-use area and designated beach (Map 2.23: Current and Planned Recreation Facilities).

**PROPERTY ASSESSMENT****Land Based Recreation***Camping*

There are a variety of camping opportunities available on the Forest ranging from rustic campgrounds to primitive campsites (Table 3.25). None of the sites are reservable. Rustic campgrounds are traditional campgrounds which have minimal facilities such as hand pumped water, pit toilets, fire rings, and picnic tables. There is no electricity or showering facility.

*Campgrounds*

Connors Lake is open from Memorial Day Weekend through Labor Day and provides 29 sites. Lake of the Pines is open April 15 – December 15 and provides 30 sites. Each campground has a footpath allowing access to each of the lakes and to a short nature trail. Both have beaches. Vehicle admission stickers and self-registration are required. Campsites are designed to accommodate a single family or a group of up to 6 people. Youth groups (members of an established organization) must be accompanied by one adult with not more than 10 total persons permitted at designated campsite. A dump station is available near the FRSF Headquarters. There are mobility impaired access campsites available at both campgrounds. Table 3.26 lists occupancy rates from 2001-2005 on the forest.

*Firewood*

Firewood is not available at the campgrounds. Campers are allowed to bring firewood only if the source is within a 50-mile radius of the campground in order to minimize likelihood of bringing the Emerald Ash Borer and other pests or diseases into Wisconsin's forests. Local vendors offer firewood for sale and vendor locations are posted at kiosks in the campground. Cutting live trees and brush in the campground is prohibited.

*Backpack Camping*

Backpack camping is allowed forest-wide with some exceptions. There is no fee associated, however special camping permit registration is required. Unlike canoe camping, there are no established camping areas. Campers are allowed to camp at any location out of sight of established trails. Camping is not allowed within the wilderness, wild or scientific areas, on Bass or Swamp Lakes, or within intensive recreation areas such as the established campgrounds or picnic areas.

*Hunting Camps*

An additional and somewhat unique primitive camping opportunity is offered during the November nine-day gun deer season. Deer/hunting camps have been a tradition on the state forest for decades. For some families and hunting parties, hunting camps have provided sport and enjoyment for generations of hunters. Hunter camping is allowed only along certain woods roads. Tents or camper units are allowed. Permits for 'special camping' are issued to hunters and are available at the state forest office. There is no fee associated with this activity. The deadline to apply for the permit is October 31. Permits are

valid for the Saturday prior to the opening date until the end of the 9-day deer gun season.

*Sturgeon Fishing Camping*

This is another unique camping opportunity offered at the Flambeau in which anglers out for the fall sturgeon season are allowed to camp at the Hervas Landing. There is no fee associated with this activity; however a special camping permit is required. Both tents and trailers are allowed.

*Day Use Areas**Connors Lake Picnic Area*

Connors Lake Picnic Area is a well developed facility with a 300-foot swimming beach with shallow water providing an ideal play area for children. A boat landing, paved parking, fishing, beach-front benches, drinking water, volleyball court, horseshoe pits, pit toilets, and handicapped accessible facilities are available. The picnic area includes a reservable shelter building with electricity. An adjacent area is set aside as a pet exercise area. Connors Lake has very high water quality with some of the best water clarity of any lake in Wisconsin. Better separation of motorized boating or mooring from beach activity is desirable. A daily or annual park sticker is required for use of this facility.

*Non-Motorized Trails**Flambeau Hills Trail (Ski, Hike, Bike)*

The forest is open to cross-country skiing and has one trail, the Flambeau Hills Trail, groomed for both traditional and skate skiers. Fourteen miles of trail are maintained and an Adirondack picnic shelter is provided. The rolling terrain provides for varying degrees of skiing difficulty, with several bridge crossings and occasional views of the river. In summer the trail is shared by hikers and mountain bikers. There may be opportunity to designate alternate winter and summer uses, as there are few designated hiking trails on the forest. A State Forest trail pass is required and a self-registration station is located at each trailhead. Parking at the southern end of the trail is located off HWY W, one half mile east of the forest headquarters. There is also parking near the northern end of the trail off from HWY 70 and Snuss Blvd. Table 3.27 lists trail and trail miles on the forest.

*Mountain Biking*

Mountain biking in the FRSF occurs mainly on the Flambeau Hills Trail. The wide nature of the trail enables it to be shared with hikers. Mountain biking seems to be decreasing somewhat in Wisconsin but is popular in the region. Bikes are not allowed on developed nature trails.

*Hiking*

Hiking is available throughout the forest on forest roads and hunter-walking trails, although there are no designated hiking

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trails per se. Hiking is prohibited on the Flambeau Hills Trail once it is groomed for the ski season.

**Hunting and Trapping**

Hunting for big and small game is a popular time-honored tradition and public use of this property. The FRSF is a popular hunting destination, attracting deer, bear and grouse hunters from around the country. The FRSF offers abundant opportunities for small and big game hunting and trapping. The diverse landscape of different forest types, lakes and wetlands currently found on the property provides important habitat for waterfowl, whitetail deer, black bear, ruffed grouse and other game species. This large forest tract provides ample opportunity for a remote hunting experience, a popular trend within the hunting community.

**Hunter-Walking Trails**

Habitat for early successional species, including ruffed grouse, is managed at locations throughout the forest. A network of hunter-walking trails is maintained for use during the fall hunting season. The Flambeau Hills Trail doubles for this purpose and additional trails can be found in several locations. Maps of the hunter-walking trails are available on the FRSF web site.

**Horseback Riding**

Although there are no trails or parking areas specifically designated for horseback riding, it is allowed on the snowmobile/ATV trail when they are groomed. Horseback riding is also allowed on all State Forest roads.

*Motorized Recreation*

**Flambeau River State Forest ATV Trail**

There is a total of 38 ATV trail miles on the Forest (Map 2.23). The trail is open for ATV use from May 15-November 15. The trail provides access to the Tuscobia State Trail which then connects with the CNNF’s Deadhorse Run trail system, providing nearly 170 miles of ATV trail. The Forest’s ATV trail ends near County highway M in the southern third of the forest. An additional 2-3 miles of trail would be needed to connect to Rusk County Trails south of the property boundary and another 2-3 miles would be needed to connect to the Price County trails east of the property boundary. Local businesses offer camping, lodging facilities and services. Parking is available at Fisherman’s Landing, Co. Hwy. M, Flambeau Hills, and Dix Dox.

**Snowmobile Trails**

There are 55 miles of trail on the state forest. This trail provides access to the Tuscobia State Trail and the Sawyer County trail system to the north and the Price and Rusk County trail systems to the south. Day parking is available for vehicles with trailers at the Flambeau Hills Trailhead and Dix Dox.

**Cycles, 4x4s, and Other Licensed Motor Vehicles**

The property does not have any trails designated for this use. Vehicles meeting street-legal requirements may operate on open roads (including logging roads) that are not bermed, gated or signed as closed. Administrative Code NR45 regulates motorized use on the Forest.

**Parking Areas**

There are numerous parking areas throughout the Forest. Three parking lots are designated as fee areas (see Table 3.28).

**Wildlife Viewing**

The Flambeau River State Forest is listed as stop #71 on the Great Wisconsin Birding and Nature Trail system. Sponsored by the Endangered Resources Fund, the Wisconsin Coastal Management Program, the Wisconsin Bird Conservation Initiative, and local chambers of commerce, the program provides a comprehensive guide to wildlife viewing opportunities and travel amenities in the Lake Superior Northwoods Region. Information is available on-line at: <http://www.wisconsinbirds.org/trail>.

*Scenic Areas*

**Little Falls-Slough Gundy**

This popular location provides a spectacular view of the rugged whitewater of the South Fork of the Flambeau River. The scenery includes large boulders and rushing water with the peaceful elegance of a pine forest background amidst the sound of roaring rapids. It provides for white water canoeing and kayaking experiences. Maintained trails are provided both to Little Falls and Slough Gundy.

**TABLE 3.25 CAMPING OPPORTUNITIES ON THE FRSF**

	NUMBER OF CAMPSITES	TYPE	AMENITIES
Connors Lake	29	Rustic Family	Limited facilities
Lake of the Pines	30	Rustic Family	Limited facilities
Backpack Camping	NA	Primitive Camping	By permit, no facilities
Canoe Camping	35	Primitive Camping	Water-access only, limited facilities
Hunter Camping	NA	Primitive Camping	By permit, no facilities
Horse Camping	0	NA	NA
Group Camping	0	NA	NA

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**Bass Lake Wilderness**

Designated in 1983, Bass and Swamp Lakes were designated as wilderness lakes to protect and perpetuate their natural beauty. The area is popular for fishing, hunting and sightseeing. To enhance the natural setting of this 94-acre lake and its shore land, motorized vehicles, motor boats, mooring of boats overnight, and camping are prohibited. An additional five wild lakes are included on the forest: Little Pelican, Hanson, Champagne, Mason, and Evergreen Lakes.

**Sobieski Flowage**

A once-active cranberry farm has been restored by the Ruffed Grouse Society, Plaza Farms, the Wildlife Restoration Association and the Department of Natural Resources to provide additional wetland habitats. The area includes a flowage, waterfowl nesting areas (the old cranberry beds) and several miles of hunter-walking trails. Presently it is used for fishing, hunting and trapping. Due to its shallow water and winter freezeout, fishing opportunities are limited.

**Education and Interpretation**

Summer naturalist programs provided by property staff are held on Saturdays at the Connors Lake Picnic Area in the Flambeau River State Forest. The programs are free of cost and the public is invited to attend. Two nature trails are provided, one located at Connors Lake Campground and another at Lake of the Pines.

**Non-timber resource gathering**

The public has some interest in gathering materials from the forest including: Christmas trees, boughs, mushrooms, bark, moss, birch tops, and berries. Moss collection is limited to Native Americans. Christmas trees and boughs require a gathering permit. Under existing treaty rights, Chippewa Nation tribal members retain gathering privileges on the Forest by permit issued by Forest staff.

**Water Based Recreation***Boating / Canoeing / Kayaking*

Much of the recreational activity and identity of the Flambeau River State Forest is centered on and along the Flambeau

River. Canoeing and kayaking is a long-established activity here. The river offers excellent paddling for all skill levels, from beginner to expert. Two major river branches extending north to south through the forest provide 75 miles river and 38 rapids. Rapids ranging from class I to class V skill levels attract a variety of paddling enthusiasts. Canoeing and kayaking is the property's most popular recreation. Five nearby outfitters provide gear rental and services. Table 3.29 lists canoe campsites and associated amenities.

*Canoe Camps*

There are 14 canoe camps located along the river in the main unit of the Forest, each containing 2 or 3 sites. Each site can accommodate 6 people. Campsites are on a first-come first-serve basis and include a picnic table, fire ring, and pit toilets. There are no required fees or permits associated with this type of camping. Campsites must be accessed by watercraft, and are to be used one night only at each site. River campsites do not meet current NR 44 standards for campground or primitive campsites.

