

COUNTY FOREST COMPREHENSIVE LAND USE PLAN

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2/16/2021

**CHAPTER 800**

**INTEGRATED RESOURCE MANAGEMENT**

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## **800 CHAPTER OBJECTIVES**

To introduce and communicate to the public, the County Board of Supervisors, and to the Wisconsin DNR, the integrated resource approach that forestry, wildlife and other natural resource staff will use on the Florence County Forest during this planning period.

## **805 INTEGRATED RESOURCE MANAGEMENT APPROACH**

Integrated Resource Management is defined as: "the simultaneous consideration of ecological, physical, economic, and social aspects of lands, waters and resources in developing and implementing multiple-use, sustained yield management" (Helms, 1998).

This balance of ecological, economic, and social factors is the framework within which the Florence County Forest is managed.

**The working definition of Integrated Resource Management means, in large part, keeping natural communities of plants and animals and their environments healthy and productive so people can enjoy and benefit from them now and in the future.**

The remainder of this chapter is written to help communicate how the Forest is managed on an integrated resource approach.

## **810 SUSTAINABLE FORESTRY**

"the practice of managing dynamic forest ecosystems to provide ecological, economic, social and cultural benefits for present and future generations" NR 44.03(12) Wis. Adm. Code and s.28.04(1)(e), Wis. Stats.

**For the purpose of this chapter, sustainable forestry will be interpreted as the management of the Forest to meet the needs of the present without knowingly compromising the ability of future generations to meet their own needs (economic, social, and ecological) by practicing a land stewardship ethic which integrates the growing, nurturing, and harvesting of trees for useful products with the**

**conservation of soil, air and water quality, and wildlife and fish habitat. This process is dynamic, and changes as we learn from past management.**

## 810.1 TOOLS IN INTEGRATED RESOURCE MANAGEMENT

### 810.1.1 Compartment Recon

The County will support and utilize the compartment reconnaissance procedures as set forth by the DNR Public Forest Lands Handbook 2460.5. WisFIRS serves as the database for housing recon information.

### 810.1.2 Forest Habitat Classification System

The Forest Habitat Classification System (*A Guide to Forest Communities and Habitat Types of Northern Wisconsin Second Edition; Kotar, et al.*) is a natural classification system for forest communities and the sites on which they develop. It utilizes systematic interpretation of natural vegetation with emphasis on understory species.

Forest Habitat Classification Types are discussed in greater detail in the "Integrated Resource Management Units" (Section 880) section of this chapter.

### 810.1.3 Soil Surveys

Forestry staff's knowledge of forest ecology and their experience across the landscape can assist in associating forest habitat types and site indices with soil type information. These associations can be beneficial in determining management prescriptions for specific sites. WisFIRS contains soil survey data, and this information can also be found on the NRCS website-based soil survey.

### 810.1.4 Ecological Landscapes of Wisconsin

The Wisconsin DNR uses Ecological Landscapes of Wisconsin (WDNR Handbook 1805.1) which is an ecological land classification system based on the National Hierarchical Framework of Ecological Units (NHFEU). Ecological landscapes distinguish land areas different from one another in ecological characteristics. A

combination of physical and biological factors including climate, geology, topography, soils, water, and vegetation are used. They provide a useful tool and insight into ecosystem management. Land areas identified and mapped in this manner are known as ecological units.

Generally accepted silvicultural systems are prescribed on a stand level scale, in recognition of the position within an ecological landscape.

#### 810.1.5 Integrated Pest Management

“The maintenance of destructive agents, including insects, at tolerable levels, by the planned use of a variety of preventive, suppressive, or regulatory tactics and strategies that are ecologically and economically efficient and socially acceptable”

The Committee has the authority to approve and direct the use of pesticides and other reasonable alternatives in an integrated pest management program on the Forest.

Refer to Chapter 600 (610.3) for more detailed discussion and integrated pest management strategies.

#### 810.1.6 Best Management Practices for Water Quality

The most practical and cost-effective method to assure that forestry operations do not adversely affect water quality on the Florence County Forest is to utilize "best management practices" (BMP's) as described in *Wisconsin's Forestry Best Management Practices for Water Quality. Publication number FR-093.*

Consistent with the aforementioned manual (page 6), Florence County will use BMP's on the Forest with the understanding that the application of BMP's may be modified for specific site conditions with guidance from a forester or other natural resource professional. Modifications will provide equal or greater water quality protection or have no impact on water quality. Areas with highly erodible soil types, proximity to streams or lakes, or steep slopes may require mitigating measures in excess of those outlined in the manual. All Florence County employees

practicing forestry will receive BMP training. Additionally, Florence County will encourage BMP training of all logging contractors that operate on county timber sales.

#### 810.1.7 Fire Management

Reference Chapter 600.

##### 810.1.7.2 Prescribed Fire

Prescribed burning on the County Forest may play an important role in management. Many of the plant communities present today are the result of wild fires.

