

LINCOLN COUNTY FOREST FIFTEEN-YEAR COMPREHENSIVE LAND USE PLAN

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CHAPTER 800

INTEGRATED RESOURCE MANAGEMENT

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800 CHAPTER OBJECTIVES

1. 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 Lincoln County Forest during this planning period.
2. To provide "Resource Management Blocks" that will identify and summarize the natural resources, social and physical management potential and opportunities for each block. (These blocks are identified in the Lincoln County Forest Access Plan found in Chapter 900, Appendix.)

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 Lincoln County Forest is managed. This broad definition describes the content of everything within this Comprehensive Land Use Plan. Previous chapters have discussed in depth many of the social and economic issues.

For the purpose of this chapter, the scope of Integrated Resource Management includes:

- Forests, habitats, biological communities
- Wetlands and waters
- Wildlife and endangered resources
- Soils and minerals
- Cultural and historical resources

Management of one resource affects the management or use of other resources in an area. Managing each use or resource by itself is less effective than managing all of them in an integrated way. This is a field level approach to integrated resource management. Resource management decisions are made while considering that each site is a component of a larger ecosystem.

The working definition of Integrated Resource Management requires 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 Lincoln County Forest is managed with an integrated resource approach.

810 SUSTAINABLE FORESTRY

The definition of sustainable forestry in the Wisconsin Administrative Code and the Wisconsin Statutes is as follows:

"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 §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 FOR MANAGING SUSTAINABLE FORESTS

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. The DNR Liaison Forester will be responsible for the completion and maintenance of the recon system and will assist in interpretation of the data to be utilized in planning and scheduling resource management.

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.

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.

Data will be collected in order to classify the entire forest. This information should be collected along with, and made part of, the compartment reconnaissance system during regular field inspections. This data should also be compared to soil survey information in order to associate the relationships between forest habitat types and soil types.

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. Detailed soil surveys, when available, will be made a part of the compartment reconnaissance system and continue to be correlated to the Forest Habitat Classification system.

Soil survey information may be obtained from the Natural Resource Conservation Service office and the Lincoln County Soil Survey.

810.1.4 National Hierarchical Framework of Ecological Units/Ecological Landscapes of Wisconsin

Integrated resource management recognizes that an individual forest site is part of a larger landscape, and management activities can have an impact beyond a specific site. The National Hierarchical Framework of Ecological Units (NHFEU) is a useful tool in understanding natural landscapes.

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.

Landtype Associations (LTA's) are landscape-scale ecological units, and are identified by surficial geology, patterns of vegetation, soil parent materials, and water tables. Most LTA's are between 10,000 and 300,000 acres in size.

Each Landtype Association contains a general description of characters such as landform, historic vegetation, current vegetation, water resources, land area, socioeconomic data, agriculture, population, and ecological opportunities.

Goals can be developed for an LTA based in part on its capability, productivity, unique character, and the scarcity or abundance of similar LTA's in the state, region or beyond. Objectives for vegetation management, wildlife habitat, ecological restoration, and recreation use can be tailored to the characteristics and potentials of the ecosystem.

810.1.5 Integrated Pest Management

Integrated Pest Management for the purpose of this plan is defined as follows:

“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 Administrator 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, Section 610.3 for more detailed discussion and integrated pest management strategies.

810.1.6 Best Management Practices for Water Quality

Often 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 FR093.

Consistent with the aforementioned manual, Lincoln County will use BMP's 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 erodable soil types, close proximity to streams or lakes, or steep slopes may require mitigating measures in excess of those outlined in the manual. All Lincoln County employees practicing forestry will receive BMP training. Additionally, Lincoln County will require BMP training of all logging contractors that operate on County timber sales.

810.1.7 Forest Fire Management

Refer to Chapter 600

810.1.7.1 Uncontrolled Fire

Refer to Chapter 600

810.1.7.2 Prescribed Fire

Prescribed burning on the County Forest can play an important role in habitat management. Many plant communities present today were naturally maintained and regenerated by wild fires in the past.

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

All prescribed burning will be done in accordance with §26.12, and §26.14 Wis. Stats, and the DNR Prescribed Burn Handbook 4360.5 and in cooperation with the Department of Natural Resources per Chapter 600, Section 605.5 of this plan.

810.1.8 Outside Sources of Expertise, Studies and Survey

Additional data necessary to make management decisions on the County Forest will be sought from agencies or individuals, who in the Committee's opinion, are best equipped to provide that service. This data will be used as appropriate for management planning.