*Landings*

There are nine landings along the length of the river within the state forest boundaries. No fee is required for using the landings, but boats must not be moored, anchored or left unattended. Table 3.30 lists boat landings on the forest.

*River Recreation*

River recreation is one of the primary activities on the Flambeau River State Forest. The Flambeau River provides one of the few opportunities in the state for multi-day paddling and camping. The remote wildness of the river and forest lures individuals and families from throughout the Midwest. For many visitors, the "Flambeau" is a primary travel destination.

To study resource demand on the river, informal inventories and assessments were conducted on the forest. Aerial observation flights of the Upper, North and South Forks of the Flambeau River were conducted from May-August of 1986 and again in 2006 and an informal survey was circulated among

**TABLE 3.26 CAMPGROUND OCCUPANCY**

Camgrounds	2001	2002	2003	2004	2005
<b>Lake of the Pines</b>					
Number of Annual Campers	872	730	1097	NA	772
% Annual Fill Rate	8%	7%	10%	NA	7%
<b>Connors Lake</b>					
Number of Annual Campers	543	392	670	NA	571
% Annual Fill Rate	5%	4%	6%	NA	5%

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“river floaters” on the North Fork from mid May-September, 2007. The findings are as follows:

- Paddling the Flambeau River remains popular for both day-use and overnight trips. Attraction to the Flambeau remains unchanged – the majority of visitors come here to canoe a wild and scenic river, experience solitude, and spend time with their families. They also come to fish, camp, and view scenery and wildlife.
- The mode of river travel has shifted with as many kayaks seen on the river as canoes.
- Overall river use has increased slightly over the past two decades (Figure 3.5). User levels on the North Fork remain stable, and day-use is as popular as ever. On the North Fork more use is occurring north of Highway W than south of this location. The South Fork of the river has seen a decline in river use. This section of river is less family oriented with more challenging rapids and fewer camping options.
- Individual campsites with the highest use occur both north and south of Highway W. Some sites, Cedar Rapids and Oxbo receive heavy use.
- Visitors are generally satisfied with their experience on the river. They appreciate the wild and scenic qualities of the river corridor. Most consider some type of forest management acceptable as long as the scenic and natural qualities of the shoreline are maintained.
- The most negative comments we hear are not easily addressed – weather, low water levels and, biting insects.
- Reports of negative interactions with others – noise, rowdy or rude behavior were received. A general deterioration of some campsites and landings, and occasional littering is reported.
- Some river recreationists would like to see improved access and more campsites. At some times and locations,

occasional user-conflict or congestion occurs for various reasons:

- Ease or difficulty of paddling a particular stretch of river impacts user choices. For example the North Fork, south of Highway W, is popular because it offers the thrill of repeated whitewater rapids yet, for the most part, is more easily paddled than other segments. A stretch of river may be popular for its scenery or fishing opportunities, or the level of whitewater challenge it offers, while other river segments are more desirable for families with young paddlers.
- Campsite location is key to an overnight river trip and the distance that paddlers are willing or able to paddle. Choice is related to proximity to popular paddling routes, and available caping options.
- Put-ins and take-outs are important in determining the length of a trip, starting and ending times, day trip vs. overnight, and experienced vs. novice or occasional paddlers.
- The majority of canoe or kayak groups on the Flambeau are relatively small, 8 or less people, and most are satisfied with the size of available campsites. About a fifth of river recreationists come as organized groups – scouts, church groups, canoe clubs – in parties of 9 to 12 or more. Some groups contain up to 30 or more people and far exceed available campsite facilities.

River users indicated there two areas of improvement that would enhance their experience: (1) due to the increase in group camping, a group campground would minimize user conflicts and accommodate the needs of larger groups, reduce the impact on smaller campsites, and enhance the quality of user experience, (2) establishment of a landing at a key location determined by established patterns of river use. Such a landing would provide more trip options to river travelers, vary start and end times for river trips, disperse paddlers on the river

**TABLE 3.27 TRAILS AND TRAIL MILES ON THE FRSF**

Trail Name or Location	Trail Type	Miles	Fees	Designation
Bass Lake Wilderness Scenic Area	nature hiking	0.4	None	Non-motorized
Connors Lake Campground	nature hiking	0.5	Entrance sticker	Non-motorized
Flambeau Hills Ski Trail	ski/hike/bike	14.0	Trail pass for skiing	Non-motorized
Lake of the Pines Campground	nature hiking	1.0	Entrance sticker	Non-motorized
Little Falls-Slough Gundy Scenic Area	nature hiking	0.5	None	Non-motorized
Snowmobile	snowmobile	55.0	None	Motorized
ATV Trails (along snowmobile trail)		40.0	None	Motorized
Sobieski Flowage	nature hiking	1.0	None	Non-motorized
<b>TOTAL MILES</b>		<b>120.4</b>		

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TABLE 3.28 PARKING AREAS ON THE FRSF

Location	Number of Stalls	Surface
Hwy. & Snuss	10 vehicles	Gravel
Bass Lake Rd.	10 vehicles	Gravel
Hwy. W & Hwy. M	5 vehicles	Gravel
Connors Lake Picnic Area*	40 vehicles	Asphalt
Connors Lake Campground*	4 vehicles	Gravel
Lake of the Pines Campground*	2 vehicles	Gravel
Hwy. W Landing	20 vehicles	Asphalt
Forest Headquarters	13 vehicles	Asphalt
Nine Mile	9 vehicles	Gravel
Old Oxbo Parking Lot	10 vehicles	Gravel
Flambeau Hills N. Parking Lot	11 vehicles	Gravel
Dix Dox	26 vehicles	Asphalt
HWY W	10 vehicles	Asphalt
*Flambeau Hills	40 vehicles	Gravel
Fisherman's Land.	10 vehicles	Gravel
Little Falls/Slough Gundy	18 vehicles	Gravel
Hervas	6 vehicles	Gravel
Beaver Dam	12 vehicles	Gravel
Camp 41	12 vehicles	Gravel
Sobieski Flowage	5 vehicles	Gravel
Sobieski Hunter Walking	5 vehicles	Gravel
Pelican Lake	2 vehicles	Natural soil
Connors Lake Boat Land.	15 vehicles	Asphalt
Lake of the Pines Boat Land.	10 vehicles	Asphalt
Payne Farm	5 vehicles	Gravel
Old Wayside – Hwy. 70	20 vehicles	Gravel
Robinson – Upper N. Fork	15 vehicles	Gravel
Holtz – Upper N. Fork	5 vehicles	Gravel

\*Fee Required

thereby maintaining the quality of user experience, and reduce congestion and crowding on the river and at landings.

#### *South Fork of the Flambeau River*

Approximately 10 miles of the smaller South Fork of the Flambeau River run through the forest. Known for its rapids and whitewater paddling (Class I-V rapids are found here), this stretch of river has high seasonal variability of water levels which prevent paddling in the summer. Figure 3.6 shows average stream flow data from two stations near the Forest. Historic data (collected annually from 1928-1976) illustrate these seasonal peaks in flow. From early spring to mid June at the latest, water levels are high and attract many paddlers to this highly scenic and challenging whitewater run. Flow levels and recreational use drop precipitously after June. Fisherman's Landing on Cty. M provides designated boat access. Currently, there are no canoe campsites on this stretch of river.

#### *The Upper Flambeau*

The Upper Flambeau Unit (Upper North Fork Flambeau Natural Area) comprises 1,114 acres. This area is approximately 300 feet wide on each side of the river stretching 13 miles downriver below the Turtle Dam and is considered a "public use area." The public was assured when purchased by the State that the natural quality of this stretch of river would be retained. The Upper Flambeau provides a primary connecting route between public lands to the east and west. There are two landings along this stretch of river and no designated campsites. Due to its small size and lack of designated recreational uses, the area is used primarily for "put-ins and take-outs" by river users.

#### *Swimming*

There are three designated swimming beaches (with bathrooms) on the state forest: Connors Lake picnic area, Connors Lake Campground and Lake of the Pines campground. State forests do not supply lifeguards at any of their swimming beaches. Swimming also occurs at undesignated sites on the forest, most notably at Slough Gundy, the Cedar Rapids river campsite, and at the landing at Hwy W.

#### *Fishing*

The Flambeau River supports musky, walleye and smallmouth bass, red horse, sturgeon and catfish species. Connors Lake and Lake of the Pines fishing opportunities include walleye, bass, musky, northern pike and panfish. Bass lake provides largemouth bass and bluegills. Price Creek and Hackett creek are well known fly fishing areas. Trout can be found in just about every creek that empties into the Flambeau River. Numerous traditional fishing areas located along the river are used extensively by the local community.

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### Special Recreation Settings

Two wild areas (established on the northwest and southern portions of the forest), two state natural areas, three research areas and two wilderness areas are identified on the forest.

Bass Lake and Swamp Lake were designated as wilderness lakes in 1983 to protect and perpetuate their natural beauty. An additional five wild lakes are included on the forest: Little Pelican, Hanson, Champagne, Mason, and Evergreen Lakes.

### SOCIAL AND CULTURAL RESOURCES

#### Land Ownership and Landuse within and Adjacent to the Property

The main unit of the Flambeau River State Forest is over 90,000 acres in size. It has an acreage goal of 93,530 acres, including the non-contiguous Upper Unit of the state forest. Currently the Department has acquired 90,281.5 acres (96.53% complete). The main unit of the Flambeau River State Forest encompasses over 54 miles of river corridor on the Flambeau River, including the North and South Forks, with more than 90% of the total distance in state ownership. A significant portion of the private ownership within the main unit of the FRSF occurs around the larger lakes and along the Flambeau River (see Maps 1.1: Regional Ownership and 2.1: State Forest Ownership)

The Upper Unit of the Flambeau River State Forest Natural Area consists of about 1,000 acres of land in state ownership. This unit stretches for 14 miles along the Flambeau River, downstream of the Turtle Flambeau flowage area. The State Forest was expanded to include the Upper Unit in 1986, when the Wisconsin DNR purchased the majority of this river corridor, comprised mainly of 300 feet off either bank for much of this distance. There remain four major private in-holdings along the river corridor.

Other large blocks of public land are near the State Forest. They include: the Chequamegon National Forest, county forest land, and other state-owned lands such as the Kimberly Clark Wildlife Area, the Hay Creek-Hoffman Lake Wildlife Area, and the Turtle Flambeau Scenic Waters Area. Private lands in the area include industrial forests, non-industrial private forests, recreation lands and permanent residences.

Primary uses of the lands of the region include recreation, timber production, limited agriculture, and residential and tourism development. While some of the private properties within and around the state forest remain enrolled in a state forest tax program, such as Forest Crop Law or Managed Forest Law, they are experiencing increasing development pressures, especially on lakes, rivers and streams. This is also true of the neighboring, private Industrial Forests.