As the needs are presented to regenerate or maintain timber types or other plant communities, the Committee will examine the costs and benefits of each opportunity. Increased regulations, the county's cost of completing the burn, and the risk of breakouts and uncontrolled fires will have to be considered with any benefits of vegetation management through prescribed burning.

All prescribed burning will be done in accordance with Wisconsin State Statutes 26.12, 26.14, and the DNR Prescribed Burn Handbook 4360.5 and in cooperation with the Department of Natural Resources per section 605.5 of this plan.

#### 810.1.8 Outside Expertise, Studies and Survey

Additional data necessary to make management decisions on the County Forest will be sought from agencies or individuals, who have the best capability and technical expertise, including, but not limited to:

- Water Resources: WDNR
- Wildlife Resources: WDNR
- Soil Resources: NRCS
- Mineral Resources: WDNR
- Wetland Resources: WDNR, Army Corps of Engineers, County Zoning
- Navigable Streams: WDNR, Army Corps of Engineers, County Zoning



- Floodplains: County Zoning
- Cultural Resources: WDNR, State Historical Society
- Entomology / Pathology: WDNR
- Endangered Resources: WDNR
- Forestry: Cooperative Field Trials, see WDNR website
- Other subjects as needed

#### 810.1.9 Local Silvicultural Field Trials

To date, numerous field trials have been completed or are ongoing on the Florence County Forest. These trials include:

- Oak Wilt Disease Control
- Use of Wood Ash for increase survival of Pine Plantations.

## **815 MANAGEMENT CONSIDERATIONS TO REDUCE LOSS**

### 815.1 RISK FACTORS

#### 815.1.1 Wind

After a significant wind event such as a tornado or straight-line winds, the priority is to open or clear roads for access into the damaged area(s) for assessment and planning of salvage operations.

For economic and forest health considerations, pine stands shall be prioritized for salvage timber sales. Pine that was damaged by the storm should be salvaged as soon as possible as it will begin to stain and has serious potential for insect attacks such as bark beetles. Aspen and Hardwood stands should follow with the goal of regenerating these timber types while capturing the value of the timber. Uprooted trees, and those with completely broken tops will die and should be salvaged. A general rule is to salvage the tree if more than 50% of the crown or top is broken out. Trees that are leaning or are root sprung may have broken roots or broken stem fibers and should be considered a risk to fail or fall.

### 815.1.2 Flooding

Flooding may cause direct damage or mortality to trees by changing soil conditions and interrupting the normal oxygen and carbon dioxide exchange between the trees and their environment. Flooding can also weaken trees, making them susceptible to damage from wind, insects and disease. Changing water tables due to tree mortality from insect and disease such as emerald ash borer and eastern larch beetle may increase the possibility of flooding in stands dominated by black ash and tamarack. Salvage or pre-salvage harvests may be appropriate in stands that are at risk .

### 815.1.3 Fire

See Chapter 600, Section 605.

### 815.1.4 Timber markets

Timber Markets have become more volatile over the last two decades due to changing global demand that has caused a number of mills to close in the region. Most of these mills have relied on low value forest products such as pulpwood, leaving fewer markets for this fiber to be consumed. Veneer and sawtimber demand have been steady with the Florence County Forest providing raw material to these local and regional sawmills.

## **820 PLANT COMMUNITIES MANAGEMENT**

Florence County recognizes the importance of maintaining the diversity of the forest under an ecosystem approach. The process involved in making management decisions to encourage or not encourage specific species or communities is complex. It includes an understanding of:

- Objectives of the County
- Integration of landforms, soils, climate, and vegetative factors
- Habitat classification
- Past, present and future desired condition
- Surrounding ownership patterns and general objectives
- Wildlife habitat and other values

- Social needs

## 820.1 SILVICULTURAL PRACTICES/TREATMENTS

Silviculture is the art and science of controlling forest composition, structure, and growth to maintain and enhance the forest's utility for any purpose. These practices are based on research and general silviculture knowledge of the species being managed. The goal is to encourage vigor within all developmental stages of forest stands, managed in an even aged or uneven aged system. The application of silviculture to a diverse forest needs a unified, systematic approach. The DNR Public Forest Lands Handbook (2460.5) and DNR Silvicultural Guidance will be used as guidelines for management practices used on the County Forest.

### 820.1.1 Natural Regeneration

Where feasible, natural regeneration will be encouraged through the use of silvicultural methods that promote regrowth and recruitment of the forest. In general, the particular silvicultural method chosen will depend on the biological functions of the target species or forest type.

#### 820.1.1.1 Clearcutting/Coppice

Clearcutting is a silvicultural method used to regenerate shade intolerant species. Complete, or nearly complete removal of the forest canopy will stimulate the regeneration and growth of species such as aspen, jack pine and white birch. This method is also used as a final rotation removal in species such as red oak, red pine and others. Tree retention guidelines are followed when prescribing clearcut or coppice cuts.

