

COUNTY FOREST COMPREHENSIVE LAND USE PLAN

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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 Jackson 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 Jackson 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 Central and Southern 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.

The Forest Habitat Classification System is an ecological tool that promotes a common language for interpreting site capability based on potential natural vegetation. Its primary use is the assessment of biological potential of upland forest sites. Through the application of Forest Habitat Classification, land managers are better able to assess site potential of current stands, identify ecological and silvicultural alternatives, predict the effectiveness of possible silvicultural treatments, assess feasible management alternatives, and choose appropriate management objectives.

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 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.

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

810.1.7 Fire Management- 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

815 MANAGEMENT CONSIDERATIONS TO REDUCE LOSS

815.1 RISK FACTORS

815.1.1 Wind

Wind damage on the forest will be evaluated as quickly as possible after the event. If accessible, the timber will be salvage by whatever means practical. Large acreages maybe set up as single timber sales. Smaller areas may be incorporated into an existing sale if the contractor agrees.

815.1.2 Flooding

In the past flooding has not been a major issue on Jackson County Forest, but that may change if we continue to receive above average annual precipitation. It may be necessary to harvest stands earlier in their rotation age in order salvage flooded timber, while also looking at other regeneration options if certain areas continue to flood on a regular basis.

815.1.3 Fire

Within Jackson County there are large blocks of contiguous forest land; this land is prone to catastrophic fires under the right environmental conditions. In the year 1977 the Brockway Fire burned 17,000 acres and is proof of the large fire potential. A vast network of county forest roads, woods roads and recreational trails are present throughout

the county. These travel ways will serve as access for fire suppression equipment, while also serving as firebreaks. All forestry staff have basic wildland suppression training and carry suppression equipment in their trucks during dry conditions. The Wisconsin DNR is the first line of defense for wildfire suppression within the county. The DNR has fire suppression staff and equipment stationed out of Black River Falls, equipment includes but is not limited to: one Type 8 Engine, two Type 6 Engines, five Type 4 Engines with tractor plows, one UTV and a surplus of wildland hose, pumps and hand tools. For public awareness, the DNR has placed seven “You are Entering a High Hazard Area” wildfire signs along roads leading to Hatfield; which is an area of concern in the event of a large fire.

815.1.4 Climate Change

The effects of climate change will be addressed as they arise and have impact on the Jackson County Forest. Future planning will consist of using science-based strategies to find the best path forward, possible changes may include: favoring native species that are adapted to future conditions, preventing the introduction and establishment of invasive plant species, and improving the capability of the forest to resist pests and pathogens.

815.1.5 Timber Markets

Markets for raw forest products are highly variable and can change quickly. In the time it takes to establish, advertise and then harvest a sale the markets have likely changed several times. The Jackson County Forest will strive to provide a variety of species at different age classes during bid openings. This approach will provide contractors with diverse products for the quickly changing marketplace. The Jackson County Forest will work on having an up to date and accurate schedule of its forest harvesting practices. This will allow for stands that are not currently marketable to be scheduled on a later date, while limiting loss of production.

820 PLANT COMMUNITIES MANAGEMENT

Jackson 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 Jackson 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.

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. Disturbance that mixes seed into duff and soil layers creates optimal conditions for regeneration of oak, white birch, fir and others. Jackson County utilizes root rakes, straight blade, anchor chain 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 record of the area treated along with the quantity and application rate will be 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. Chemical will be applied in strict accordance with label recommendations, requirements and under the oversight of a certified applicator. A record of the area treated along with the quantity and application rate will be 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.

820.1.3.5 Pruning

Pruning is the removal of limbs from lower sections of trees to increase log quality. Major pruning efforts were conducted in the past but it is not generally recognized as economically viable on the forest.

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.

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.

The aspen type is recognized as providing habitat values to a wide variety of wildlife species as well as being an important species for economics and fiber production.

The extent of this vital resource has been steadily declining since the 1960s. The chief reasons for the decline are: 1) lack of harvest as stands reaches maturity 2) natural succession and 3) selective harvest. In all instances, the end result is conversion to more shade tolerant timber types or non-commercial brush species.

Jackson County is committed to maintaining its aspen acreage and will accomplish this by regenerating the mature aspen stands through the use of clearcuts.