810.1.8.1 Water Resources

The DNR Fisheries Biologist and the Water Management Specialist will provide surveys, studies, and technical advice as necessary to prepare and carry out recreational planning affecting waters on the County Forest. (See Section 840.6 of this Chapter)

810.1.8.2 Wildlife Resources

DNR wildlife biologists will implement population and habitat surveys, provide technical advice and direct assistance needed for wildlife management planning and implementation on County Forest lands. (See Sections 840.4 and 840.5 of this Chapter) Wildlife projects are identified and implemented in collaboration with the County Forest Administrator, DNR Liaison Forester, and the Committee.

810.1.8.3 Soil Resources

Soil maps and surveys prepared by the Natural Resource Conservation Service (NRCS) will be used in various phases of management planning.

810.1.8.4 Mineral Resources

The DNR may provide information valuable for management of gravel and other mineral resources. (See Chapter 500, Section 515.2)

810.1.8.5 Wetland Resources

Maps prepared by the DNR's Bureau of Fisheries Management and Habitat Protection, may be utilized for identifying wetlands. Although not comprehensive, particularly in

forested areas, these maps are a good initial tool for identifying wetlands on County Forest lands. Assistance and technical advice will be requested from the DNR Water Management Specialist when wetlands may be affected by management practices. The Army Corps of Engineers will also be consulted when appropriate. Wisconsin's Forestry Best Management Practices for Water Quality will be used on County Forest projects.

810.1.8.6 Navigable Streams

The DNR's Water Regulations Specialist will be consulted when navigable stream crossings or navigable stream management projects are being planned. Wisconsin's Forestry Best Management Practices for Water Quality will be used on County Forest projects.

810.1.8.7 Floodplains

Maps prepared by the Federal Emergency Management Agency (FEMA) will be used to identify floodplains. The County Zoning staff may be consulted regarding management activities in the floodplain.

810.1.8.8 Cultural Resources

Management planning will take into consideration historical and archaeological sites. More information may be obtained from the State Historical Society or the DNR's archeologist.

810.1.8.9 Entomology / Pathology

Wisconsin DNR forest pest staff will provide information and consultation as requested by the County. (See Chapter 600, Section 610 for more information on forest pest control)

810.1.8.10 Endangered Resources

DNR endangered resource staff will provide Natural Heritage Inventory (NHI) information and are available for consultation on endangered resources issues.

810.1.9 Local Silvicultural Field Trials

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

These trials currently include:

White birch regeneration

Northern red oak regeneration

Black spruce/tamarack regeneration

A compilation of silvicultural trials on State and County lands is available at:

<http://dnr.wi.gov/org/land/forestry/sciences/silviculture/index.html>

810.1.10 Local Citizen Involvement

The Lincoln County Forestry, Land and Parks Committee is an open forum to listen, evaluate and incorporate, where appropriate, the public's input into management of the County Forest.

The public's needs and interpretation of management of the forest should be improved by the availability of "Resource Management Blocks" information. It is hoped that an inventory of each block's attributes, threats, trends, regulations and opportunities will encourage communication on specific issues and focus on possible solutions using a total integrated resource and ecosystem viewpoint.

820 BIOLOGICAL COMMUNITY TYPES

A community is an assemblage of different plant and animal species, living together in a particular area, at a particular time in specific habitats. Communities are complex and dynamic systems named for their dominant plant species.

Species/community information has been condensed to familiarize the reader with the make-up of the forest. (Refer to Chapter 100, Section 130.1.4 for more information)

820.1 FORESTED COMMUNITIES

The forested cover types are made up of a variety of size classes (regeneration, sapling-pole, and saw timber) and structure (canopy, layers, ground vegetation, dead and downed

material, and inclusions). Forested communities within the Lincoln County Forest cover approximately 80% of the forest.

Forested cover types associated with the Lincoln County Forest are (percentages are approximate):

Aspen – 49%. Consisting of primarily aspen species, often found in combination with paper birch, red maple and red oak.

Northern Hardwoods - 32%. Consists of a mixture of upland hardwood species including sugar maple, yellow birch, basswood, white ash, and red maple. Hemlock can also be a component of this forest cover type.

Swamp Hardwoods - 3%. Lowland or bottomland type consisting of more than 50% swamp hardwood species including black ash, red maple, and elm.

White birch – 2%. Dominated by white birch often found with aspen, red oak, red maple, white pine or balsam fir components.

Red oak – 1%. Dominated by northern red oak often in combination with white birch, aspen, red maple and hemlock.

Conifer Plantations – 5%. Red pine, jack pine, white pine and white spruce dominated plantations.

Swamp Conifer - 8%. Lowland type dominated by cedar, tamarack and black spruce in combination with balsam fir, red maple and other lowland hardwoods.

820.2 NON-FORESTED COMMUNITIES

Non-forested communities within the Lincoln County Forest cover approximately 20% of the Forest. In broad categories, they are: upland (3%), wetland (16%) and water (1%).