**TABLE 3.29 CANOE CAMPSITES AND AMENITIES**

Canoe Camps	Number of Sites	Capacity	Fishing	Drinking Water	Pit Toilets	Handicap Facilities
County Line Camp	2	12	x		x	N/A
Oxbo Canoe Camp	3	18	x		x	N/A
Log Creek Camp	2	12	x		x	N/A
Mason Creek Camp	2	12	x		x	N/A
Babb's Island Camp	2	12	x		x	N/A
Headquarter's Camp	3	18	x		x	N/A
Boy Scout Camp	3	18	x		x	N/A
George's Island Camp	3	18	x		x	N/A
Camp 41	3	18	x	x	x	N/A
Wannigan Camp	2	12	x		x	N/A
Forks Camp	2	12	x		x	N/A
Bear Run Camp	2	12	x		x	N/A
Hervs landing Camp	3	18	x	x	x	N/A
Cedar Rapids Camp	3	18	x		x	N/A

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**Historical and Archaeological Resources**

There are no recorded historical or archaeological sites or structures on the Upper Flambeau River unit of the forest.

On the primary unit of the FRSF, there are 13 recorded historical sites and 7 recorded archeological sites. There may be other sites on the property which are known but not recorded. The historical structures are mainly state forest buildings and old residences. There are an additional 14 historical structures not within the forest boundaries, but close by that were part of an early settlement. The FRSF headquarters is an historic structure representative of the early logging days, built in the

1950's. The archeological sites on the forest range from the archaic period to historic Euro-American times. A campsite or village for early Native Americans was situated where the North and South Forks of the Flambeau meet. What are today the areas of Lake of the Pines, Papoose and Connor's Lake was once a village and burial site for Native Americans during the late Woodland period. Another Native American archeological area is around Deadman's Slough on the North Fork. This site, from the early archaic time, was a workshop, village and/or burial site.

There have been no intensive surveys to identify cultural resources; therefore, many archaeological sites (and likely some historic structures as well) which surely occur within the Forest, remain undiscovered and unreported. Archaeological sites would be expected to occur along the elevated margins of the river's waterways, especially at the confluence of rivers, and the inlets and outlets of rivers on lakes.

*Ceded Territories and Tribal Use*

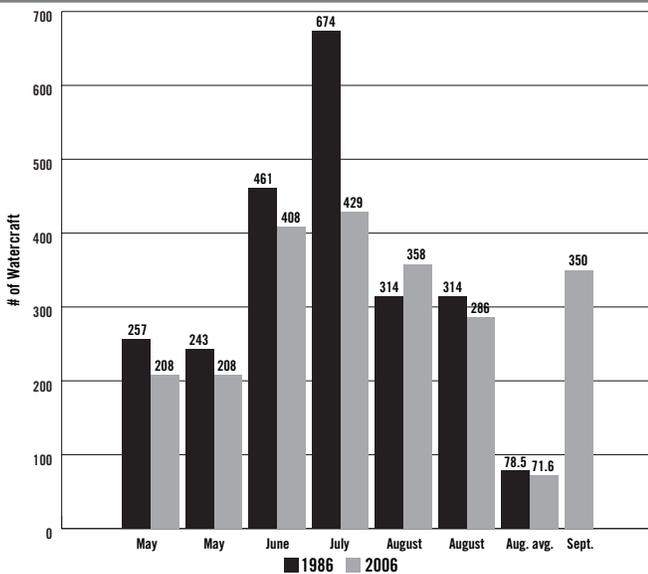
The FRSF lies within the ceded territory of the Chippewa tribes. All bands of the Lake Superior Chippewa retain the rights to such activities as: hunting, fishing, trapping and gathering rights as a result of the treaties of 1837 and 1842. The Lac Court Oreilles Band is the closest Tribe to the FRSF, and to date, are not major users of the forest or its resources.

**ADMINISTRATIVE AND OTHER NON-PUBLIC USE FACILITIES OR STRUCTURES**

**Administrative and Operations Buildings**

Forest staff are housed in a 1950's era historic log-cabin. This building houses the forest management program and staff and serves as a public contact station. The property has several

**FIGURE 3.5 TOTAL WATERCRAFT ON THE FLAMBEAU RIVER FOR THE 20 DAYS SURVEYED**



**TABLE 3.30 BOAT LANDINGS ON THE FRSF**

Landing Name	Location	Drinking Water	Parking Capacity	Landing Type
Nine Mile	Highway 70	X	7	Boat & canoe
Dix Dox (ramp)	North of Hwy. 70 on Oxbo Dr.	X	26	Boat & Canoe
Highway W	Hwy. W, at north fork	X	10	Canoe
Camp 41	Camp 41 Rd. east of the river	X	12	Canoe
Fishermans	Hwy. M south of Bear Creek Rd.	X	10	Canoe
Hervas (ramp)	End of River Rd., east of river	X	6	Boat & Canoe
Beaver Dam	Beaver Dam Rd. west of river		12	Canoe
Connors Lake (ramp)	Hwy. W, west of Hwy. M	X	15	Boat & Canoe
Lake of the Pines (ramp)	End of Lake of the Pines Rd., at campground	X	10	Boat & Canoe
Robinson	Upper N. Fork below Turtle Flambeau Flowage		15	Boat & Canoe
Holtz	Upper N. Fork below Turtle F.F.		5	Boat & Canoe
Pelican	Pelican Road		2	Carry-in
Bass	Bass Lake Road		10	Carry-in

**PROPERTY ASSESSMENT**

other non-public facilities and structures, the majority of which are used as maintenance shops and storage. There are two historic buildings on the property, including a CCC-era camp. Table 3.31 lists current non-public facilities on the forest.

*Correctional Facility*

Flambeau Correctional Center (FCC) is located in the Flambeau River Forest, approximately 10.5 miles north of Highway 8 on County Road "M" in Sawyer County. Currently, FCC is an 80-bed minimum security correctional facility for adult males. The Center provides various types of off-grounds work such as DNR forestry labor, work release with private businesses, and community service projects.

**Managed Roads**

The forest has 4 types of roads on the property. There are 60.5 miles of open forest roads, 47 miles of town roads, 21 miles of county roads, and 9 miles of state highway. The Forest recently completed a Road Access Plan (2006) and maintains approximately 61 miles of roads for public use. The plan focuses on major corridors through the Forest while providing access to forest resources for hunters and other recreationists. Individual unit maps can be found on the Forest's website (<http://www.dnr.state.wi.us/forestry/stateforests/SF-Flambeau/Flambeau-maps.htm>). Road development varies from highly developed state and county roads to the lightly developed, but permanent woods roads. The State is responsible for the maintenance and upkeep of all forest roads, which will be crowned, ditched, and graveled. Towns and counties are responsible for road maintenance within their jurisdiction.

**Dams**

Sobieski Flowage is a 66 acre impoundment located in the southeastern section of the forest. The area was a former

cranberry farm until its purchase by the State. Upon the State's purchase of this property the cranberry operation was discontinued but the dam was kept operational. The dam consisted of an earthen dike with a controlled whistle tube. In the early 1980's a portion of the dam's crown was weakened and collapsed causing the partial draw down of the flowage. A project was approved in 1993 to repair the earthen structure. The plans included a normal pool area of 66 acres and a normal storage volume of 110 acre feet. The project was done in cooperation with the Roughed Grouse Society, Plaza Farms, the Wildlife Restoration Association, and the Department of Natural Resources and completed in 1997. To protect the main dam from further wave erosion, the dam face was reconstructed with riprap in 2000. Today, the flowage includes populations of panfish, perch, and northern pike. It also includes waterfowl nesting areas and several miles of hunter walking trails.

**MANAGEMENT ISSUES**

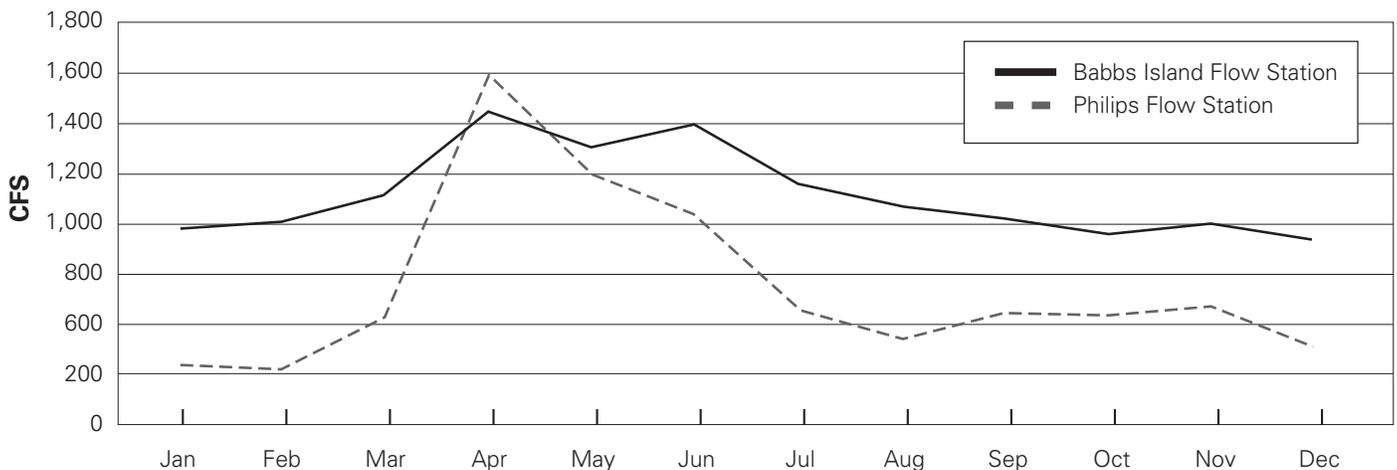
Several major planning and management issues have been identified by property staff, the public, and the planning team for review and discussion in the planning process.

**Resource Management**

The following have been identified as potential management issues:

- Evaluation of the quarter mile wilderness area designation along the river corridor.
- Examination of existing property boundary and expansion options.
- Forest management activities while considering wilderness areas, high conservation value forests, research and scenic areas. General forest management objectives as well as future management of the big block area.

**FIGURE 3.6 AVERAGE STREAM FLOW-NORTH AND SOUTH FORKS OF THE FLAMBEAU RIVER**



## PROPERTY ASSESSMENT

- Research—The forest provides many research opportunities and has ongoing studies.
- Action Plan for aquatic and terrestrial invasives.
- Upper Flambeau land base—management and property designation and management responsibility with adjacent Department lands.