Aesthetic concerns can be mitigated by retaining pine and/or hardwood tree species on the sites, limiting the size of harvests, and creating irregularly shaped sale boundaries.

| | |
|---------------------------------------|---|
| <u>Shade tolerance:</u> | Intolerant |
| <u>Habitats:</u> | PVHa, PVGy, ArDe-V |
| <u>Intermediate treatments:</u> | None |
| <u>Median rotation age:</u> | 50 |
| <u>Primary regeneration method:</u> | Natural |
| <u>Harvest method:</u> | 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. Jack pine is a shade intolerant species that occurs throughout the sand regions of the Forest and is managed on even-aged bases.

From a landscape perspective, the jack pine type is declining as it is converted either successional or through planting to another species. Jackson County Forest should attempt to minimize conversion of jack pine to other species in order to stem long-range decline of this forest type.

| | |
|---------------------------------------|---|
| <u>Shade tolerance:</u> | Intolerant |
| <u>Habitats:</u> | PVGy, PVHa |
| <u>Intermediate treatments:</u> | None |
| <u>Median rotation age:</u> | 45 |
| <u>Primary regeneration method:</u> | Natural or Artificial. Stand specific |
| <u>Harvest method:</u> | Clearcut with reserves |
| <u>Habitat value:</u> | Early Successional related species |
| <u>Economic value:</u> | Fiber production |
| <u>Insect disease considerations:</u> | Budworm, Bark Beetle |
| <u>Trends:</u> | Significant declines on statewide acreage |
| <u>Landscape considerations:</u> | Maintain/increase acreages where possible |

820.2.1.3 Oak

These are types where oak makes up more than 50% of the stems. Oak is a shade intolerant species that is found throughout the areas of the forest and is managed on even-aged bases. This species was maintained and regenerated with repeated uncontrolled fires. With the control of wildfire, other techniques have become necessary to perpetuate this type.

Jackson County has tried a number of silvicultural practices to encourage oak regeneration with varying degrees of success. It is the County's policy to continue to encourage oak where feasible and to keep it as a stand component. Practices such as regeneration cuts, varied sale sizes and shapes, distributions and timing of harvests and varied cutting methods can contribute to oak success.

| | |
|---------------------------------------|--|
| <u>Shade tolerance:</u> | Intolerant |
| <u>Habitats:</u> | PVGy, PVHa, PVRh ArDe-V, ArCi |
| <u>Intermediate treatments:</u> | Thinning |
| <u>Median rotation age:</u> | 80 |
| <u>Primary regeneration method:</u> | Natural |
| <u>Harvest method:</u> | Coppice, Shelterwood, Overstory Removal |
| <u>Habitat value:</u> | Early successional related species |
| <u>Economic value:</u> | Fiber production, bolts, logs |
| <u>Insect disease considerations:</u> | Oak Wilt, Two Lined Chestnut Borer, Gypsy Moth |
| <u>Trends:</u> | Very significant decline statewide |
| <u>Landscape considerations:</u> | Maintain or increase acreage where possible |

820.2.1.4 Red Pine

These are types where red pine makes up more than 50% of the stems. Common

associates in Jackson County are black oak, aspen, and white pine.

| | |
|---------------------------------------|--|
| <u>Shade tolerance:</u> | Intolerant |
| <u>Habitats:</u> | PVGY, PVHa, PVRh ArDe-V, ArCi |
| <u>Intermediate treatments:</u> | Thinning |
| <u>Median rotation age:</u> | 70 |
| <u>Primary regeneration method:</u> | Artificial |
| <u>Harvest method:</u> | Clearcut |
| <u>Habitat value:</u> | Early successional related species |
| <u>Economic value:</u> | Fiber production, bolts, logs, utility poles |
| <u>Insect disease considerations:</u> | Diplodia, Bark Beetle, Heterobasidian Root Disease, Pocket Mortality |
| <u>Trends:</u> | Steady to slight decline in central sands |
| <u>Landscape considerations:</u> | Maintain current acreage |

820.2.1.5 White Pine

These are types where white pine makes up more than 50% of the stems. White pine is an important tree for a number of wildlife species. Total numbers of wildlife species tend to be higher in mixed white pine types than in pure dense stands of old field or pine plantations. As certain Central Forest stands mature they take on old growth characteristics of mainly white pine and oak types.