Non-forested habitats are important components of management within the County Forest. Upland and wetland non-forest types provide important habitat for distinct groups of species.

The following provides a general description of the non-forested communities:

820.2.1 Upland Non-Forest (3%)

Upland Non-Forest areas of the County Forest include:

Grass openings – consists of upland grasses, such as brome, quack, bluegrass, timothy, big and little bluestem, and Indian grass.

Herbaceous vegetation - ground cover predominated by herbaceous species with bracken fern, sweet clover, giant ragweed, stinging nettle, upland aster, goldenrod, and prairie dock being common.

Upland brush/low shrubs- consisting of hazel, black berry, raspberry, blueberry, sumac, etc.

Rock outcrops and sand banks - rock outcrops include rocky talus, and bedrock material.

820.2.2 Wetlands (16%)

Wisconsin State Statutes define a wetland as “an area where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation, and which has soils indicative of wet conditions.” Wetlands are the transitional habitats between upland and aquatic systems where the water table is usually at or near the surface, or where the land is covered by shallow water. Wetland communities are recognized to be a complex association of plants and animals, soils and water levels having special natural values. They are fragile systems that undergo rapid degradation when affected by incompatible uses and unskilled management. Wetlands provide many functional values including shoreline and flood protection, water quality protection, groundwater recharge, and animal and plant habitat. Therefore, it is the policy of Lincoln County to preserve, protect and manage the wetlands under its jurisdiction in a manner that recognizes the natural values of wetlands and their importance in the environment. To this end Lincoln County will:

- a. Recognize wetland values in management plans, taking reasonable steps to minimize harmful effects.

- b. Cooperate with the DNR in wetland inventories and in preparation of essential wetland information.
- c. Maintain control of vital wetlands under its jurisdiction when to relinquish such control would risk substantial site alteration and subsequent degradation of wetland values vital to the area and the state.
- d. Minimize adverse changes in the quality or quantity of the flow of waters that nourish wetlands.
- e. Cooperate with local, state and national agencies and citizens to increase understanding of the importance of wetlands and the need for land and water stewardship in guiding development decisions.
- f. Cooperate with the DNR in wetland management activities that would enhance the quality and diversity of wetlands in the county and the region.

820.2.3 Open Water Habitats (1%)

Open water habitats are permanently flooded lands below the deep-water boundary of wetlands. Water is generally too deep to support emergent vegetation. Presence of these aquatic habitats within a forest landscape greatly increases the number of wildlife species that can potentially occur. They include rivers, lakes, and streams. They are broken down into:

Lakes - lakes, ponds, and flowages in excess of 40 acres in an area; or rivers in excess of 1/8 of a mile in width.

Streams - intermittent or permanent watercourses with slow water velocities and are usually defined as being less than 1/8 mile in width.

Rivers - wetlands and deep-water habitats contained in a channel through which the water flows and associated with forested riparian zones.

830 PLANT COMMUNITIES MANAGEMENT

Lincoln 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 to encourage, specific species or communities is complex. It includes an understanding of:

- Objectives of the County Forest.
- Integration of the National Hierarchical Framework of Ecological Units (NHFEU - landforms, soils, climate, vegetation classification at multiple scales).
- Application of habitat type classification to identify ecological potentials and silvicultural alternatives.
- Past, present, and future desired condition.
- Surrounding ownership patterns and their generalized objectives.
- Socio-economic needs.

830.1 SILVICULTURE

Plant communities are normally managed within the guidelines found in the *Wisconsin Department of Natural Resources. Silviculture and Forest Aesthetics Handbook 2431.5.*

Silviculture is the practice of controlling forest composition, structure, and growth to maintain and enhance the forest's utility for any purpose. Typically, silvicultural guidelines are written to encourage a stand to contain the greatest quality and/or quantity of timber under either an even-, or uneven-aged system. It is the responsibility of the Lincoln County Forestry Department to perpetuate a wide variety of timber types native to Lincoln County. Based upon the regenerative characteristics and requirements of the individual species, a variety of silvicultural practices may be used to maintain both early and late successional timber types.

830.1.1 Difficult to Regenerate or Locally Uncommon Tree Species

The presence or lack of a particular tree species is dependent on the land's capabilities, climate, and natural (e.g. fire, deer browsing) and/or man-caused (e.g. logging, farming) disturbances. Management prescriptions for areas where these tree species occur on the Lincoln County Forest may be adapted to maintain or favor those species where silviculturally feasible. White birch, white pine, eastern hemlock, butternut, American elm and northern red oak are examples of these species.