#### 820.1.1.2 Shelterwood / Seed Tree

Shelterwood harvest is a method used to regenerate mid-shade tolerant and shade tolerant species. Partial canopies stimulate regeneration, enhance growth and can provide seed source. Canopies are eventually removed. This method is used for white birch, white pine, red oak, and northern hardwood (when managing even

aged).

#### 820.1.1.3 All Aged Regeneration Harvests

All aged regeneration harvests are used in shade tolerant species. Gaps in the forest canopy allow regeneration to occur throughout the stand. Over time, multiple entries into the stand will create multiple age class structure with the intent of creating a fully regulated stand. All aged regeneration harvests may be prescribed in the form of single tree selection, group selection or patch selection. This method is used in northern hardwood and occasionally in swamp hardwoods (when managing for all aged)

#### 820.1.1.4 Prescribed Burning

Prescribed burning may be utilized as a tool to promote regeneration. A number of forest types in Florence County are ecologically tied to fire. Burning may create seeding conditions or release regeneration from competing vegetation. Prescribed fire may be used for regeneration of red oak, jack pine or white pine. Prescribed burning has not been used on the Florence County Forest but it could be a tool to be used in the future.

#### 820.1.1.5 Soil Scarification

Scarification is a technique used to prepare a seedbed beneath forest stands scheduled for harvest and regeneration. This mechanical disturbance that exposes bare mineral seedbeds and creates conditions necessary for regeneration of pine species as well as Oak and some Northern Hardwoods. Disturbance that mixes seed into duff and soil layers creates optimal conditions for regeneration of oak, white birch, fir and others. Florence County utilizes salmon blades, root rakes, straight blade, and anchor chains for soil scarification.

#### 820.1.1.6 Other

Other natural regeneration techniques may be considered where necessary and

appropriate. New methods for natural regeneration are continually tested for effectiveness.

#### 820.1.2 Artificial Regeneration

When natural regeneration fails, or when tree species present do not coincide with management objectives for the site, artificial means will be employed to establish a desirable stand of trees. Artificial regeneration on a site usually requires some form of site preparation followed by seeding or planting.

##### 820.1.2.1 Mechanical Site Preparation

Mechanical site preparation includes the use of soil disturbance equipment such as a disc, roller chopper, patch scarifier, disk trencher or V-plow prior to tree planting or seeding. These types of equipment are used to reduce logging debris to a smaller size, incorporate debris into the soil, clear brush and debris from the site, and to reduce competition from other vegetation.

##### 820.1.2.2 Chemical Site Preparation

Herbicide application can be an effective means of controlling unwanted vegetation in order to establish seedlings or plantations. It should be used sparingly and in situations where mechanical treatment is not expected to provide the level of vegetative control needed. Chemical will be applied in strict accordance with label recommendations, requirements, and under the oversight of a certified applicator. Herbicides will normally be applied with motorized, ground based equipment, hand applications, or aurally. A written prescription for each herbicide application will be prepared and kept on file.

##### 820.1.2.3 Prescribed Burning

Prescribed burning for site preparation can be used to reduce logging debris, clear the site, reduce competing vegetation, and to release nutrients into the soil.

#### 820.1.2.4 Tree Planting / Seeding

Both machine and/or hand planting/seeding will be utilized to insure adequate regeneration. The selection of species will be determined according to the specific management objectives and capabilities of each site. Planting or seeding will primarily occur in areas where natural regeneration is inadequate or conflicts with the management goals of the site. County will make all reasonable efforts to source seeds/seedlings from local genetics.

### 820.1.3 Intermediate Treatments

Intermediate treatments are those practices used to enhance the health and vigor of a forest stand. In general, intermediate treatments are applied to forest stands managed as even aged.

#### 820.1.3.1 Mechanical Release

Mechanical release is the removal of competing vegetation by means other than herbicide or fire. Mechanical may include releasing young pine plantations from competing vegetation using chain saws or other hand-held equipment; or mowing to release regeneration.

#### 820.1.3.2 Chemical Release

Chemical Release is the removal of competing vegetation from desirable trees through the use of herbicides. It should be used sparingly and in situations where mechanical treatment is not expected to provide the level of vegetative control needed. Chemical will be applied in strict accordance with label recommendations, requirements and under the oversight of a certified applicator. A written prescription for each herbicide application will be prepared and kept on file.

### 820.1.3.3 Non-Commercial Thinning (TSI)

In general, most thinning needs are accomplished through commercial harvest operations. Non-commercial thinning may be considered if the individual site requirements, funding and/or available labor make it desirable.

### 820.1.3.4 Thinning / Intermediate Cuts

Management of some even aged forest types necessitates the use of commercial thinning, also known as intermediate harvests, to maintain forest health and vigor. Thinning is generally prescribed in forest types such as red pine, red oak, and in cases of even aged hardwood management. Thinning may be prescribed on other even aged types as appropriate and where feasible. Intermediate harvests include prescriptions for residual densities, marking priorities, spacing, crown closure, diameter distribution, or other measurements.