Jackson County Forest is naturally converting to more white pine as the age of the forest is increasing. The County will encourage white pine where it has been determine using silvicultural methods that it is most suitable species for the site.

| | |
|---------------------------------------|---|
| <u>Shade tolerance:</u> | Intermediate |
| <u>Habitats:</u> | PVGy, PVHa, PVRh, ArDe-V |
| <u>Intermediate treatments:</u> | Thinning |
| <u>Median rotation age:</u> | 90 |
| <u>Primary regeneration method:</u> | Natural |
| <u>Harvest method:</u> | Seed Tree, Shelterwood |
| <u>Habitat value:</u> | Wildlife habitat value decreases in pure dense stands |
| <u>Economic value:</u> | Fiber production, bolts, cabin logs |
| <u>Insect disease considerations:</u> | White pine tip weevil, Blister Rust |
| <u>Trends:</u> | Increasing across the Central Sands |
| <u>Landscape considerations:</u> | Maintain current acreage |

820.2.1.6 Red Maple

These are types where red maple makes up more than 50% of the stems.

Common associates in Jackson County are black oak and white pine.

| | |
|---------------------------------------|---|
| <u>Shade tolerance:</u> | Intermediate |
| <u>Habitats:</u> | PVGY, PVHa, PVRh ArDe-V, ArCi |
| <u>Intermediate treatments:</u> | Thinning |
| <u>Median rotation age:</u> | 70 |
| <u>Primary regeneration method:</u> | Natural |
| <u>Harvest method:</u> | Overstory Removal, Coppice, Shelterwood |
| <u>Habitat value:</u> | Early successional species |
| <u>Economic value:</u> | Fiber production, bolts, logs |
| <u>Insect disease considerations:</u> | Numerous vectors, minor health impacts |
| <u>Trends:</u> | Increasing across the Central Sands |
| <u>Landscape considerations:</u> | Maintain current acreage |

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 White Pine

These are stands dominated by shade tolerant and mid-shade tolerant species. In Jackson County, white pine stands are typically associated with a minor red maple and/or oak component. Although white pine is typically managed on an even-aged basis it can also be managed using uneven-aged techniques such as single tree selection and group selection harvests.

820.3 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:

820.3.1 Jack pine

Jack pine is shade intolerant and is normally regenerated by wildfire. Full sunlight, prepared seedbed, and heat are the key conditions provided by fire. With the control of wildfire, other techniques have become necessary in order to perpetuate this type.

Successful methods used in this county include: 1) pre or post-harvest scarification. This method is most advantageous from an economic and ecological standpoint, lending itself to a more natural condition. Jack Pine sentinel trees maybe left to assure adequate seed source. 2) Direct seeding following some sort of site disturbance. 3) Planting has been successful; however, it requires more expenditure and administration.

820.3.2 Oak

Oak tends to favor habitat types that are also suitable for white pine and red maple species. On many sites, normal thinning practices tends to promote these other species. In many cases regeneration under nearly pure oak stands trends toward red maple and white pine. Over time, the shade tolerant seral stage will replace the oak. The difficulty in regenerating oak on these sites appears to be related to lack of soil disturbance and the increase competition from white pine and red maple with the removal of fire from the landscape.

Oak has very high wildlife value due to its mast production and tendency to produce cavities that are suitable for wildlife dens. It also has high timber value in pulpwood and saw log-sized timber. Because of these factors, oak is important to be retain on the Jackson County Forest.

Silvicultural trials on adjacent County Forest using prescribed burns coupled with shelterwood harvests appear to be successful. However, conducting prescribed burns on

a large scale has proven difficult. Scarification and other methods will continue to be investigated.

820.4 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. The current list of invasive plants includes: Buckthorn, Garlic Mustard, Honeysuckle, Spotted Knapweed, Phragmites and Eurasian Milfoil. More information on each of these species can be found in chapter 605.5.3.

820.5 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.

820.6 TREE RETENTION GUIDELINES

There can be a number of benefits achieved through the retention of reserve trees. Tree retention benefits include: cavities for critters, nesting trees, food, diversity, and limit line of sight. Reserve tree retention is a general recommendation for stands greater than 10 acres. Tree retention can be evenly or irregularly dispersed individuals, groups, and patches.

There is also cost associated with tree retention including: additional cost, increased predation, reduce growth rates and regeneration. Stand and site conditions may limit options where it is advantages not to have tree retention this should be discussed in the sale write up.