830.2 EXOTIC PLANT SPECIES OF CONCERN

Exotic or non-indigenous invasive plant species can cause significant ecological and economic damage to the forest. Some invasive species eliminate not only native herbaceous species but also limit the regeneration of tree species. Keeping them from dominating the understory is critical to the long-term health and economic viability of the forest. Currently, Lincoln County Forest has few significant infestations of invasive plants. Specific examples of exotic species occurring in nearby geographic areas are garlic mustard and buckthorn. In cooperation with the Department of Natural Resources, Lincoln County will track the occurrence and/or advance of these invasive species. With training, vigilance, and control efforts, new infestations can be managed or eliminated.

830.3 LEGALLY PROTECTED PLANT SPECIES

There are some plants in Wisconsin that are afforded protection under the Federal Endangered Species Law, the State Endangered and Threatened Species Law (§29.604 Wis. Stats. and NR 27 Wis. Adm. Code), or both. Under Wisconsin State Law, no one may possess or sell any wild plant that is listed without a valid endangered or threatened (ET) species permit. On public lands or lands one does not own, lease or have permission of the landowner, one may not cut, root up, sever, injure, destroy, remove, transport, or carry away a listed plant without an ET species permit. There is an exemption on public lands for forestry, agriculture and utility activity under the state law. In the Natural Heritage Inventory (NHI) program the DNR tracks information on these species in the State.

830.4 OTHER PLANT SPECIES AND NATURAL COMMUNITIES OF CONCERN

In addition to legally protected species, the Department of Natural Resources' NHI program also tracks information on rare or endangered species and natural communities.

830.4.1 NATURAL COMMUNITIES

Natural communities that have been identified on the Lincoln County Forest include:

Tomahawk Bog

Budinga Bog

Sparrow Bog

Bradley Swamp

Highway 8 Bog

Prairie River Dells

Harrison Hills Lakes

840 WILDLIFE SPECIES MANAGEMENT

840.1 BACKGROUND

For the purpose of this plan, wildlife will include all native birds, mammals, fish, amphibians, reptiles, and insects with a strong focus on the natural communities in which they live. Wildlife biologists will emphasize habitat management that interrelates and benefits wildlife, and complements sound forestry practices. Concerns about the biological diversity of the County Forest and how it fits into the regional, continental and global perspective, may cause wildlife management to place increased emphasis on segments of the forest community. Practices such as old growth, snag and den tree management, access management, forest openings maintenance, oak management, and aspen maintenance, are priorities in the dynamics of forest management. A primary goal of wildlife management on the Lincoln County Forest is to provide a diversity of healthy ecosystems necessary to sustain native populations for their biological, recreational, cultural and economic values.

840.1.1 Technical Planning

Planning will be a cooperative effort of the Administrator, DNR Liaison Forester and Wildlife Biologist in formulating management plans and utilizing wildlife management techniques for the overall protection and enhancement of the Forest community, of which wildlife is a key component.

840.1.2 Guidelines

DNR manual codes on Endangered and Threatened Species Permits Issue (1724.5), Feasibility Studies and WEPA Analyses for Establishing or Modifying Property Project Boundaries (2105.1), Guidelines for Defining Forest-Wildlife Habitat Management (2112), Forest Opening Maintenance and Construction (2112.1), and the Public Forest Lands Handbook (2460.5), are important references and guidelines in wildlife planning efforts.

840.1.3 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.

840.2 RESOURCE MANAGEMENT AND AREAS OF FOCUS

In applying this Plan to the Forest, the following areas of focus were identified in achieving Plan objectives:

840.2.1 General Management Policies

Forest management practices may require modification to benefit wildlife and biodiversity in certain situations. The following will be considered in Forest management planning:

- a. Even-aged regeneration harvests (clearcuts) should vary in size and shape.
- b. A diversity of stand age, size and species.
- c. Mast-bearing trees and shrubs, den trees, and an adequate number and variety of snags.
- d. Cull trees (future snag or den trees) not interfering with specific high value trees.
- e. Timber types, habitat conditions and impacts on affected wildlife.
- f. Access management.
- g. Best Management Practices for Water Quality (BMP's).

840.3 HABITATS OF IMPORTANCE

Important habitats are known to be of great value to certain native wildlife. These habitats are often associated with forest cover types that are decreasing in acreage largely due to fire suppression and/or an emphasis on managing for shade tolerant, later successional species. Some habitats are decreasing in acreage on a local or broader scale. The following habitats are considered important in Lincoln County:

840.3.1 Aspen

Aspen is a valuable early successional forest type for both game and non-game wildlife species. Aspen cover type has decreased in acreage dramatically on a national scale.

Lincoln County will continue to regenerate this forest type, with consideration given to reserving scattered den and mast-producing trees.