## 820.2 SILVICULTURAL PRESCRIPTIONS

### 820.2.1 Even-Aged Management

A forest stand composed of trees having relatively small differences in age. Typical cutting practices include: clear cutting, shelterwood cutting and seed-tree cutting. Even aged management is generally required to manage shade intolerant, early successional forest types. Below is 4 major types found on the Florence County Forest.

#### 820.2.1.1 Aspen

These are types where aspen trees comprise of more than 50% of the stems. On the forest, aspen types may be dominated by quaking or big tooth aspen or a combination of both. Aspen stands contain a wide variety of associated hardwood and conifer species.

<u>Shade tolerance:</u>	Intolerant
<u>Intermediate treatments:</u>	None
<u>Median rotation age:</u>	50
<u>Primary regeneration method:</u>	Natural
<u>Harvest method:</u>	Clearcutting with coppice
<u>Habitat value:</u>	Early successional related species

<u>Economic value:</u>	Fiber production / bolts
<u>Insect disease considerations:</u>	Hypoxylon and other cankers
<u>Trends:</u>	General declines on statewide acreage
<u>Landscape considerations:</u>	Retain/increase acreages where possible

#### 820.2.1.2 Jack Pine

These are types where jack pine makes up more than 50% of the stems. Common associates on the Florence County Forest are pin oak, aspen, and white birch.

<u>Shade tolerance:</u>	Intolerant
<u>Intermediate treatments:</u>	None
<u>Median rotation age:</u>	50
<u>Primary regeneration method:</u>	Natural/Artificial
<u>Harvest method:</u>	Clearcutting
<u>Habitat value:</u>	Early successional related species
<u>Economic value:</u>	fiber production
<u>Insect disease considerations:</u>	Jack Pine Bud Worm
<u>Trends:</u>	General declines statewide
<u>Landscape considerations:</u>	Retain/increase acreages where possible

#### 820.2.1.3 Red Pine

These are types where red pine makes up more than 50% of the stems. Red Pine stands are most commonly a one species stand with some pin oak and red maple potential in the understory.

<u>Shade tolerance:</u>	Intolerant
<u>Intermediate treatments:</u>	Starting at age 25-30
<u>Median rotation age:</u>	90
<u>Primary regeneration method:</u>	Artificial
<u>Harvest method:</u>	Thinning leading up to Clearcutting
<u>Habitat value:</u>	Early successional related species
<u>Economic value:</u>	fiber production, bolts, telephone poles
<u>Insect disease considerations:</u>	Pocket Decline, HRD
<u>Trends:</u>	General declines statewide
<u>Landscape considerations:</u>	Retain/increase acreages where possible

#### 820.2.1.3 Red Oak

These are types where red oak makes up more than 50% of the stems. Common species associated with red oak stands are red maple, white birch, and aspen.

<u>Shade tolerance:</u>	Mid-tolerant
<u>Intermediate treatments:</u>	Thinning, Shelterwood, overstory removal



<u>Median rotation age:</u>	90-120
<u>Primary regeneration method:</u>	Natural, with scarification methods
<u>Harvest method:</u>	Thinning leading up to clearcutting
<u>Habitat value:</u>	Early successional related species
<u>Economic value:</u>	fiber production, bolts, high quality sawlog
<u>Insect disease considerations:</u>	Oak Wilt, Two lined Chestnut Borer
<u>Trends:</u>	General declines statewide
<u>Landscape considerations:</u>	Retain/increase acreages where possible

## 820.2.2 Uneven-Aged Management

A forest stand composed of trees in various age and size classes. The typical cutting practice is selection cutting, where individual trees are removed from the stand. Regeneration is continually occurring after the stand is cut. Uneven-aged management is generally used to manage shade tolerant forest types.

### 820.2.2.1 Northern Hardwood

These are stands dominated by shade tolerant and mid-shade tolerant species. In Florence County, northern hardwood stands are typically dominated by sugar maple, white ash, basswood, and red oak.

<u>Shade tolerance:</u>	tolerant to mid-tolerant
<u>Habitats:</u>	
<u>Intermediate treatments:</u>	As needed
<u>Median rotation age:</u>	n/a
<u>Primary regeneration method:</u>	natural – all aged regeneration
<u>Harvest method:</u>	single tree, gaps
<u>Habitat value:</u>	high
<u>Economic value:</u>	fiber production, bolts, high quality sawlog
<u>Insect disease considerations:</u>	emerald ash borer, Sugar Maple Borer...
<u>Trends:</u>	General Stable
<u>Landscape considerations</u>	Retain acreages where possible

## 820.3 LOCALLY UNCOMMON TREES / FOREST TYPES

The presence or lack of a particular tree species is dependent on land capability, climate, natural range, natural or human disturbance and many other factors. The following trees and types are considered uncommon on the Florence County Forest and likely across the general region. These trees may be left as reserves in even aged management

prescriptions, or in thinnings and all aged regeneration harvests.