820.7 BIOMASS HARVESTING GUIDELINES

Jackson County will use Wisconsin's Forestland Woody Biomass Harvesting Guidelines Field Manual on the Forest with the understanding that the application of the guidelines may be modified for specific site conditions with guidance from a forester or other natural resource professional.

825 ANIMAL SPECIES MANAGEMENT

Jackson 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 river and stream corridors. A primary goal of wildlife management on the Jackson County Forest is to provide a diversity of healthy ecosystems necessary to sustain and enhance a broad range of 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 or for species unique to Jackson County. Due to the diversity of habitats found within the Jackson County Forest, the county forest supports a wide-range of wildlife species.

825.1 TECHNICAL PLANNING

Management of wildlife populations on the Jackson County Forest falls under the jurisdiction of the DNR. Planning may be a cooperative effort of the 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. Regular communication between these parties will ensure management goals are achieved.

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 Jackson County Forest:

- Biotic Inventories

- Summer deer observations
- Upland game bird brood surveys
- Furbearer tracking
- Frog and Toad Surveys
- Bat Monitoring
- Bear population surveys
- Carnivore surveys
- Snapshot Wisconsin
- Additional surveys as needed

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).
- Invasive Species Management

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 Jackson County Forest contains 25,000 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 massasauga rattlesnake, wood turtle, black tern, American bittern, and numerous other species.

825.5.2 Aquatic habitats

The Jackson County Forest includes 1,475 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 Jackson County Forest there are currently 60,249 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. The recently reintroduced elk herd in Jackson County also benefits greatly from the presence of early successional forests.

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 Jackson County Forest currently has 36,100 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 Jackson County Forest has 18,656 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, wild turkey 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 Jackson County Forest has 100 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 wild turkey, elk, white-tailed deer, upland plover and whip-poor-will.

Jackson County Forest currently has 1,233 acres identified as open grassland or upland brush habitat.

825.5.10 Barrens

Jackson County is host to both pine and oak barrens. These savanna communities are hosts to many rare and endangered species, along with many of the game species that inhabit Jackson County. They provided for diversity and unique habitats that benefit numerous species. Jackson County Forest currently has 710 acres identified as barrens habitat.

Bauer Brockway Barrens: 170 acres

Glenn Creek Barrens: 140 acres

Millston Sand Barrens: 400 acres

825.6 INTENSIVE WILDLIFE MANAGEMENT PROJECTS

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> .

825.6.2 Elk Reintroduction

Elk were reintroduced into Jackson County in 2015 and 2016. Jackson County was determined to be a suitable reintroduction location in Wisconsin due to its abundance of public land, high-quality habitat, and strong public support for this native species. The reintroduction effort is a partnership between WDNR, Jackson County Forestry and Parks, Ho-Chunk Nation, Jackson County Wildlife Fund, and the Rocky Mountain Elk Foundation. Habitat management efforts focused on the creation and maintenance of early successional forest habitat and grassland/forest opening habitat will ensure the long-term success of the reintroduction.

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.

825.7.2 Special Projects

Lake Wazee is a 146-acre lake and is considered the deepest lake in Wisconsin. Recently, efforts were taken to establish a naturally reproducing population of Cisco in the lake. In 2011 and 2013, Cisco were transferred from Vilas County and planted into Lake Wazee, the DNR is continually monitoring the population for evidence of natural reproduction.

825.7.3 Shoreland Zoning

All the shoreland areas within Jackson County are governed by Jackson County Chapter 16, Shoreland Zoning Ordinance. If a proposed project is within 300 feet of a river, creek or stream, or within 1000 feet of a lake, pond or flowage there may be restrictions for the development.

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.

825.7.5 Important Water Resources

Management activities adjacent to these water resources, or in areas with sensitive soils or severe slopes, should consider measures above and beyond the customary BMP practices. County staff may work with the local DNR water resources staff to develop site-specific measures where appropriate. An inventory of water resources can be obtained from DNR Water staff for the County.

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. This does not preclude the county from identifying other unique areas that do not meet the definition of HCVPs.

<https://dnr.wi.gov/topic/TimberSales/documents/DNRLandsHCVFSelectionCriteriaFinal.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).

The HCVPs on Jackson County Forest are designated as Wisconsin State Natural Areas.