840.3.2 Jack pine

Jack pine and its associated plant understory provide a vital mix of breeding and winter habitat for many wildlife species. This type has become increasingly valuable on the Forest as conversion to other tree species occurs across the landscape. Lincoln County will continue to regenerate this forest type.

840.3.3 Forest openings

Permanent grass openings are essential to well-balanced wildlife habitat. Openings will be maintained where they exist or be developed where needed.

840.3.4 Lowland conifer

Cedar, hemlock, and fir provide important winter cover for many wildlife species. These forest types will be maintained where practical.

840.3.5 Oak

The oak type is valuable to wildlife because of its cavity-forming potential and mast production. Large, low quality oaks are often retained for their wildlife value. Where possible, management will focus on maintaining oak.

840.4 GAME SPECIES

The management of forest game (white-tailed deer, ruffed grouse, black bear, turkey, snowshoe hare, and numerous furbearers) is centered on maintaining early successional species such as aspen, jack pine, white birch, and oak; with aspen and oak being the primary species of importance.

Manual Code 2112 is a Wisconsin DNR document that establishes guidelines for measuring forest game habitat. It has been used like a barometer to measure changes in forest wildlife habitat. While the scope of Manual Code 2112 can be narrow (deer habitat units compared with landscapes and ecoregions) by today's management standards, the impacts are broad.

Lincoln County has designated specific areas of the Forest as ruffed grouse management areas. These areas are managed to cater specifically to the seasonal needs of ruffed grouse. Clear-cutting smaller acreages and woods road seeding projects increase the value of the habitat for ruffed grouse and other game species as well. A map of ruffed grouse management areas can be found in Chapter 900, Appendix.

840.5 NON-GAME SPECIES

Efforts will be made in cooperation with the DNR to inventory existing populations, identify needs, and maintain valuable habitat types. A number of dead, snag and den trees will be retained in areas of the forest to improve habitat for some non-game species.

840.5.1 Neotropical Migrant Birds

Neotropical Migrant Birds (NTMB) are songbirds that breed in North America and winter in Central and South America. There are over 120 species of NTMB that spend a portion of each year in Wisconsin. NTMB's utilize a wide variety of habitats including early and late successional forests, brush/shrub areas, and grasslands. Warblers, tanagers, vireos, thrushes, swallows, blue-winged teal and hummingbirds are just some examples of NTMB. In addition, these species play an important role in forest health by consuming insects, including forest pest species such as gypsy moths and forest tent caterpillars.

As habitat is fragmented and lost by the development of private lands, Wisconsin's County Forests continue to provide increasingly important habitat to numerous NTMB species.

840.5.2 Legally Protected Animal Species

The Federal Endangered Species Act of 1973 and the Lacey Act together provide for the protection of wild animals threatened with extinction. The State Endangered and Threatened Species Law also requires that the State assume responsibility for conserving wild animals by restricting and regulating the taking, possession, transportation, processing, or sale of endangered or threatened wild animals within its jurisdiction. Further, the Federal Migratory Bird Act and the Eagle Protection Act provide additional protection for certain species of birds. Because animals usually travel freely from one

property to another, they belong to everyone. Therefore, if a species is legally protected, it is protected anywhere it occurs in Lincoln County.

840.5.3 Other Animals of Special Concern - NHI

Just as with plants, the DNR tracks information on rare animal species when some problem of abundance or disturbance 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. See Chapter 900 for a reference map and list of species. In addition to NHI a statewide list of Species of Greatest Conservation Need can be found at:

http://dnr.wi.gov/org/land/er/cwcp/SGCN_ID.pdf

840.6 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.

840.6.1 Technical Planning

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.

840.6.2 Water Surveys

Comprehensive lake and stream surveys on the County Forest will be conducted by the DNR fisheries biologist as required. The publication "Surface Water Resources of Lincoln County" contains additional information relative to these waters.

840.6.3 Population Surveys

Surveys of fish populations in waters within the County Forest will be conducted by the DNR as required and will generally run concurrently with water surveys. Fish management programs will be guided by these surveys.

840.6.4 Lake Management

Management of lakes within the County Forest will be consistent with the capability of the resource and any unique aspects associated with that resource.

840.6.5 Stream Management

Trout streams on the County Forest will be managed to protect and enhance their quality. Streams containing warm water or cool water species will be managed to perpetuate their inherent qualities. Corresponding land and water use practices will be consistent with this policy. Maps inventorying water resources can be found in the Chapter 900, Appendix.