820.3.1 American Elm (*Ulmus americana*.) is scarce primarily due to Dutch elm disease. Healthy looking elm may be left uncut in hope that they may continue on the landscape as potential resistant seed sources.

820.3.2 Butternut (*Juglans cinerea*) is declining due to butternut canker. Healthy individuals that appear to be canker free will be reserved in the forest as potential resistant seed sources.

820.3.3 Eastern Hemlock (*Tsuga canadensis*) is a highly preferred deer and small mammal browse species. Regeneration is difficult and remnant stands will be retained to provide seed sources for future management activities

820.3.4 Shagbark Hickory (*Carya Ovata*) is relatively rare in Florence County. There is one know location on the Florence County Forest and these trees have been retained for species diversity.

820.3.5 White Oak (*Quercus Alba*) is not an uncommon tree to Wisconsin. However, this tree is relatively rare in Florence County. When this tree is found it is retained for its wildlife values.

#### 820.4 FOREST TYPES REQUIRING INTENSIVE EFFORT TO REGENERATE

There are certain forest types within the County Forest that are difficult to regenerate. In many cases, this difficulty may be related to the exclusion of fire from the landscape, deer herbivory or other factors. The following list itemizes forest types with difficult regeneration and county management goals:

##### 820.4.1 White Birch

White birch is a shade intolerant species normally found in even aged stands. It appears white birch evolved to regenerate after disturbances such as fire. The county is committed to retain as much of the existing acreage of white birch as possible.

Regeneration efforts will include pre-sale salmon blade scarification.

#### 820.4.2 Northern Red Oak

Northern red oak is a shade intolerant to mid tolerant species found in primarily even aged stands. Northern red oak appears to require disturbance to regenerate and herbivory appears to be a limiting factor on regeneration success. The county is committed to retain as much of the existing acreage of northern red oak as possible. Regeneration efforts will focus on timing soil scarification with good acorn crops and shelterwood harvests. Regeneration may require prescribed burning to release seedlings from competing vegetation.

#### 820.4.3 Northern Hardwoods

Northern hardwoods are shade tolerant to mid tolerant species found in primarily even and uneven aged stands. Northern hardwoods do not typically need disturbance to regenerate and herbivory appears to be a limiting factor on regeneration success. The County is committed to retain as much of the existing acreage of northern hardwoods as possible. Regeneration efforts will focus on timing soil scarification timber harvest to expose mineral soils and reduce grass competition. Other efforts to reduce herbivory will also be explored.

### 820.5 INVASIVE PLANT SPECIES OF CONCERN

Invasive plants can cause significant damage to the forest. Invasive species can displace native plants and hinder the forest regeneration efforts. Preventing them from dominating forest understories is critical to the long-term health of the forest. There are a number of invasive plant species in varying densities on the county forest. Some warrant immediate and continual treatment efforts while others may be allowed to remain due to extent and financial ability to control them. The county will continue to train staff in invasive species identification as well as attempt to secure funding sources to control them as much as is practical. Below is a list of known invasive plants on the Florence County Forest.

- Garlic Mustard

- Buckthorn
- Spotted Knapweed
- Wild Parsnip
- Barberry
- Honey Suckle
- Autumn Olive
- Swamp Thistle

#### 820.6 LEGALLY PROTECTED AND SPECIAL CONCERN PLANT SPECIES

There are plants in Wisconsin that are protected under the Federal Endangered Species Act, the State Endangered Species Law, or both. On county forest, no one may cut, root up, sever, injure, destroy, remove, transport or carry away a listed plant without a valid endangered or threatened species permit. There is an exemption on public lands for forestry, agriculture and utility activities under state law. The county will, however, make reasonable efforts to minimize impacts to endangered or threatened plants during the course of forestry/silviculture activities (typically identified in the timber sale narrative).

The Wisconsin Department Natural Resources Bureau of Natural Heritage Conservation tracks information on legally protected plants with the Natural Heritage Inventory (NHI) program. The NHI program also tracks Special Concern Species, which are those for which some problem of abundance or distribution is suspected, but not yet proven. The main purpose of this category is to focus attention on certain species before they become threatened or endangered.

The county has access to this data under a license agreement and is committed to reviewing this database for endangered resources that may occur within proposed land disturbing project areas.

## 820.7 TREE RETENTION GUIDELINES

Please see the link below for the most recent WDNR Tree Retention Guidelines. In general Florence County Forest Management follows these guidelines. If staff chooses to deviate from these guidelines reasoning will be outlined in the 2460 Timber Sale Narrative.

<https://dnr.wi.gov/topic/ForestManagement/documents/24315/24.pdf>

## 820.8 BIOMASS HARVESTING GUIDELINES

Please see the link below for the most recent WDNR Biomass Harvesting Guidelines. In general Florence County Forest Management follows these guidelines. If staff chooses to deviate from these guidelines reasoning will be outlined in the 2460 Timber Sale Narrative.