### Recreation Issues

The following have been identified as potential recreation management issues:

- Future of the river recreation program (camping, take-outs) due to increase in large groups and conflicts between users
- Camping (group and single) wilderness experience, user conflicts
- Access
- Adequate supply and location of sites
- ATV trails-potential trail connectors at south end of existing trail and possible new trail development and ATV amenities.
- Unauthorized boat landings and access.
- Camping facilities-are existing facilities adequate and meeting user needs
- Day use areas – appropriate level of development
- New types of recreational trails (interest in horse, skijoring)
- Access—roads open to public and development level/standards (Access Plan completed in 2006)

**TABLE 3.31 NON-PUBLIC FACILITIES ON THE FRSF**

Facility	DNR Building Number	Square Feet	Historic Building
Forest Headquarters	523	1,045	Yes
Metal Pole Shed	3,937	2,400	No
CCC Camp	522	3,680	Yes
Garage	524	576	No
Shop	527	3,456	No
Tool Shed	528	224	No
Dynamite House	529	144	Yes
Nursery Stock/Cold Storage	7,090	98	No
Stream Flow Measure Station	7,091	25	Yes
CCC Dynamite Cap House	7,093	25	No





## FINDINGS AND CONCLUSIONS

This section presents the findings and conclusions from the Flambeau River State Forest (FRSF) Regional and Property Analysis. The first two sections of this document summarize existing conditions and trends on the forest and in the region. Specific trends addressed include ecological significance and capability of the property, as well as the property's recreational needs, opportunities, limitations and significance. This section does not include every finding or draw every conclusion; rather it provides a summary of the major findings.

The findings and conclusions presented here will help guide the Flambeau River State Forest's future management, use, and development by highlighting significant opportunities and limitations on the property, and defining the reasonable range of management alternatives considered in the master planning process. As planning for the property continues, conclusions will ultimately help define the property's future natural landscape, forest resources, and recreation amenities and uses.

### ECOLOGICAL SIGNIFICANCE AND CAPABILITY OF THE FLAMBEAU RIVER STATE FOREST

#### Summary of the Property's Ecological Significance and Capability

The FRSF is a large block of publicly owned forest in a region with an abundance of publicly owned forested lands. Over 50% of the forestland in the region is owned by public entities. Public forests in the area include the FRSF, the Chequamegon-Nicolet National Forest (CNNF), and Sawyer, Rusk, and Price county forests. Many of these forests abut each other, creating one of the largest publicly owned blocks of forestland in the state. The FRSF area is one of the state's most densely forested areas. Many of the public land blocks, including the FRSF, have very few private in-holdings. In-holdings that do exist are predominately forested. The FRSF contains one of the state's largest unfragmented blocks of forest cover with diverse forest types and age classes. Lands held in private ownership near the FRSF are largely owned by industrial forest owners. The large forest base within the property and region provides an opportunity for landscape management while supporting a range of cover types and age classes.

Many industrial forest lands have been recently sold and some new private forest owners are less interested in timber production. National, state and county forests may be expected to provide increased levels of forest products to maintain existing supply. The fragmentation of land ownership into increasingly smaller parcels in the region is likely to continue. There will be

a corresponding decrease in the number and quality of opportunities to "block in" and connect the existing large blocks of public conservation lands.

The property's ecological character is typical of the North-Central Forest Ecological Landscape. Unique ecological features on the property and ecological landscape include mature northern hardwood forests, seeps and vernal pools, remnant stands of hemlock-hardwoods, and habitats associated with the Flambeau River and its tributaries. One of the most ecologically significant features on the forest is a 50-mile stretch of the Flambeau River and associated river habitats. In addition, the forest contains a small number of remote undeveloped lakes.

Management history, soil types (Silt-Loam), and natural disturbances (wind) have been important agents in forming the composition, structure, and spatial distribution of forest types on the FRSF. Wind disturbance is the primary natural process that influences the property. Wind events occur at a fairly regular interval on the property, with intensity varying from 500-acre to 30,000-acre (1977) events.

#### *Forest Management Capability*

The FRSF supports a diverse range of primarily deciduous forest cover types, including northern hardwoods (making up almost half of the property's forested acreage), aspen, swamp hardwoods, and fir/spruce. The FRSF is capable of maintaining a diverse forest cover type, and producing high-quality northern hardwood sawlogs through even and uneven-aged management systems.

The forest also contains areas with high water table that support the growth of swamp hardwood, and swamp conifer forest types. Current management has not focused on swamp conifers. Pine management on the property is limited, due to the primarily sandy-loam and silt-loam soils, which are more suitable for nutrient-demanding hardwood species. Oak management opportunities are also limited, due to primarily mesic site conditions and the advanced regeneration of shade tolerant species in the understory. Deer browse pressure impacts the regeneration of these and other species on the forest.

Several cover types are present on the forest, providing habitat for a variety of species. Many of the early successional species such as aspen/birch are decreasing slightly in acreage due to natural succession, although they are present in much of the surrounding landscape. Opportunities exist to manage early successional species using even-aged management systems. The property also offers the opportunity to maintain large patches of older forest with enhanced structural attributes currently lacking in most of the surrounding landscape.

**FINDINGS AND CONCLUSIONS****Capability of the Property to Support Regional Ecological Needs and Opportunities***Native Communities*

Several regionally representative natural community types are present on the property, and in the surrounding region. These communities offer management opportunities for biodiversity conservation, including the restoration and maintenance of high-quality examples of Northern Mesic Forest, Northern Dry-mesic Forest (a rarity in this landscape), Northern Wet-mesic Forest, Forested Seeps, Ephemeral Ponds, several wetland community types, undeveloped lakes, and stream systems.

The hemlock component of the Northern Mesic Forests on the property has declined in frequency due to large catastrophic wind events, micro-climate changes, and high deer populations. This species will continue to be a challenge to maintain on the forest.

Water and wetland resources on the property provide opportunities to preserve high-quality lake, river, stream, and wetland habitats.

**Threatened, Endangered, and Species of Special Concern and Wildlife Species of Greatest Conservation Need**

The FRSF supports several Natural Heritage Inventory (NHI)-listed threatened, endangered, and special concern species, both plants and animals. These include 10 bird species, 2 dragonflies, 2 reptiles and amphibians, 7 plants, and 4 mussels. Of these species, 2 are endangered, 6 are threatened, and the remaining are species of special concern. The FRSF also hosts several Wildlife Species of Greatest Conservation Need (SGCN), as identified by Wisconsin's Wildlife Action Plan (2006). Of these species, those with the highest frequency include 6 mammals, 22 birds, 4 herptiles and 3 fish. The contiguous blocks of large, intact forest and water resources (rivers, seeps and vernal pools) on the property and in the region provide significant habitat for these species.

*General Ecological Needs and Opportunities*

Given its remote location and generally low recreational use, the FRSF has few invasive species with established populations. Early invaders such as garlic mustard, buckthorn, and purple loosestrife are present on the property, but are relatively small in patch size and distribution. Rapid response in control,



**FINDINGS AND CONCLUSIONS**

as well as an active program of prevention would limit the introduction and establishment of more invasives.

The FRSF abuts over 500,000 acres of the Chequamegon-Nicolet National Forest to the north and over 275,000 acres of county forest lands belonging to Sawyer, Rusk, and Price counties on the west, south, and east. Together, this extensive block of permanently protected, largely undeveloped forestland provides significant landscape-scale ecological values. Most significantly, the block of forestland in the FRSF region provides interior bird habitat and wildlife travel corridors, which reduce the potential for creating isolated populations.

Several long-term ecological research areas exist on the forest. These areas are intended to provide information for future management options and decisions on the state forest. Maintaining these research sites and potentially establishing future research sites aid the property, the region, and the state in making sound, science-based management decisions. Current research efforts focus on the management and characteristics of old-growth northern hardwood forests. Some designated research sites may need evaluation, as little work has occurred in recent years.

Three Conservation Opportunity Areas (COAs) are present, in part, on the FRSF and are associated with numerous SGCN (4.10 Upper Flambeau Woods, 4.11 Skinner Creek, and A.41 Flambeau River). These COAs are associated with an extensive older deciduous-coniferous forest with embedded lakes, wetlands, and other community types and are of Upper Midwest / Regional significance. Information and maps related to the wildlife Action Plan and Species of Greatest Conservation Need can be found at this website: <http://dnr.wi.gov/org/land/er/vwap/implementation/>.

## **RECREATION NEEDS, OPPORTUNITIES, SIGNIFICANCE, AND CAPABILITIES OF THE FLAMBEAU RIVER STATE FOREST**

### **Summary of the Property's Regional Recreation Significance**

The FRSF region has few state or federal highways and no major population centers. Overall recreational demand on the property is low and relatively steady. The recreational environment of the FRSF region is strikingly different than the popular tourist areas of the lake districts in north-central and north-western Wisconsin. In contrast, the recreational environment of the Flambeau region is defined by its expansive, unbroken, and "wild" public forest lands and rivers and a lack of lakes and highly developed recreational attractions. This area is especially known for its hunting, canoeing, fishing, trapping, and hiking opportunities in a remote, backcountry setting, although more "intensive" recreational activities, such as ATV riding and car camping are popular as well.

Recreationally speaking, the crown jewel of the FRSF is its namesake, the Flambeau River. Over 50 river miles flow through the property. The combination of clear waters with good water levels all year, predominantly "wild" shoreline, occasional whitewater drops, abundant secluded campsites, and the opportunity for multi-day canoe trips, make this river one of Wisconsin's exceptional recreational resources. The North Fork of the Flambeau River is considered one of the Midwest's premier rivers for canoeing and camping.

As hunting opportunities on private lands become more limited, more recreational users are coming to the FRSF for its abundant hunting opportunities. The property offers hunting for a wide variety of game species in areas with easy access, as well as in areas with more challenging access and fewer hunters.

Except for the Flambeau River, recreational opportunities on the FRSF have much in common with what is provided by the other major public lands in the region; primarily "less developed" and more remote types of recreation as well as opportunities for ATV riding and snowmobiling. Campsites are abundant in the region, but there is an unmet demand for campsites offering more developed facilities, such as showers and flush toilets. There is also regional demand for more miles of ATV trails and for ATV camping opportunities.

### **Recreation Capabilities and Significance**

#### *Remoteness*

Predicted population growth in the FRSF region is low in comparison to other regions within the state. Nearby towns are rural and widely dispersed. Due to its remote location with few major highways or population centers, recreational demand within the forest is generally low and focused on the river and more remote recreational experiences. Statewide, this type of opportunity is limited and growing rarer as larger blocks of private land are subdivided. The FRSF is positioned to maintain or expand its recreational niche of providing wild and remote outdoor experiences to various types of recreation users.

The long distance of the FRSF from major population centers, along with the lack of major highways serving the area, will likely mean future growth in recreational use levels on the property will be relatively low compared to other forests and parks across the state.