840.6.6 Best Management Practices for Water Quality

Protection of water resources in the county will be consistent with the “Wisconsin Forestry Best Management Practices (BMP’s) for Water Quality”. Examples of these protective measures are:

- a. Erosion control measures
- b. Stream bank protection
- c. Management for longer lived species in riparian areas
- d. Uncut riparian management zones

840.6.7 Shoreland Zoning

The Lincoln County Zoning Department can be contacted for information on Shoreland Zoning requirements, rules and regulations.

840.6.8 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 700, Section 740 for further information on water access.

840.6.9 Important Water Resources

Management activities adjacent to these water resources, or in areas with sensitive soils or severe slopes, may require measures above and beyond the customary BMP practices.

County staff may work with the Liaison Forester in cooperation with the local DNR water resources staff to develop site-specific measures where appropriate. Outstanding and Exceptional Resource Waters found on the County Forest are listed in Chapter 100, Section 130. A complete inventory of the surface water resources in Lincoln County can be found in the Chapter 900, Appendix.

850 LANDSCAPE MANAGEMENT

850.1 BIOLOGICAL DIVERSITY

For the purposes of this Plan, biological diversity will be interpreted as a wide variety and abundance of species, their genetic composition, and the communities, ecosystems, and landscapes in which they occur. It also refers to the structures, functions, and processes that occur in ecosystems that sustain them as viable entities. The forest landscape, a mosaic of these communities, is constantly changing due to both natural and planned events.

The management of the Lincoln County Forest will be continued and improved upon to maintain a high level of biological diversity with consideration given to the management practices on the surrounding landscape, provided it is deemed to be in the public's best interest by the Committee and within the framework of the County Forest Law (§28.11 Wis. Stats.).

850.2 HABITAT FRAGMENTATION

Lincoln County Forest will work cooperatively with neighboring forest landowners and managers to develop management plans and strategies that consider fragmentation on a landscape level. A continued program of land acquisition within the County Forest blocking will decrease the negative impacts of forest fragmentation by land uses other than forestry.

850.3 OTHER SPECIAL MANAGEMENT AREAS

The Roothouse Lake Area is a special management area in which Lincoln County will manage for a presumed climax species composition. Over time, pest and disease control timber harvests will be conducted along with the removal of shade intolerant species.

Recreational uses will be limited to low impact activities such as hiking, fishing, primitive camping and other non-motorized activities. Hunting and trapping are prohibited in the northern block of this area. Refer to Chapter 500, Section 530 for a detailed listing of Exceptional Resources found on the Lincoln County Forest.

860 RESOURCE MANAGEMENT BLOCKS

Previous chapters have outlined the planning objectives, decision guides and management considerations for administering the County Forest. The Lincoln County Forest has been divided into eight management “blocks” based upon the geography, soil types and location of these areas. The descriptions of the eight management blocks will summarize natural resources of special concern, management considerations and recreational considerations for each geographic unit

Land use and management activities that occur within each block are dynamic and may evolve with time as more is learned about each block. An adaptive management approach will apply to the blocks and will allow flexibility to adjust or modify management practices when the Committee, the Forestry staff or cooperating resource managers recognize change.

Each management block includes a map of the area, the block name, and the following summary information:

1. County Forest acreage in the block
2. Predominant forest cover types
3. Landforms, geology and soils
4. Land Type Association (LTA)
5. Surface water resource inventory
6. Recreation uses
7. Protection needs, as they exist
8. Special use and management zones
9. Access, roads, fire lanes and trails
10. Land capabilities
11. Management opportunities

Individual Resource Management Blocks are outlined in the Lincoln County Forest Access Plan found in Chapter 900, Appendix.