<https://councilonforestry.wi.gov/Pages/WoodyBiomass/Overview.aspx>

## 825 ANIMAL SPECIES MANAGEMENT

Florence County Forest provides a wide range of wildlife habitats from open grasslands/barrens to mature forests, from bogs to forested wetlands, from spring ponds to lake shorelines. A primary goal of wildlife management on the Florence County Forest is to provide a diversity of healthy ecosystems necessary to sustain and enhance native wildlife populations. This forest will be managed primarily to provide habitats for a suite of species rather than focusing on a specific species, with exceptions made for Federal or State Listed Endangered or Threatened Species.

### 825.1 TECHNICAL PLANNING

Management of wildlife populations on the Florence County Forest falls under the jurisdiction of the DNR. Planning may be a cooperative effort of the Florence County Forest staff, DNR liaison forester and wildlife manager in formulating management plans and utilizing forest and wildlife management techniques to accomplish desired forest and wildlife management goals.

## 825.2 GUIDELINES

DNR operational handbooks including the Public Forest Lands Handbook (2460.5), manual codes and guidance documents are important references and guidelines to utilize in fish and wildlife planning efforts.

## 825.3 INVENTORY

Habitat needs will be determined by analysis of forest reconnaissance information. Population estimates will be conducted periodically by DNR wildlife, endangered resources personnel, and other trained cooperators. Currently, Department Wildlife staff conduct the following surveys on or adjacent to the Florence County Forest:

- Biotic Inventories
- Summer deer observations
- Brood surveys
- Furbearer tracking
- Frog and Toad Surveys
- Bat Monitoring
- Bear bait surveys
- Snapshot Wisconsin

## 825.4 RESOURCE MANAGEMENT CONSIDERATIONS FOR WILDLIFE

The following areas of focus are identified for achieving plan objects and for benefit of wildlife.

### 825.4.1 General Management Policies

Forest management practices may be modified to benefit wildlife and diversity. The following will be considered when planning for management activities:

- Even-aged regeneration harvests (clearcuts) should vary in size and shape and include retention considerations.
- A diversity of stand age, size and species.
- Mast-bearing trees and shrubs, cavity trees, and an adequate number and variety of snags.

- Cull trees (future snag or den trees) not interfering with specific high value trees.
- Timber types, habitat conditions and impacts on affected wildlife.
- Access management.
- Best management practices for water quality (BMP's).

## 825.5 IMPORTANCE OF HABITATS

Important habitat types are those cover types known to be of importance to certain native wildlife and whose absence would make that wildlife significantly less abundant. These shortages may be on a local or broader scale. The following habitat types can be considered important:

### 825.5.1 Non-forested wetlands

The Florence County Forest contains 1,472 acres of non-forested wetland types providing a variety of habitats for common, rare and endangered species. Emergent wetland, sedge meadow, muskeg bog and deep marsh provide habitat for species such as wood turtle, black tern, American bittern, and numerous other species.

### 825.5.2 Aquatic habitats

The Florence County Forest includes 228 acres of lakes, rivers, streams, ponds and other aquatic habitats. Open water provides habitat for species such as wood duck, boreal chorus frog, water shrew and many other species reliant on water related resources.

### 825.5.3 Riparian and other non-managed areas

Undisturbed shoreline and riparian areas present on the forest and provide habitat for species such as red shouldered hawk, green frog, and woodland jumping mouse.

### 825.5.4 Early successional forests

Management of aspen, white birch, jack pine and other shade intolerant species creates habitat for a large suite of wildlife species that benefit from early successional forests. On the Florence County Forest there are currently 26,304 acres of these forest types present. This is a key habitat used for recreational hunting activities providing conditions

favorable for American woodcock, ruffed grouse, white-tailed deer and non-game species such as golden-winged warbler, Kirkland's warbler and black-billed cuckoo.

#### 825.5.5 Conifers

Conifers, whether jack pine, white pine, spruce, fir or other types appear to be an important habitat for a number of wildlife species. The Florence County Forest currently has 7428 acres of coniferous habitat. Connecticut warbler, red crossbill, northern flying squirrel, and many others utilize conifer types. Jack pine areas can be managed to provide temporary barrens habitat providing habitat for Kirtland's warbler and other barren related species.

#### 825.5.6 Oak management

Oak is an important mast producing food source on the forest, providing acorns for a wide variety of game and non-game species. The Florence County Forest has 2,845 acres of oak habitat. It is considered a critical resource to retain on the landscape for both its timber and wildlife value, providing habitat for species such as scarlet tanager, wood thrush, red headed woodpecker, and black bear.

#### 825.5.7 Uneven/all aged management

Management of uneven aged stands provides for multi-storied canopies, diverse age structure and potentially older forest characters. The Florence County Forest has approximately 3,128 acres being managed under an all aged management system. Species such as Canada warbler, little brown bat, black throated blue warbler and many others benefit from these forest type, in addition, numerous amphibian and reptiles utilize these forest types.