#### *Recreation Use Trends*

Current trends indicate that recreational users within the state are changing. Northern regions are heavily impacted by seasonal housing, tourism, and an aging resident population. Older residents generally enjoy quieter, lower impact activities such as viewing birds, driving for pleasure, and camping in more developed facilities. Younger generations generally partic-

**FINDINGS AND CONCLUSIONS**

ipate in more active activities such as jogging, inline skating, developed camping, paintball, mountain biking and riding ATVs. There may be opportunities to diversify or enhance recreational opportunities and facilities on the FRSF to better meet the needs of younger and older visitors without diminishing the capability of providing abundant, high quality opportunities for remote, backcountry experiences.

*River Use*

The 50-mile length of the Flambeau River corridor and its wild, undeveloped river shoreline are the prominent resource attractions on the FRSF. The Flambeau River is used for a variety of recreational activities such as canoeing, kayaking, camping, fishing, boating, swimming, and scenic and wildlife viewing. Different river segments offer a variety of recreational environments and challenges, including easy and intermediate white-water experiences, river floats, and a range of river widths from narrow to wide. This variety allows the river, and the property, to serve a broad range of interests and skill levels.

Visitor use of the river has remained steady, but users are changing; some seek solitude, others seek group outings; some want day-trips, while others want multi-day trips and primitive camping. The majority of river campsites are at or over capacity, with many sites and tent areas showing signs of heavy use and deterioration. Occasional crowding and user conflict occur at some camping locations and river landings. Many of the campsites are clusters of two or three sites, which do not provide for camper solitude.

Opportunities may exist and should be explored to improve river access and facilities to better accommodate changing use patterns while maintaining or enhancing the overall river experience.

*Developed Campgrounds*

There is an abundance of camping in the FRSF region; however, there are few developed campgrounds. Most public campgrounds in the region are rustic, without electric hook-ups, showers, or flush toilets. These sites are not generally accessible to those with larger camping trailers or motor homes. Campgrounds within the FRSF are important in helping to fill campsite demand within the region. However, current campground use on the FRSF is below capacity. Some campers would like to see a more developed camping experience available.

As the FRSF works to meet user demands, the management challenge will be to accommodate some level of developed camping facilities and activities while maintaining an appropriate fit with the forest's more remote character.

**ATVs***Regional Trail System*

ATV use has increased significantly over the last 10 years. ATV trails are abundant in the FRSF region, with over 700 miles of trail. The Flambeau River State Forest provides nearly 40 miles of trail, which connects with the 74-mile Tuscobia Recreational Trail (a converted rail grade) which, in turn, links to the 95-mile USFS Dead Horse ATV trail system. This linked system provides significant regional riding opportunities. In the future, this network could be expanded substantially by extending the FRSF trail system to connect with the current and planned Price and Rusk county ATV trails. This link would create a trail system stretching from the National Forest trails on the north to the county trail systems to the south.

*Trail Development Level*

The regional trail system in the FRSF area offers a range of trail treads and experiences. Trails within the Chequamegon-Nicolet National Forest have both linear, well-developed trails, and narrower, less developed trails. ATV trails on the FRSF are wide and well-developed to accommodate snowmobile trail grooming equipment. Demand within the region is for narrower, winding trails, which offer a more intimate and challenging riding experience.

*ATV Camping and Day-Use Facilities*

There are few public day-use and overnight camping facilities in the FRSF region that connect directly to ATV trails. Campgrounds on the FRSF do not have direct access to ATV trails on the property, and most ATV riders access forest trails via the Tuscobia Trail access points. Two county campgrounds northeast of the property connect to the regional trail system, and have been modified to allow ATVs. There may be a need to provide additional, camping and day-use support facilities for ATV users on the FRSF property.

**Connectivity to Other Public Lands**

The FRSF is located adjacent to several public lands. The Chequamegon side of the Chequamegon-Nicolet National Forest, Price, Rusk and Sawyer county forests, and some parcels of private land all adjoin the FRSF boundary.

Proximity to public lands and recreational trails outside of the forest boundary presents potential for expanding the FRSF boundary to connect these public lands. Advantages of linking public lands include expanding natural communities, wildlife habitats, and wildlife travel corridors for ecological purposes. Likewise, potential may exist for linking recreational trails for the purposes of hiking, hunting, biking, ATViing, or snowmobiling.

Segments of the Flambeau River currently in private ownership are increasingly being sold and subdivided. This is espe-

**FINDINGS AND CONCLUSIONS**

cially true to the north of the property to Park Falls, and the along the South Fork of the Flambeau River Opportunities to expand public ownership of the river frontage would provide recreational benefits, including increased river access and preserving undeveloped shoreline.

**Education and Visitor Services**

While it is difficult to assess the demand for education and interpretation programs within the FRSF region, educational opportunities in or near the FRSF are lacking. The need for additional educational programs, naturalists, and interpreters was identified as an issue in the 2005-2010 SCORP report.

Opportunities to expand and enhance these programs on the FRSF should be explored. Visitor experience could be enhanced through interpretation of Flambeau River history and conservation, forest ecology, and management.

**Upper Flambeau Unit**

The "Upper Flambeau Unit" is disconnected from the core property by more than 30 miles, with the City of Park Falls in between. The Upper Flambeau Unit has no developed recreation amenities, and serves primarily as a buffer along the Upper Flambeau River. The lack of proximity to the state forest headquarters makes this area difficult to manage by state forest staff. This segment of the property does adjoin the Turtle Flambeau Flowage Scenic Waters Area, and may be more efficiently managed as part of that property.

**CONCLUSIONS**

The Flambeau River State Forest is a hidden gem in a predominately rural region of north-central Wisconsin. The property is notable for its large block of contiguous forest with a variety of forest types and a mix of age classes. The Flambeau River is the major natural feature on the property, and one of the original reasons for establishing the state forest. Significant

ecological features, including large blocks of contiguous forest, undeveloped lakes, streams, and wetlands, and forest, wetland, and water communities offer management opportunities to meet a wide range of ecological and habitat needs. Because of the property's large size and unique environment, it is also home to several state and national endangered and species of special concern. The North-Central Hardwood Landscape is a predominant feature of the forest, proving the opportunity for the production of high quality hardwood trees, while also enhancing the ecological integrity of the state forest.

Recreation on the forest is primarily nature-based, with opportunities for wilderness and backcountry experiences. The large size of the FRSF, as well as its proximity to other public lands in the region, presents a unique opportunity to provide a wide range of recreational uses and facilities, while still maintaining user separation. As demographics change, and more people seek opportunities to recreate, the forest's natural features make it a potential recreation destination point, primarily focused around the Flambeau River. The Flambeau River is one of only a few rivers in the state that provides over 50 miles of undeveloped river frontage, creating a "wild" experience.

Given its unique natural features, dense forest cover, water resources, and large blocks of remote areas, all in a remote, sparsely populated part of the state, the Flambeau River State Forest has the potential to provide significant social, ecological, and economic benefits now and in the future.

**FINDINGS AND CONCLUSIONS**







# APPENDICES

## A. FLAMBEAU RIVER STATE FOREST MASTER PLAN DESIGNATION PROCESS FOR STATE NATURAL AREAS

Generally, natural areas are tracts of land or water harboring natural features that have escaped most human disturbance and that represent the diversity of Wisconsin’s native landscape. They contain outstanding examples of native biotic communities and are often the last refuges in the state for rare and endangered plant and animal species. State Natural Areas (SNAs) may also contain exceptional geological or archaeological features. The finest of the state’s natural areas are formally designated as State Natural Areas.

The Wisconsin State Natural Areas Program oversees the establishment of SNAs and is advised by the Natural Areas Preservation Council. The stated goal of the program is to locate, establish, and preserve a system of SNAs that as nearly as possible represents the wealth and variety of Wisconsin’s native landscape for education, research, and to secure the long-term protection of Wisconsin’s biological diversity for future generations. SNAs are unique in state government’s land protection efforts because they can serve as stand alone properties or they can be designated on other properties, such as a state forest. By designating SNAs within the boundary of the Flambeau River State Forest, two different, legislatively mandated Department goals are being accomplished. This arrangement makes abundant fiscal sense because the state does not have to seek out willing sellers of private lands to meet the goals of multiple Department programs. This avoids duplicating appraisal and negotiation work and provides dual use of land that is already in public ownership.

The process to establish a SNA begins with the evaluation of a site identified through field inventories conducted by DNR ecologists, including the Biotic Inventory and Regional Analysis. Assessments take into account a site’s overall quality and diversity, extent of past disturbance, long-term viability, context within the greater landscape, and rarity of features on local and global scales. Sites are considered for potential SNA designation in one or more of the following categories:

- Outstanding natural community
- Critical habitat for rare species
- Ecological reference (benchmark) area

- Significant geological or archaeological feature
- Exceptional site for natural area research and education

### DESIGNATION PROCESS OF SNAS

Step 1: Assessments	Step 2: Preferred Alternative	Step 3: Proposed Master Plan
Biotic Inventory SNA GAP analysis	The highest rated biotic sites and those with potential for filling gaps are proposed for special designation.	Native Community Areas Wild Resources Area

**Step 1:** Results from both the SNA GAP analysis and the Biotic Inventory, which were conducted on the FRSF within the last few years, were used to decide which areas would be SNA opportunity areas.

The data gathered via the Biotic Inventory identifies and evaluates the natural communities, significant plant and animal populations, and selected aquatic features and their associated biotic communities. This report emphasized important protection, management, and restoration opportunities, focusing on both unique and representative natural features of the FRSF property and surrounding landscape.

The SNA GAP analysis looks at representation for each primary natural community in each Ecological Landscape and determines if an adequate number of ecological reference areas are in place to capture the variation across the landscape.

**Step 2:** Using both the Biotic Inventory and SNA GAP analysis, the FRSF Preferred Alternative took sites ranked high and proposed them for special designation. Several of these sites were proposed as Native Community Management Areas, and a few were proposed within the Wild Resource Management Area classification, based on their overlap with other complimentary objectives.

**Step 3:** After public review of the preferred alternative, management classifications were assigned to each of the areas, designating them in either Native Community Management Areas or the Wild Resource Management Area. After the management goals were developed, the team reassessed the boundaries to assure that each forest stand was in the correct management area. Using information from the Biotic Inventory, the SNA GAP Analysis, and an examination of the draft objectives for each area, experts evaluated each site for potential State Natural Area designation.

Once approved by the Natural Resources Board, sites are formally “designated” as SNAs and become part of the Wisconsin State Natural Areas system. Designation confers a significant level of recognition of these sites’ natural values through state statutes, administrative rules, and guidelines.