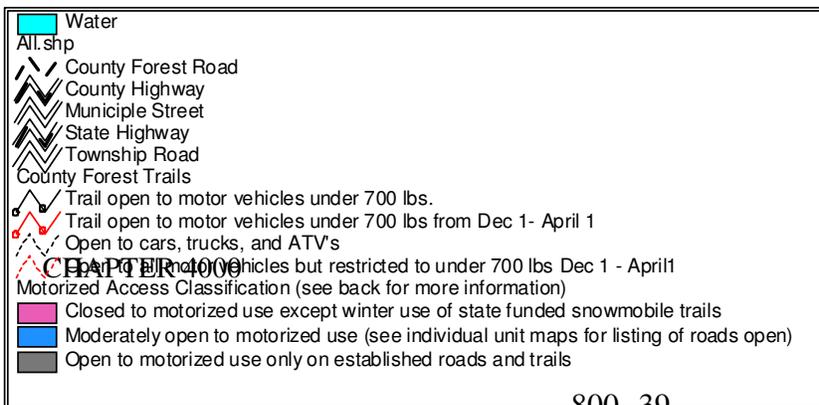
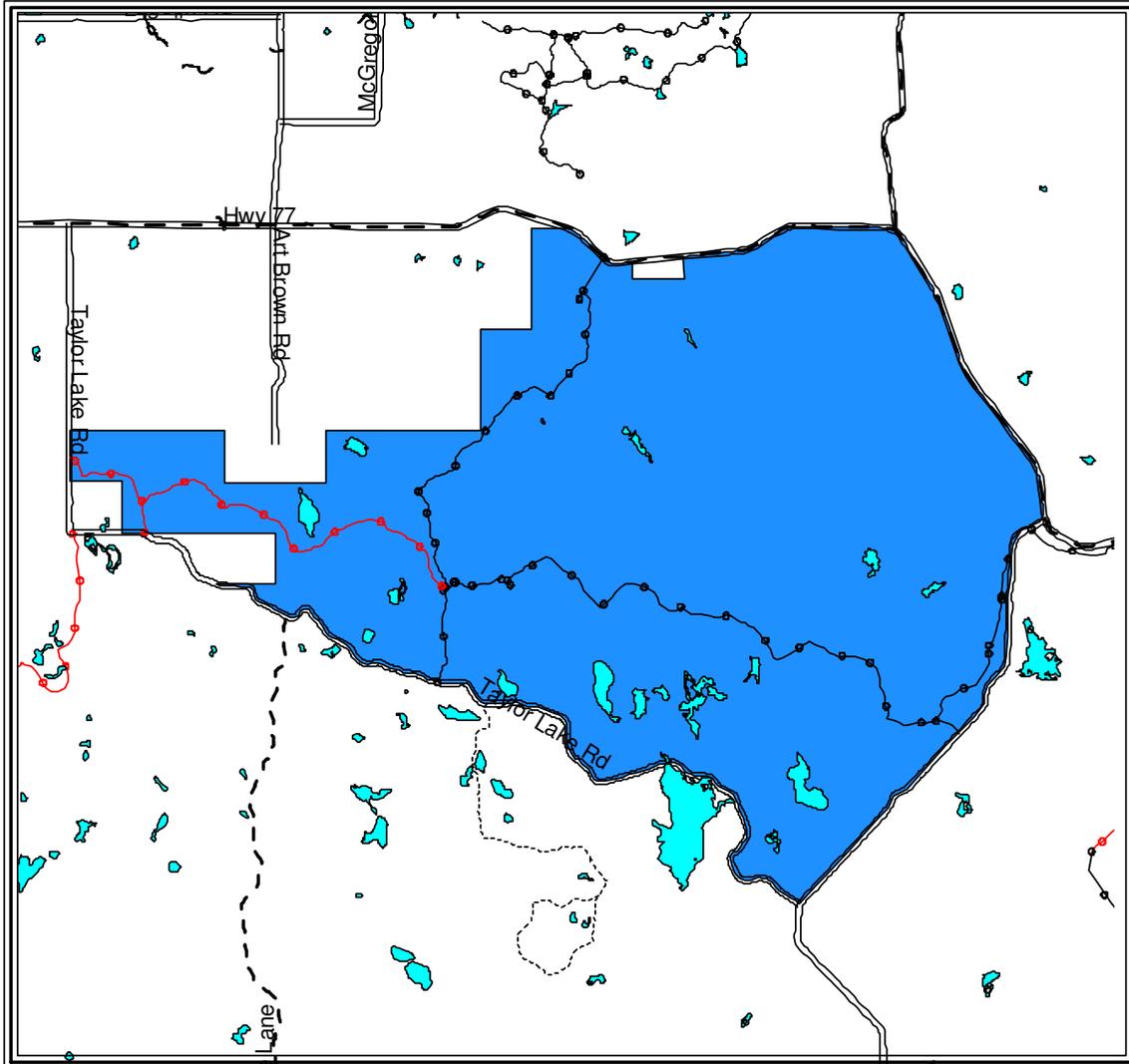
Sample Integrated Resource Management Unit

Chapter 4000

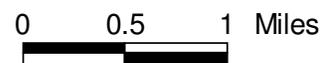
Road and Access Plan
Little Frog - Unit 10

10

Only designated trails open to motor vehicles (see back for more information)



5,075 acres



INTEGRATED RESOURCE MANAGEMENT UNITS (IRMU)