#### 825.5.8 Large forest blocks

Large blocks of county forest provide habitat for numerous interior species. Gray wolf, black throated blue warbler, Canada warbler and least flycatcher are a few examples of animals that rely on these large blocks.



#### 825.5.9 Grasslands, openings, upland brush

Wildlife openings, grass rights-of-way, natural openings, upland brush and other upland open habitats provide for diversity and unique habitats benefitting pollinators, numerous species including upland plover and whip-poor-will. The Florence County Forest currently has 462 acres identified as open grassland or upland brush habitat.

### 825.6 INTENSIVE WILDLIFE MANAGEMENT PROJECTS

Florence County has several Grouse Management areas. Wildlife \$.05 per acre funds, Pittman-Roberts Funds, as well as other grant funding that may be available are used for managing these areas. With help from the local wildlife biologist projects are planned for these areas as needed. Typical work includes, mowing, disking/seeding, and brushing.

- Tower Ruffed Grouse Area
- Kretz Hunter Walking Trails
- Lake Emily Hunter Walking trails
- Hall's Creek Hunter walking trails
- Duck Lake Hunter Walking trails

#### 825.6.1 Wisconsin Wildlife Action Plan / Species of Greatest Conservation Need (SGCN)

In addition to species listed as endangered, threatened or special concern within the NHI database, the Department also maintains a statewide list of species of greatest conservation need.

This list includes species that have low or declining populations and may be in need of conservation action. The list includes birds, fish, mammals, reptiles, amphibians and insects that are:

- Already listed as threatened or endangered
- At risk due to threats
- Rare due to small or declining populations
- Showing declining trends in habitat or populations

The WWAP working list can provide information on how management activities may impact, or in many cases benefit species of greatest conservation need. More information is available on the WWAP website: <https://dnr.wi.gov/topic/wildlifehabitat/actionplan.html>.

## 825.7 FISH AND WATERS MANAGEMENT

Public waters shall be managed to provide for optimum natural fish production, an opportunity for quality recreation, and a healthy balanced aquatic ecosystem. Emphasis will also be placed on land-use practices that benefit the aquatic community. Management of county forest lands will attempt to preserve and/or improve fish habitat and water quality.

### 825.7.1 Technical Planning and Surveys

Management of all waters within the county forest is the responsibility of the DNR. Technical assistance will be provided by the local fisheries biologist. Studies and management will be conducted in the manner described in DNR Fish Management Handbook 3605.9. Water and population surveys fall under the jurisdiction of the department and will be conducted as needed by fisheries biologists. Florence County Forestry and Parks Staff have been engaged in fisheries surveys throughout Florence County. Florence County will continue to work in cooperation with the DNR for fisheries enhancement.

### 825.7.2 Special Fisheries Projects

Below is a list of projects that have taken place in Florence County. Some of these projects have direct involvement from resources coming off of the Florence County Forest, while other involved staff time from the Florence County Forestry and Parks Department.

- Lake Emily Walleye Reef installation
- Keyes Lake Fish Stick project
- Popple River Stream enhancement

### 825.7.3 Shoreland Zoning

Shoreland zoning applies to several areas on the Florence County Forest. Every effort will be made to include the zoning department on matters where shoreland zoning will affect management of the Florence County Forest.

### 825.7.4 Access and Development

Access and development of County Forest waters will be limited to those activities consistent with the above water management policies. See Chapter 740 also for further information on water access.

### 825.7.5 Important Water Resources

Every water resource in Florence County is considered important. However, the only water resource with special management considerations is the Pine-Popple Wild Rivers. These rivers have special setback and restrictions for harvesting within the Shoreland Zoning Ordinances.

## **830 EXCEPTIONAL RESOURCES, UNIQUE AREAS**

### 830.1 HCVF FOR FSC AND DUAL CERTIFIED COUNTIES

The DNR established criteria for establishing HCVFs on state lands is found below. For the purpose of this plan, the county recognizes this criterion for identifying HCVFs on county land. At this Plan's approval, there are no identified HCVFs on Florence County Forest lands. This does not preclude the county from identifying other unique areas that do not meet the definition of HCVFs.

<https://dnr.wisconsin.gov/sites/default/files/topic/TimberSales/HCVFcertWDNR.pdf>

#### HIGH CONSERVATION AREAS

- Forest areas containing globally, regionally or nationally significant concentrations of biodiversity values including RTE species.
- Forest areas containing globally, regionally or nationally significant large landscape level forests, contained within, or containing the management unit, where viable populations of most if not all naturally occurring species exist in

natural patterns of distribution and abundance.