### IMPACT TO MASTER PLAN PROCESS

The process for selecting and designating SNAs is determined by cooperative efforts between two programs within the DNR: The Division of Forestry and the Bureau of Endangered Resources. The master planning process for state forests requires that the goals set by the Division of Forestry be considered before the Bureau of Endangered Resources submits candidate sites for SNA designation. This is done so that all sites are evaluated for timber production, which is outlined as a Division of Forestry priority. As a result, SNAs are considered overlays to Land Management Areas. In this way, the same piece of land can achieve the goals of two different Department programs. Management activities for each SNA reflect the general management prescriptions for the area in which the SNA is located. For example, a SNA located within an area managed for white pine will follow the objectives for that land management area, rather than a separate SNA management plan. The exact same timber management would occur with or without SNA designation.

### LAND MANAGEMENT IMPACT BY DESIGNATION OF SNAS

State Natural Areas are not exclusively passive management. State Natural Areas are considered overlays to the Native Community, Wild Resource, and Scenic Areas of the FRSF. The State Natural Area designation does not change the underlying management objectives, prescriptions, or authorized activities outlined in this master plan for each land management area. There are no additional management prescriptions associated with these State Natural Areas.

### SNA MANAGEMENT ACTIVITIES

State Natural Areas are not exclusively passive management. Between 2003 and 2007, over 200 SNAs all over Wisconsin have had some type of active management. Examples of management activities include invasive species removal, burning and fuel reduction, brushing, trail development, ditch filling, and planting. Timber harvesting is not a primary focus of a SNA, but it is often necessary to achieve the desired ecological goals of a specific habitat. During the same five years, 29 commercial timber operations were conducted on SNAs to achieve the ecological goals of the site. Regardless of any designation, wildfires on state forests would be actively suppressed, safety measures would occur in developed areas, and insect and disease outbreaks would be considered for control.

### RECREATIONAL IMPACTS

Impacts would be minimal because the recreation opportunities for any given area were determined before consideration as a SNA. State Natural Areas are not appropriate for intensive recreation and such areas were automatically ruled out as potential sites during the development of the preferred alternative. However, SNAs can accommodate low-impact activities such as hiking, bird watching, and nature study. Examples of existing facilities within SNA sites include hiking and cross-country ski trails, and boat landings and ramps.

### BENEFITS FOR A PARTNERSHIP BETWEEN STATE FORESTS AND THE STATE NATURAL AREAS PROGRAM

The SNA program has standardized methods for conducting long-term monitoring of ecosystems and also has a network with a broad range of researchers, from aquatic biologists and botanists to zoologists that can be encouraged to conduct research on the state forest to enhance our understanding of the FRSF ecosystem. The experts in the Division of Forestry have experience in monitoring the trees and other plants, while SNA ecologists have expertise in monitoring terrestrial invertebrates, fungi and lichens, ground layer plants, mammals, reptiles and amphibians, and birds. Together an exceptional collaborative monitoring program could be developed.

- The SNA program can bring a broad range of educators together to assist in understanding and interpreting the ecology of the FRSF.
- The SNA program can lend its expertise to help create ecological interpretive signs and trail guides for better understanding of the full range of biological diversity on the FRSF.
- The SNA Program can assist in conducting land management activities such as invasive exotic species control, brushing and conducting prescribed burns.

- The Division of Forestry would not lose any of its management or decision-making authority, but gain the ability to provide a broader range of opportunities that would help fill its mission by collaborating with the SNA Program.
- An outside forest certification audit of the State Forest Program concluded that cooperation between the Division of Forestry and the State Natural Areas Program was commendable. This cooperation should continue to maintain such a high rating by future auditors.
- With a joint consideration, the same piece of land can achieve the goals of two different programs. If there were a lack of teamwork, the SNA Program would still pursue sites to fulfill its goals. Such a venture could duplicate an additional 2,609 acres of land with an approximate cost of \$5.2 million (based on 2008 figures) or more to the state of Wisconsin. Cooperation makes abundant fiscal sense.



## B. ENDANGERED OR THREATENED SPECIES AND SPECIES OF SPECIAL CONCERN

The table below lists animals on the Flambeau River State Forest which are endangered, threatened or of special concern, based on the Natural Heritage Inventory (NHI) database. The listing includes both state and federal designations. The aim of a "Special Concern" designation is to focus attention on certain species before they become threatened or endangered. Species of Greatest Conservation Need (SGCN) are also indicated.

**TABLE B.1 FLAMBEAU RIVER STATE FOREST ENDANGERED ANIMALS**

Scientific Name	Common Name	State Status	Federal Status	SGCN	Taxa Group
<i>Accipiter gentilis</i>	Northern Goshawk	SC/M		X	Bird
<i>Botaurus lentiginosus</i> *	American Bittern	SC/M		X	Bird
<i>Buteo lineatus</i>	Red-shouldered Hawk	THR		X	Bird
<i>Catharus ustulatus</i>	Swainson's Thrush	SC/M			Bird
<i>Dendroica caerulescens</i>	Black-throated Blue Warbler	SC/M		X	Bird
<i>Dendroica cerulea</i>	Cerulean Warbler	THR		X	Bird
<i>Dendroica tigrina</i>	Cape May Warbler	SC/M			Bird
<i>Falcipectens canadensis</i> *	Spruce Grouse	THR		X	Bird
<i>Haliaeetus leucocephalus</i>	Bald Eagle	SC/P		X	Bird
<i>Oporornis agilis</i>	Connecticut Warbler	SC/M		X	Bird
<i>Pandion haliaetus</i>	Osprey	SC/M		X	Bird
<i>Seiurus motacilla</i>	Louisiana Waterthrush	SC/M		X	Bird
<i>Spiza americana</i> *	Dickcissel	SC/M		X	Bird
<i>Ophiogomphus anomalus</i>	Extra-striped Snaketail	END		X	Dragonfly
<i>Ophiogomphus howei</i>	Pygmy Snaketail	THR		X	Dragonfly
<i>Canis lupus</i>	Gray Wolf	SC/FL	LE	X	Mammal
<i>Martes americana</i> *	American Marten	END		X	Mammal
<i>Alasmodonta marginata</i>	Elktoe	SC/P			Mussel
<i>Cyclonaias tuberculata</i>	Purple Wartyback	END		X	Mussel
<i>Pleurobema sintoxia</i>	Round Pigtoe	SC/P			Mussel
<i>Simpsonia ambigua</i>	Salamander Mussel	THR		X	Mussel
<i>Diadophis punctatus edwardsii</i>	Northern Ring-necked Snake	SC/H			Snake
<i>Glyptemys insculpta</i>	Wood Turtle	THR		X	Turtle

\*Documented just outside of the FRSF boundary but within a one-mile buffer

**Key:**

**State Status**

END endangered  
 THR threatened  
 SC special concern  
 SC/P fully protected  
 SC/N no laws regulating use, possession, or harvesting

SC/H take regulated by establishment of open closed seasons  
 SC/FL federally protected as endangered or threatened, but not so designated by WDNR  
 SC/M fully protected by federal and state laws under the Migratory Bird Act..

**Federal Status**

LE listed endangered  
 C candidate for future listing

**PLANTS**

The table below lists plants on the Flambeau River State Forest which are endangered, threatened or of special concern, based on the Natural Heritage Inventory (NHI) database.

**TABLE B.2 FLAMBEAU RIVER STATE FOREST ENDANGERED PLANTS**

Scientific Name	Common Name	State Status	Federal Status
<i>Botrychium minganense</i>	Mingan's Moonwort	SC	
<i>Botrychium oneidense</i> *	Blunt-lobe Grape-fern	SC	
<i>Vaccinium vitis-idaea</i> ssp. minus	Mountain Cranberry	END	
<i>Carex tenuiflora</i>	Sparse-flowered Sedge	SC	
<i>Carex assiniboinensis</i>	Assiniboine Sedge	SC	
<i>Galium brevipes</i>	Swamp Bedstraw	SC	
<i>Arethusa bulbosa</i>	Swamp-pink	SC	

\*Documented just outside of the FRSF boundary but within a one-mile buffer

**Key:**

**State Status**

- END endangered
- THR threatened
- SC special concern
- SC/P fully protected
- SC/N no laws regulating use, possession, or harvesting

- SC/H take regulated by establishment of open closed seasons
- SC/FL federally protected as endangered or threatened, but not so designated by WDNR
- SC/M fully protected by federal and state laws under the Migratory Bird Act..

**Federal Status**

- LE listed endangered
- C candidate for future listing



## C. WILDLIFE SPECIES OF GREATEST CONSERVATION NEED

The table below list priority Vertebrate Species of Greatest Conservation Need (SGCN) and their natural community associations within the North Central Forest Ecological Landscape. That is, those high priority situations where all of the following are true: a) there is a high or moderate probability that the SGCN occurs in manageable numbers in the ecological landscape, b) the SGCN is significantly or moderately associated with the natural community, and c) the ecological landscape represents a major opportunity to manage or sustain that natural community. Wisconsin's Wildlife Action Plan provides the details on management for species and its habitats.

**Major:** A major opportunity for sustaining the natural community in the Ecological Landscape exists, either because many significant occurrences of the natural community have been recorded in the landscape or major restoration activities are

likely to be successful maintaining the community's composition, structure, and ecological function over a longer period of time.

**Important:** Although the natural community does not occur extensively or commonly in the Ecological Landscape, one to several occurrences do occur and are important in sustaining the community in the state. In some cases, important opportunities may exist because the natural community may be restricted to just one or a few Ecological Landscapes within the state and there may be a lack of opportunities elsewhere.

**Present:** The natural community occurs in the Ecological Landscape, but better management opportunities appear to exist in other parts of the state.