Currently, known HCVP are centered on 7 State Natural Areas:

WISCONSIN STATE NATURAL AREAS: Jackson County manages a variety of property designations including Wisconsin State Natural Areas (SNA). The SNA system represents the wealth and variety 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. The Wisconsin SNA program works with counties to further recognize outstanding native biotic communities that Jackson County is presently managing as exceptional areas. SNA's are unique in that

they can exist as stand alone properties or be designated within the boundaries of another property type. Jackson County maintains its land ownership, management and decision-making authority, but with cooperative recognition of these sites the county can enhance its ability to provide a broader range of opportunities for the citizens.

DNR State Natural Areas staff will work cooperatively with the County Forest by coordinating educational, monitoring, and research activities. Assistance on management projects can provide the county with more resources to accomplish necessary management. Management will protect the unique character of the area. The importance of the Wisconsin State Natural Areas has been recognized on the County Forest by cooperating with the Department staff in designating and managing 3,850 acres of the County forest for 7 SNA sites.

BAUER-BROCKWAY BARRENS (170 acres): This site is a blend of sand prairie and barrens on nearly level terrain and sandy soils characteristic of Glacial Lake Wisconsin. Excellent plant species composition and exceptional insect diversity led to recognition of this site. The site is also an important location for the recovery of the Karner Blue butterfly. This location has received much management attention in the past ten years and will continue to receive management in the future. Many agencies and volunteers have worked at the site. Bring together multiple partners has allowed the county to manage more effectively with better financial efficiency than it would have been able to achieve alone. The site will continue to be given special recognition as a Wisconsin State Natural Area. Specific management practices and commitments by Jackson County are detailed in the Species and Habitat Conservation Plan (SHCP)

DEER ISLAND/NORTH FLOATER: Three units covering approximately 2,000 acres is best opportunity for recognizing a large block of wet forest at the core of the Central Sand Plains. White pine and red maple dominate narrow bands at the wetlands upland interface. This community is only found in the Central Sand Plains and harbors several rare plant species. Up slope, the forest become oak dominated and will be managed as forest production. The wetter portion has tamarack, black spruce and white pine, which eventually thins to the point of becoming a bog birch and open poor fen. These forests

provide habitat for many boreal species well south of their normal range including Hermit Thrush, Blue-headed Vireo, and Golden-crowned Kinglet. Rare Wisconsin species – Golden-winged Warbler, Canada Warbler, Connecticut Warbler, and Jutta Arctic Butterfly seem to thrive at this site. These types of natural communities have received little recognition for their ecological reference attributes in the past. These three units would be mostly managed passively except to control insect pest, invasive species, or fire.

BEAR BLUFF WETLANDS: Five units covering approximately 300 acres have native communities similar to Deer Island/North Floater. These five blocks of county forest land are imbedded in a much larger forest of tamarack, black spruce and white near Bear Bluff Station. The remaining part of the forest is in private ownership. Although the composition and rare species component is similar to Deer Island/North Floater, the native communities are so rare in the central part of the state that two reference areas are justified. These types of natural communities have received little recognition for their ecological reference attributes in the past. Management would be mostly passively except to control insect pest, invasive species, or fire.

GLENN CREEK BARRENS: Two units covering approximately 140 acres constitute this site. The level sandy uplands along Glenn Creek just east of the confluence with Robinson Creek are superb pine barrens. The jack pine was thinned via budworm outbreak and the ground layer responded to have vigorous growth of barrens ground layer species. Karner Blue Butterfly is common as well as a state-threatened plant species. This type of natural community has received recognition at Bauer-Brockway Barrens for its ecological reference attributes in the past. This natural community is so rare nation wide that another recognition is justified. Management would include regeneration harvests and small scale spots applications of fire to rejuvenate the ground layer species.

BROCKWAY PONDS: Five ponds encompassing the wetlands below the high water mark and covering approximately 50 acres constitute this site. These ponds have dramatically fluctuating water levels and thus shoreline vegetation. Full to the high water

one year can change to nearly dry the next. The lakes have no fishery, but due to the water fluctuation, they harbor several plants that can compete only under these conditions. Many of these species have their main range along the Atlantic Ocean and are referred to as Coastal disjuncts. These coastal plain marshes are found primarily in Marquette and Waushara counties, making this outlier in Jackson County especially significant. This natural community is so rare nation wide that additional recognition is justified. Management would be passive with special emphasis in keeping motorized vehicles off the pond shores during low water cycles.