- Forest areas that are in or contain rare, threatened or endangered ecosystems.
- Forest areas that provide basic services of nature in critical situations (e.g., watershed protection). **Wisconsin does not have known locations meeting this criterion.**
- Forest areas fundamental to meeting basic needs of local communities (e.g. subsistence, health of indigenous communities) **Wisconsin does not have known locations meeting this criterion.**
- Forest areas critical to local communities' traditional cultural identity (e.g. areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

## 830.2 AREAS RECOGNIZED BY STATE OR FEDERAL GOVERNMENT

### 830.2.1 Spread Eagle Barrens State Natural Area

Florence County Forest lands has land that lie within the boundaries of the State Natural Area. Management of the County Forest lands within the boundaries of the Spread Eagle Barrens are not managed as a State Natural Area. However, the County does assist the DNR with their management goals on the Spread Eagle Barrens State Natural Area.

### 830.2.2 Pine-Popple Wild Rivers

Florence County has lands within the DNR acquisition boundary of this property. This does not affect the management of the County Forest except for special setback requirements along the river edge as set in the Florence County Shoreland Zoning Ordinance.

## 830.3 AREAS RECOGNIZED BY COUNTY OR LOCALLY

Florence County may contain areas that are locally considered exceptional or unique. Some are recognized by other agencies, while others are designated only within this plan. These resources may include wild rivers, lakes, natural areas, geological features or historical/archeological sites.

### 830.3.1 Forests with Old Growth Characteristics

Currently no stands fit this definition, if stands are located that do meet these characteristics they will be managed accordingly.

#### 830.3.2 Wildlife Sites (Hibernacula, Rookeries, Special Habitats)

These sites will be managed in cooperation with DNR wildlife staff.

#### 830.3.3 Savannas, Barrens, etc.

These stands will follow Endangered Resources guidelines. We will be consult with NHC staff for management techniques.

#### 830.3.4 Geological Features of Significance – None known on the Florence County Forest

#### 830.3.5 Waterfalls, Wild Rivers, Wild Lakes – Pine-Popple Wild Rivers

#### 830.3.6 Unique Forest Types, Benchmark Stands, etc – None on the Florence County Forest

#### 830.3.7 Endangered or Threatened Species Habitat

On these sites Florence County will consult with NHC staff for management assistance.

### 830.4 CULTURALLY SIGNIFICANT SITES

#### 830.4.1 Burial mounds, cemeteries

No known burial mounds or cemeteries.

#### 830.4.2 Logging Camps, Dams, Forest History

There is one Logging Camp site in the Town of Fence. There are several dams controlling water levels on area lakes as well as the Hall's Creek Dam that creates Hall's Lake Flowage.

## 835 AESTHETICS

Public perception of forestry has changed over the last planning period and in general it appears that the public is much more accepting of the visual impact of sound forestry. In response to this, aesthetic management planning is intended to be much more simplified in this Plan.

### 835.1 AESTHETIC MANAGEMENT

Aesthetic management techniques may be applied in areas of high visibility or high

public use. Altered management, visual screens, slash disposal, conversion to other species, no cut zones or other methods may be employed, depending on the circumstances of the specific site.

## 835.2 AESTHETIC MANAGEMENT ZONES

Aesthetic Management Zones include areas where there may be high levels of public presence because of scenic attraction, or some use of the area that would be enhanced by special timber management practices.

### 835.2.1 Aesthetic Management Zone Examples

- Park and recreation areas
- Lakes and rivers with significant recreational use
- Roads with heavy traffic or scenic drive.

### 835.2.2 Aesthetic Management Prescriptions/Options

- Adjustment timing of timber harvesting
- Slash restrictions/requirements
- Staggered Harvests / Visual Screens
- Forced conversion to longer lived species
- Irregular harvest lines, interrupted sight distances

### 835.2.3 Regulated Aesthetic Management Zone Areas

#### 835.2.3.1 Wild Rivers Zone

This is an area extending out from the Pine-Popple Wild Rivers from the river's edge. Within this area the county is limited in what can be removed from the stand. This is explained in the County Shoreland Zoning Ordinance.

## 840 LANDSCAPE MANAGEMENT

The county will make efforts to evaluate surrounding landscapes while managing the County Forest. The county will strive to provide management that compliments the

landscapes, but also try to provide for resources or forest types that are lacking or declining within surrounding landscapes.

#### 840.1 CONSERVATION OF BIOLOGICAL DIVERSITY

For the purposes of this plan, biological diversity will be interpreted to reference the variety and abundance of species, their genetic composition, and the communities, ecosystems, and landscapes in which they occur. Forest management activities on the Florence County Forest enhance biological diversity by managing for a wide variety of habitat types, age structures and by attempting to perpetuate and protect declining forest types.

#### 840.2 HABITAT FRAGMENTATION

For the purposes of this plan, habitat fragmentation is interpreted as conversion of forests to land uses other than forestry. Lands enrolled in the County Forest Law help protect against habitat fragmentation. A continued program of encouraging land acquisition within the forest blocking boundary is intended to decrease the conversion of forest land to other uses.