**TABLE C.1 OPPORTUNITIES TO SUSTAIN THE NATURAL COMMUNITIES IN THE NORTH CENTRAL FOREST ECOLOGICAL LANDSCAPE**

Species Name	MAJOR													IMPORTANT					PRESENT									
	Alder Thicket	Bedrock Glade	Coldwater streams	Coolwater streams	Emergent Marsh	Ephemeral Pond	Impoundments/Reservoirs	Inland lakes	Moist Cliff	Northern Hardwood Swamp	Northern Mesic Forest	Northern Sedge Meadow	Northern Wet Forest	Northern Wet-mesic Forest	Open Bog	Submergent Marsh	Warmwater streams	Warmwater rivers	Boreal Forest	Boreal Rich Fen	Emergent Marsh - Wild Rice	Floodplain Forest	Northern Dry-mesic Forest	Shrub Carr	Lake Superior	Northern Dry Forest	Surrogate Grasslands	
American Bittern	1				3							3			3						1			1				1
American Marten									1	3	1	1						3			1	3				1		
American Woodcock	3				1				2	2	1	1	1	1				1			1	1	3		1	1		
Bald Eagle						3	3									2	3			1	1				2			
Black-backed Woodpecker										1		3	1	1				2					1			2		
Black-billed Cuckoo	3								1	2	1	1						1				2	1	3		1		
Black-throated Blue Warbler											3								1				2					
Boreal Chickadee												3	1						2									
Boreal Chorus Frog					3	3	3	3				3			3													
Canada Warbler	2								3	2		2	3						3	2			2	1		1		
Four-toed Salamander	3		2	2	3	3		1	2	3	2	2	3	3				2				3		3				
Gilt Darter																3	3											
Golden-winged Warbler	3								2	2		2	1	2					1	1			2	3		2		
Gray Wolf	3								2	3	1	3	3	2					3	1		2	3	2		2		
Hoary Bat	2		3	3	2	3	1	2		2	2	2	2	2	2	2	2	2	2	2		2	2	2	2		2	

**TABLE C.1 OPPORTUNITIES TO SUSTAIN THE NATURAL COMMUNITIES IN THE NORTH CENTRAL FOREST ECOLOGICAL LANDSCAPE**

	MAJOR														IMPORTANT				PRESENT									
	Alder Thicket	Bedrock Glade	Coldwater streams	Coolwater streams	Emergent Marsh	Ephemeral Pond	Impoundments/Reservoirs	Inland lakes	Moist Cliff	Northern Hardwood Swamp	Northern Mesic Forest	Northern Sedge Meadow	Northern Wet Forest	Northern Wet-mesic Forest	Open Bog	Submergent Marsh	Warmwater rivers	Warmwater streams	Boreal Forest	Boreal Rich Fen	Emergent Marsh - Wild Rice	Floodplain Forest	Northern Dry-mesic Forest	Shrub Carr	Lake Superior	Northern Dry Forest	Surrogate Grasslands	
<b>Species Name</b>	<b>Species that are Significantly Associated with the North Central Forest Landscape</b>																											
Lake Sturgeon							3	3									3										3	
Least Flycatcher									2	3			1						2			2	2	1		2		
Lesser Scaup				1		2	2								3	2				2					1			
Longear Sunfish								2								2	2											
Mink Frog	2	2	3	3	2	3	3		1	1	3	1	1	3	3	3	3	1	2	2				2				
Northern Flying Squirrel									2	3		3	3						3			2	3				2	
Northern Goshawk									1	3			1						2				2				1	
Northern Harrier	1			1							3			2						1				1			3	
Olive-sided Flycatcher	1											3	2	2					2				1	1			1	
Osprey						3	3								1	3					1				1			
Red Crossbill										1		1							1				3				3	
Red-shouldered Hawk					3				1	2			1									3	2				1	
Silver-haired Bat	2	3	3	2	3	1	2		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Spruce Grouse												3		2						2							2	
Trumpeter Swan				3		2	2				1			1	3	1					3					1		
Veery	3								3	2		2	1						3			2	2	3			1	
Water Shrew	2	3	3			1	2		3	2	1	3	3	1		1	2	3	1			2		1				
Whip-poor-will		2									1											1	2				2	
Wood Thrush									1	2		1	1										2	1				
Wood Turtle	3	3	3		2				2	3	2	2	2		3	3	3					3		3				
Woodland Jumping Mouse	1				2				2	3	1	2	2	1					2			2	1	1			1	
	<b>Species Moderately Associated with the North Central Forest Landscape</b>																											
Black Tern				3		2	2				2					2					2					1		
Bobolink											3			2														3
Brown Thrasher																										1	2	
Canvasback				1		2	2								3	3					2				1			
Cerulean Warbler										1												3						
Connecticut Warbler												2		2					1	2			1				3	

**TABLE C.1 OPPORTUNITIES TO SUSTAIN THE NATURAL COMMUNITIES IN THE NORTH CENTRAL FOREST ECOLOGICAL LANDSCAPE**

	MAJOR														IMPORTANT				PRESENT										
	Alder Thicket	Bedrock Glade	Coldwater streams	Coolwater streams	Emergent Marsh	Ephemeral Pond	Impoundments/Reservoirs	Inland lakes	Moist Cliff	Northern Hardwood Swamp	Northern Mesic Forest	Northern Sedge Meadow	Northern Wet Forest	Northern Wet-mesic Forest	Open Bog	Submergent Marsh	Warmwater rivers	Warmwater streams	Boreal Forest	Boreal Rich Fen	Emergent Marsh - Wild Rice	Floodplain Forest	Northern Dry-mesic Forest	Shrub Carr	Lake Superior	Northern Dry Forest	Surrogate Grasslands		
<b>Species Name</b>	<b>Species Moderately Associated with the North Central Forest Landscape</b>																												
Eastern Red Bat	2		3	3	2	3	1	2		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Greater Redhorse						2	2									2	3												
Moose	3		1	1	3	2	3		3	2	2	2	3	2	3	2	2	3	1		2	1	3		1				
Mudpuppy			2	1		3	3									3								3					
Northern Long-eared Bat	2		3	3	2	3	1	2		2	2	1	1	2	2	2	2	1	2		2	2	2		2				
Pickereel Frog	2		3	3	3	3	3	2		2	3	2	2	2	3	3	3					2	2						
Rusty Blackbird	2				2	2								2								3	2						
Sharp-tailed Grouse											2			1										1				2	
Solitary Sandpiper	1		2	2	3	3					1			2			2					3	1						

- Key:**
- 1 = Species is (and/or historically was) only minimally associated with the Ecological Landscape, restoration of this Ecological Landscape would only minimally improve conditions for the species.
  - 2 = Species is (and/or historically was) moderately associated with the Ecological Landscape, restoration of this Ecological Landscape would moderately improve conditions for the species.
  - 3 = Species is (and/or historically was) significantly associated with the Ecological Landscape, restoration of this Ecological Landscape would significantly improve conditions for the species.

## D. NATURAL RESOURCES USED BY LOCAL NATIVE AMERICAN TRIBES

The Ojibwe<sup>1</sup> had long lived in the Lake Superior region (portions of modern-day Minnesota, Wisconsin, Michigan, and Canada) by the time European explorers first entered the area. At that time, the Ojibwe lived a semi-nomadic lifestyle, moving seasonally from camp to camp, harvesting from the earth (aki<sup>2</sup>) vital foods, medicines, utility supplies, and ceremonial items.

As more Europeans moved into the Lake Superior region in search of timber and minerals, the United States government obtained vast parcels of land from the Ojibwe through cession treaties. In many of these treaties, the Ojibwe retained the rights to hunt, fish, and gather in the ceded territories to meet economic, cultural, spiritual, and medicinal needs — in essence, to sustain their lifeway. Tribal negotiations for these rights were fastidious and purposeful, and only through the guarantee of these rights, did the tribes agree to sign the treaties. Today, these reserved usufructory rights are often referred to as treaty rights.

Treaties that reserved these rights include the Treaty of 1836, ceding land in Michigan's Upper and Lower Peninsulas and parts of the Upper Great Lakes; the Treaty of 1837, ceding land in north central Wisconsin and east central Minnesota; the Treaty of 1842 ceding land in northern Michigan and Wisconsin and the western part of Lake Superior; and the Treaty of 1854, ceding land in northeastern Minnesota and creating reservations for many Ojibwe tribes.

For many years following the ratification of these treaties, the Ojibwe continued to hunt, fish, and gather as always. However, over the years, as states passed various conservation laws, state game wardens enforced these laws against tribal members. Members exercising their treaty rights off reservation within the ceded territories were frequently cited and convicted in state courts. Many members paid fines, endured the confiscation of their rifles and fishing gear, and suffered incarceration.

Though the Ojibwe have always believed in the continued existence of their treaty rights, it was not until the 1970's, as part of a general resurgence of tribal self-determination, that Ojibwe governments and their members more aggressively and more formally challenged state conservation laws and enforcement activities. These challenges gave rise to many federal and state court decisions which reaffirmed Ojibwe off reservation treaty rights on public lands in the ceded territories<sup>3</sup>.

The courts confirmed the Ojibwe's understanding of their treaty rights: The treaties provide a "permanent" guarantee "to make a moderate living off the land and from the waters ... by engaging in hunting, fishing and gathering as they had in the past."<sup>4</sup> In essence, the courts found the Ojibwe treaties

to be legally binding agreements to be respected within the framework of the United States Constitution, which defines treaties as the "supreme law of the land."

In addition, the courts recognized that by reserving the rights to engage in hunting, fishing, and gathering, the Ojibwe also retained their sovereignty to regulate tribal members exercising these treaty rights. Sovereignty refers to the right of inherent self-government and self-determination. Thus, tribal self-regulation is a requisite of treaty rights implementation.

As the courts reaffirmed the Ojibwe's ceded territory treaty rights, a number of tribes<sup>5</sup> in Michigan, Minnesota and Wisconsin chose to enhance their self-regulatory infrastructures through the formation of the Great Lakes Indian Fish and Wildlife Commission (GLIFWC)...[GLIFWC] assists its member tribes with issues such as the application of tribal self-regulation within the off-reservation ceded territories, identification and condition assessment of treaty resources, negotiations and consultation with state and federal government agencies regarding the management of treaty resources within the ceded territories, and litigation pertaining to the treaties of member tribes.

*excerpted from Danielsen and Gilbert 2002 Nontimber Forest Products in the United States*

<sup>1</sup> There are several terms used in reference to the Ojibwe people. The Ojibwe people often call themselves Anishinaabe which in their language means Indian person or original people. The anglicized word for Ojibwe is Chippewa.

<sup>2</sup> Ojibwe language

<sup>3</sup> See *People v. Jondreau*, 384 Mich 539, 185 N.W. 2d 375 (1971); *State of Wisconsin v. Gurnoe*, 53 Wis. 2d 390 (1972); *U.S. v. Michigan*, 471 F.Supp. 192 (W.D. Mich. 1979); *Lac Courte Oreilles v. Voigt (LCO II)*, 700 F.2d 341 (7th Cir. 1983), cert. denied 464 U.S. 805 (1983); *Lac Courte Oreilles v. State of Wisconsin (LCO III)*, 653 F.Supp. 1420 (W.D. Wis. 1987); *Lac Courte Oreilles v. State of Wisconsin (LCO IV)*, 668 F.Supp. 1233 (W.D. Wis.1987); *Lac Courte Oreilles v. State of Wisconsin (LCO V)*, 686 F.Supp. 226 (W.D. Wis. 1988); *Lac Courte Oreilles v. State of Wisconsin (LCO VI)*, 707 F.Supp. 1034 (W.D. Wis. 1989); *Lac Courte Oreilles v State of Wisconsin (LCO VII)*, 740 F.Supp. 1400 (W.D. Wis. 1990); *Lac Courte Oreilles v. State of Wisconsin (LCO VIII)*, 749 F.Supp. 913 (W.D. Wis. 1990); *Lac Courte Oreilles v. State of Wisconsin (IX)*, 758 F.Supp. 1262 (W.D. Wis. 1991); *Lac Courte Oreilles v. State of Wisconsin (X)*, 775 F.Supp. 321 (W.D. Wis. 1991); *U.S. v. Bresette*, 761 F.Supp. 658 (D. Minn. 1991); *Mille Lacs Band v. State of Minnesota*, 861 F.Supp. 784 (D. Minn. 1994); *Mille Lacs Band v. State of Minnesota*, 952 F.Supp. 1362 (D. Minn. 1997); *Mille Lacs Band v. State of Minnesota*, 124 F.3d904 (8th Cir. 1997); *State of Minnesota v. Mille Lacs Band*, 119 S.Ct. 1187 (1999).