SPAULDING FEN: Sedge fens are common in the central sand plains, however, nearly every one has been ecologically modified through ditching, roading, mowing, or direct conversion to agricultural beds. Spaulding Fen is one of the least modified of the large fens 479 acres, although much mowing has occurred. Patches with the fen have maintained their ecological integrity. Rare species such as Henslow's Sparrow, LeConte's Sparrow, American Bittern, and Sharp-tailed Grouse have nested on the fen. In addition to the ecological values, the site has exceptional values as a geological interpretation site, because the outlet for Glacial Lake Wisconsin flowed west through Spaulding Fen to the Black River. This natural community is the best remaining sedge fen in the Jackson County Forest and is recognized for its ecological and geological values. Management would be mostly passively except to control insect pest, invasive species, or fire.

MILLSTON SAND BARRENS: An area of approximately 400 acres near the interstate highway with an extensive trail system encompasses this site. An abundant population of Karner Blue Butterfly is found at the site. The area was burned in a wildfire in 1977 and the resulting oak barrens have become more shaded with time. The ground layer is very diverse and is still thriving in the steep slopes of the mounds. After more than 25 years, many oak are less than 30 feet high and on the steep slopes most of the trees are less than 10 feet high. Many sand barrens plants and insect occur on the site. Management will consist of thinning the multi-trunked oaks, occasional fire management after the thinning has occurred and removal of invasive species. Oak Barrens are one of the rarest natural

communities in the nation and the county recognizes this site for ecological values and rare species habitat.

830.2 AREAS RECOGNIZED BY STATE OR FEDERAL GOVERNMENT

830.2.1 State Natural Areas

No State Natural Areas exist on the county forest that are NOT considered HCVF.

830.2.2 State Scientific Areas

State Scientific Areas are a previous designation given to “State Natural Area” and are currently analogous to “State Natural Area”.

830.2.3 Endangered species habitats (Karner Blue Butterfly, Kirtland’s Warbler, etc.)

Pine barrens, Sand prairie, Central poor fen, White pine-red maple swamp, Central sands pine oak forest, Karner blue butterfly high potential range. In addition to these unique natural communities, rare, threatened and endangered plant and animal species exist in the Jackson County Forest.

Karner Blue Butterfly Recovery Areas

In cooperation with the State of Wisconsin and the U.S. Fish and Wildlife Service, Jackson County will maintain approximately 170 acres of barrens habitat in Section 16, Township 21 North, Range 3 West in Brockway Township.

Bear Bluff Peatlands Important Bird Area

The Important Bird Areas (IBA) program is a global initiative that links local and state conservation efforts to national and international efforts to protect essential habitat for all birds. The IBA program is a voluntary, cooperative initiative that aims to identify and protect those sites that are most important to birds in any stage of their life cycle. These sites are considered to be exceptionally significant

for bird conservation.

Jackson County Forest contains one IBA. The Bear Bluff Peatlands site has many species that are at the southernmost part of their range. Boreal species such as Canada Warbler, Connecticut Warbler, Blue-headed Vireo, LeConte's Sparrow, and Northern Saw-whet Owl thrive in these peatlands. Other species that require more open space such as Sharp-tailed Grouse, Northern Harrier, Short-eared Owl, and Golden Eagle are hanging on in this habitat. Two species (Whooping Crane and Trumpeter Swan) that have ongoing intensive restoration efforts are found in this area. Furthermore, some species that are of exceptional conservation concern, such as Golden-winged Warbler and Henslow's Sparrow are found in high numbers. The combined natural values of these species makes the habitat that this site provides one of the most important bird areas in the state.

The IBA encompasses Jackson County land from Martins Marsh just south of Hwy 54 to City Point, then south along the county line. The southern boundary is County Highway HH to Ball Bluff, then north to McKenna Creek to Potters Flowage. Jackson County voluntarily recognizes this IBA. Timber management and recreation opportunities will continue, although some activities may be voluntarily modified to accommodate nesting birds or enhance bird habitat. Any changes in management direction would be approved by the Jackson County Forestry Department with concurrence by the Forestry Committee. An example may be a change in the maximum size of clear cuts to provide for better Sharp-tailed Grouse habitat. Jackson County may seek advice from bird habitat experts. This recognition does not affect any private land, although private landowners may choose to voluntarily participate in the IBA program. A map of the area is found in Chapter 1020.5.

Wisconsin Wildlife Action Plan Conservation Opportunity Areas (COA's)

These sites were designed during the 2005-2015 iteration of Wisconsin's Wildlife Action Plan with the idea of prioritizing land areas as the best places in Wisconsin for management of Species of Greatest Conservation Need and the habitats that they exist in. Significance of each area was ranked from a Global perspective with ecological

significance being ranked as one of the following; Global, Continental, Regional/Upper Midwest, and State. An example for the Jackson county forest is pine barrens. Pine barrens are globally significant because Wisconsin holds the world's responsibility for this natural community. That is, Wisconsin has the best opportunity in the world to manage and maintain this natural community and all of the rare species dependent upon it. The Wildlife Action Plan was developed to keep species from becoming rare to the point where they become federally threatened or endangered thus it is a proactive vs. reactive approach to conservation. Parts of 5 COA's overlap with portions of the Jackson County Forest. This reflects the ecological significance of some lands and waters within the county forest.

A map of Jackson county COA's can be found at:

https://dnr.wi.gov/topic/WildlifeHabitat/documents/COA_PDF/COA_StateLands_Jackson.pdf

Black River COA – Global Ecological Significance

This COA consists of an upland mosaic of slightly elevated land dominated by poor Sandy soils featuring Central Pine-Oak Forest, Southern Dry-Mesic Forest, Oak Barrens, Pine Barrens, Sand Barrens, and Sand Prairie. Embedded wetlands also add significant biodiversity values.

Fort McCoy COA - Global Ecological Significance

This COA consists of Driftless Area natural communities over sandstone influenced soils including a continuum of Sand Prairie, Oak Barrens, Oak Woodland, Southern Dry Forest, Southern Dry-Mesic Forest, Shrub-Carr, and Dry Cliff.

Meadow Valley Sandhill COA – Regional Ecological Significance

This COA consists of predominantly large wetlands with open bogs, shrub swamps, impoundments and sedge meadows including Northern Wet Forest, Alder Thicket, Shrub Carr, White Pine – Red Maple Swamp, Floodplain Forest, Northern Sedge Meadow, and Open Bog.

Morrison Creek COA – Regional Ecological Significance

This aquatic COA consists of cool and warm water streams of Upper Midwest significance due to their diverse invertebrate populations.

Robinson Creek COA - Regional Ecological Significance

This aquatic COA consists of cool and warm water streams of Upper Midwest significance due to their diverse invertebrate populations.

830.2.4 Rare communities

Pine barrens, Sand prairie, Central poor fen, White pine-red maple swamp, Central sands pine oak forest, Karner blue butterfly high potential range.

830.3 AREAS RECOGNIZED BY COUNTY OR LOCALLY

Jackson 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

BIG CUT PINES: this site contains approximately 30 acres of natural origin pine. Management would regenerate these pines when they are biologically mature and attempt regeneration of the stand without planting. A map of this site is found in Chapter 1020.5.

830.3.2 Wildlife Sites

East Fork Ruffed Grouse/Woodcock Management Area

County Forest management compartments 3, 24, 25 and 26 are designated as a ruffed grouse and woodcock management area. The area covers 2,809 acres and lies in City Point Township along the Clark County line, east of Pray Road and north of Knutes Road. The area was established in cooperation with the Ruffed Grouse Society.

Management of the vegetation in this unit will promote aspen and oak forest types. The objectives are as follows.

1. Maintain and expand the aspen and oak acreage.
2. Establish timber harvest areas of relatively small size (20 to 40 acres), and with irregular boundaries to maximize the creation of forest edge.
3. Discourage encroachment of conifer species into aspen and oak types.
4. Create and maintain structural and age class diversity in the aspen and oak types.

Special funding for developing access roads and for establishing timber sales will be sought through grants from the DNR, Ruffed Grouse Society and other special interest groups.

Roads will be seeded to appropriate wildlife food and will be gated to discourage entry by private vehicles. This will protect the access roads for management purposes and will provide a quality hunting experience without vehicular disturbances.