<sup>4</sup> LCO III, 653 F.Supp. 1420, 1426 (W.D. Wis. 1987).

<sup>5</sup> GLIFWC's current member tribes include: in Wisconsin – the Bad River Band of the Lake Superior Tribe of Chippewa Indians, Lac du Flambeau Band of Lake Superior Chippewa Indians, Lac Courte Oreilles Band of Lake Superior Chippewa Indians, Red Cliff Band of the Lake Superior Chippewa Indians, St. Croix Chippewa Indians of Wisconsin, and Sokaogon Chippewa Community of the Mole Lake Band; in Michigan – Bay Mills Indian Community, Keweenaw Bay Indian Community, and Lac Vieux Desert Band of Lake Superior Chippewa Indians; and in Minnesota – Fond du Lac Chippewa Tribe and Mille Lacs Band of Chippewa Indians.

## E. GLOSSARY OF TERMS

**Active Management:** These areas apply primarily in the forest production areas and use general forest management prescriptions. Activities are achieved through clearcutting, selective cutting, thinning, timber stand improvement, natural or forced regeneration, herbicide treatments, and/or prescribed burning. These activities would be consistent with standard silvicultural practices associated with the forest timber types found in the area and are generally scheduled in the property's reconnaissance (inventory). Each management area will have a goal and objective consistent with site capabilities and forest cover types. While species composition would remain relatively consistent during the life of the master plan, the age class distribution would change due to timber harvesting. Forest users should expect to see ongoing annual vegetation manipulation.

**Adaptive Management:** A dynamic approach to forest management in which the effects of treatments and decisions are continually monitored and used, along with research results, to modify management on a continuing basis to ensure that objectives are being met.

**Basal Area:** The basal area of a tree is usually defined as the cross-sectional area at breast height in square feet.

**Biological Diversity:** The variety and abundance of species, their genetic composition, and the communities, ecosystems and landscapes in which they occur. Biological diversity also refers to the variety of ecological structures, functions, and processes at any of these levels.

**Community Restoration:** The practice of community restoration recognizes that communities, species, structural features, microhabitats, and natural processes that are now diminished or absent from the present landscape have a valuable role to place in maintaining native ecosystems. Under some definitions, community restoration means moving the current composition and structure of a plant community to a composition and structure that more closely resembles that of the pre-settlement vegetation.

**DNR Silviculture and Forest Aesthetics Handbook:** Silviculture is the practice of controlling forest composition, structure, and growth to maintain and enhance the forest using a unified, systematic approach. The management recommendations are basic guidelines intended to encourage vigor within all developmental stages of a forest, whether managed in an even-age or uneven-age system. The practice of silviculture is an art and a science which recognizes the specific ecological capabilities

and characteristics of the site for both short-term and long-term impacts. Integrated resource management objectives, such as aesthetics, wildlife, endangered resources, biological diversity, timber production, and the protection of soil and water quality are part of this system.

**DNR Old Growth and Old Forests Handbook:** These management recommendations provide basic, adaptive guidelines based on research and general scientific and silvicultural knowledge of the species being managed. The recommendations are subject to purposeful, on-the-ground modification by the land manager. Old growth forests are rare in Wisconsin and are valued for many ecological, social, and economic purposes. Current forests will change with time, and can provide an opportunity to restore old growth forests at the stand level, and in some places at a landscape scale. The Department of Natural Resources formally recognized and encouraged the management of old growth forests in Wisconsin's Biodiversity as a Management Issue. Wisconsin's state land master planning process, formalized in Chapter NR 44, Wis. Adm. Code, includes old growth forest as a critical consideration.

**Extended Rotation Stands:** Stands that can be either even or uneven-aged. They are managed well beyond the economic rotation to capture ecological benefits associated with mature forests. These stands are carried beyond their normal economic rotation age and are harvested before reaching pathological decline.

**Forest Cover Type:** A category of forest usually defined by its vegetation, particularly its dominant vegetation as based on percentage cover of trees.

**Forest Structure:** A category of forest usually defined by its vegetation, particularly its dominant vegetation as based on percentage cover of trees.

**Invasive Species:** These species have the ability to invade natural systems and proliferate, often dominating a community to the detriment and sometimes the exclusion of native species. Invasive species can alter natural ecological processes by reducing the interactions of many species to the interaction of only a few species.

**Managed Old Forest:** Designated forests (relict, old growth, or old forests) where future active management is limited, and the primary management goal is the long-term development and maintenance of some old growth or old forest ecological attributes within environments where limited management practices and product extraction are allowed.

**Managed Old Growth:** The primary management goal is the long-term development and maintenance of old growth characteristics within environments where limited but active land management, including logging is allowed. Practices which could be considered include insect control, salvage logging, prescribed fire, and prescribed logging.

**Passive Management:** A management technique that means the goals of the native community management area are achieved primarily without any direct action. Nature is allowed to determine the composition and structure of the area. For example, patches of large woody debris and the accompanying root boles (tip-up mounds) that are characteristic of old growth structure are best achieved through natural processes. Passive management, however, does not mean a totally hands off approach. Some actions are required by law, such as wildfire suppression, consideration of actions when severe insect and disease outbreaks affect trees, and hazard management of trees along trails and roads. Other actions, such as removal of invasive exotic species, are necessary to maintain the ecological integrity of the site.

**State Natural Areas:** Tracts of land or water harboring natural features that have escaped most human disturbance and that represent the diversity of Wisconsin's native landscape. They contain outstanding examples of native biotic communities and are often the last refuges in the state for rare and endangered plant and animal species. They may also contain exceptional

geological or archaeological features. The finest of the state's natural areas are formally designated as State Natural Areas.

**Sustainable Forestry:** The practice of managing dynamic forest ecosystems to provide ecological, economic, social, and cultural benefits for present and future generations.

**Type 1 Recreational Use Setting:** Objective of this setting is to provide a remote, wild area where the recreational user has opportunities to experience solitude, challenge, independence and self-reliance.

**Type 2 Recreational Use Setting:** Objective of this setting is to provide a remote or somewhat remote area with little development and a predominantly natural-appearing environment offering opportunities for solitude and primitive, non-motorized recreation.

**Type 3 Recreational Use Setting:** Objective of this setting is to provide readily accessible areas with modest recreational facilities offering opportunities at different times and places for a variety of dispersed recreational uses and experiences.

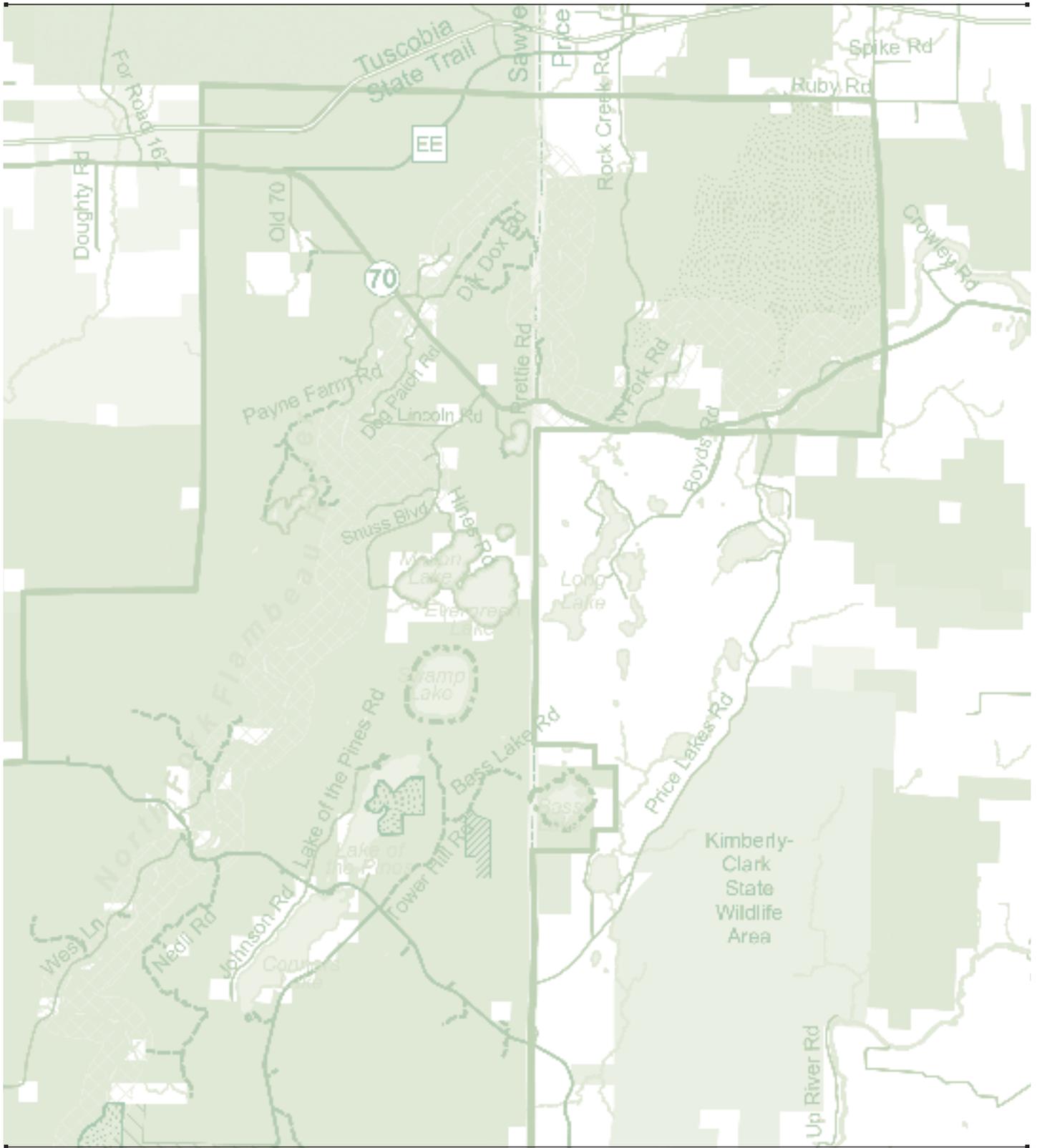
**Type 4 Recreational Use Setting:** Objective of this setting is to provide areas offering opportunities for intensive recreational use activities and expectations. Facilities, when present, may provide a relatively high level of user comfort, convenience and environmental protection.



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