830.3.3 Savannas, Barrens, etc.

BAUER-BROCKWAY BARRENS

MILLSTON SAND BARRENS

GLENN CREEK BARRENS

General management of these 3 barrens sites is described under section 830.1 of this plan.

SKINK HILL: This 160-acre site contains central pine-oak forest and a good population of the five-lined skink. Management would keep the trees thinned to maintain habitat.

830.3.4 Geological Features of Significance

Natural Promontories:

The County Forest landscape is dominated by several natural sandstone mounds and ridges. These promontories are Saddle Mound and Sugar Loaf Mound in City Point Township, Oak Ridge in Manchester Township, Knapp Mound, Ball Mound and the Winkler Hills in Knapp Township, and Bear Bluff in Bear Bluff Township. The County owns parts or all of these natural features.

Each one of these is a well-known landmark. Saddle Mound has historical significance as a unique sandstone quarry that operated on the peak of the mound in the early 1900's. The steep slopes of these mounds and ridges support micro-climates and small plant communities that are not found on the adjacent flat lands, suggesting an ecosystem "island" effect dating back to the cooler climates of the immediate post-glacial period.

Saddle Mound, Oak Ridge, and Knapp Mound are DNR forest protection fire tower sites. Access roads and trails have been developed and are maintained by the DNR for their towers.

To preserve and protect the ridges and mounds listed above Jackson County will implement the following policy.

1. Additional access roads will not be developed to these sites.
2. Appropriate measures will be taken to repair and control erosion on existing roads and trails.
3. Existing vehicular roads will be gated and posted to reduce erosion.
4. Timber harvesting activities will be evaluated for practicality. Aesthetics and preservation will be a higher priority than fiber production. Exceptions would include wildfire, diseases, insect infestation or reestablishment of habitat such as goat prairie or savanna. Such activities will be implemented

with minimum ecological disturbance.

830.3.5 Wild Lakes

The surface waters encompassed under the wild lakes designation include those restricted use areas that are not open to any gasoline or diesel-powered vehicles, water craft, or snowmobiles except when snow covered. In general, all or most of the shorelines of these lakes and streams are owned by Jackson County. Canoes, kayaks, and boats propelled by wind, oars, or electric motors are permitted. The intent of these restrictions is to protect the aquatic resources of these lakes but still allow access. On Jackson County Forest Wazee Lake is designated as a “Wild Lake”.

830.3.6 Unique Forest Types, Benchmark Stands, etc

Forest Wetlands

The sedge meadow wetlands of Central Wisconsin are a dwindling resource, primarily because of drainage, flooding, and agricultural development. These wetlands serve an extremely valuable function as natural “sponges” for collection and storage of water. The wetlands also contain an immense variety of unique fauna and flora, some of which are threatened or endangered. Many of these wetlands also serve as important water reserves for the cranberry industry. This industry is a major part of the County’s economy.

The County owns 20,000 acres of non-forest and spruce/tamarack bog wetlands within the County Forest boundaries. Approximately 2,000 acres of these wetlands are managed as commercial sphagnum moss marshes. Another 2,000 acres are flooded under easements to cranberry growers as water impoundments for their commercial operations.

On the remaining undeveloped wetlands, Jackson County will apply the following policy.

1. New impoundments or flooding of wetlands, open marshes, or alder, spruce or tamarack swamps, will be discouraged.

2. The County will avoid road construction or other activities on or across open marshes whenever possible. When those activities are necessary, they will be installed or conducted in a manner which minimizes impact on the wetland complex.
3. The County may periodically burn wetlands to simulate natural processes which have maintained these ecosystems in the past.

830.4 CULTURALLY SIGNIFICANT SITES

830.4.1 Burial mounds, cemeteries

Management activities such as timber sales are sent to the Ho-Chunk Nation for review of significant archeological sites. Large structures such as cell towers are sent to the Ho-Chunk Nation for review as part of the withdraw process.

830.4.2 Logging Camps

Jackson County has an extensive history of logging camps, abandoned logging railroad grades and old sawmill towns. Most of these were picked up and moved when the logging was done. What is left on the landscape is earth berms from the foundations or grades from the railroads.

Jackson County was lucky to have a local community member that researched and mapped many of the old sites. The County Forest will try to preserve sites that are significant when there is management done.

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.
- Multiple use recreational trails

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

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 Jackson 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.