IRMU UNIT AND NUMBER Little Frog Unit 10 UNIT INVENTORY

1. *Compartments: # 60, 89, 91*
County Forest Acreage: 5,037

2. *Predominant Forest Cover Types*

TYPE	EXISTING ACRES	EXISTING %	FUTURE SCHEDULED ACRES	FUTURE %
Aspen	1929	38.3	1788	35.5
Hardwood, Northern	1521	30.2	1662	33.0
Brush, lowland	493	9.8	493	9.8
Hardwood, swamp	269	5.3	277	5.5
Non-commercial	261	5.2	261	5.2
Oak	254	5.0	254	5.0
Spruce, black	201	4.0	201	4.0
Conifer, swamp	41	.8	33	.6
Tamarack	13	.3	13	.3
Fir / spruce	9	.2	9	.2
Grass	7	.1	7	.1
Total	5037	100.0	5037	100.0

3. *Landforms, Geology, Soils*

The landform within this unit is primarily a disintegration moraine. Soils within this complex are made up of sandy and loamy till and loamy soils over outwash on a disintegration moraine. The primary habitat types are AVDe and AA.

4. **Land Type Association (LTA)**

This unit is associated with several LTA's. They are as follows:

Hayward Moraines (212Jc11): The characteristic landform pattern is rolling, collapsed moraine with swamps common. Soils are predominantly well-drained sandy loam over acid loamy sand till or outwash. Common habitat types include forested lowland, PMV/Pam, and ATM/AAt.

Frog Creek Moraines (212Jc12): The characteristic landform pattern is rolling collapsed moraine with loam over acid loamy sand till. Common habitat types include hydromesic, forested lowland, and AViO.

Smokey Hill Basalt Ridge (212Jc13): The characteristic landform pattern is hilly, bedrock-controlled moraine. Soils are predominantly well-drained sandy loam over acid loamy sand till or igneous/metamorphic bedrock. Common habitat types include ATM, forested lowland, AVVb, and hydromesic.

7. *Historical, Cultural, Archeological Sites*

Presently, there are no known historical, cultural, or archeological sites located within this unit.

8. *Surrounding Land Use*

Surrounding land use is primarily county forest. Management objectives provide for multiple use concepts of the land, which include timber, recreation, wildlife, and water quality.

9. *Protection Needs*

Access is relatively limited within this unit and provides potential for wolf management.

Most timber harvesting in this unit should be restricted to winter harvest only, to reduce rutting of heavy soils.

10. *Special Use and Management Zones*

Highway “77” is categorized as an “A” aesthetic zone.

Fish and Rainy Lakes are categorized as “B” aesthetic zones.

Management has been tailored to provide for safety around the rifle range in section 31.

This area is designated a blue zone, which is moderately restrictive to motor vehicle traffic. This designation protects the resources, safety, investment, and the primitive nature of the forest.

11. *Access, Roads, Firelanes, Trails*

Two snowmobile trails traverse this unit. These are authorized trails and access is limited to snowmobiles and ATV’s from December 1 to March 31.

12. *Land Capabilities (Land Type Association Habitat Classification Types)*

The habitat types associated with this unit are primarily AVDe and AA.

The AVDe habitat type is dominated by dry mesic sandy loams and loamy sands which have a medium nutrient status. This type is suitable for even-aged management for most early successional species, for fiber, wildlife, or other purposes. White pine potential is good along with red oak. Sugar maple also appears on these sites, in particular on the high AVDe, along with basswood and ironwood. However, they do not grow as well as on the AA habitats. This habitat offers excellent opportunities for enhancement of vegetation, structure, and diversity. Presumed climax within this habitat includes sugar maple with a component of red maple, red oak, basswood, and white ash. It is not certain whether this habitat type meets the site requirements for successful dominance of sugar maple. No stand has been located within the county that has been dominated by sugar maple within this habitat type. Its dominance is postulated only on the basis of its superior tolerance. Common forest types associated with this habitat include aspen or

white birch, aspen-red oak, aspen-pines (red and white), red oak, red oak with white oak, red maple and basswood, white and red pine.

The AA habitat types are dominated by dry mesic to mesic silt loams, loams and sandy loams with a high to medium nutrient status. These sites have a high enough nutrient status that can provide for sugar maple dominance in most current stands. Along with sugar maple, red oak can be present and responds well where canopy opening occur. Presumed climax overstory is sugar maple, basswood, white oak, as, red maple, and red oak. Common forest types include aspen and white birch, aspen-red oak, red oak-white oak, red oak-basswood, sugar maple-red oak, sugar maple-red oak-basswood-ash, white pine.

13. *Landscape Management Potential*

This unit is a very diverse area in terms of landscape management potential. The types associated here support the highest number of tree species and therefore, the most diverse mixtures of forest types. Growth rates vary for hardwoods from fair to good on the AA sites to poor to medium on the AVDe sites.

It appears some of the best options for oak management are located on the high AVDe and low AA types.

Management associated with the AVDe sites should consider even-aged management versus all-aged management on AA habitats

Management decisions within this area will be heavily influenced by the composition and condition of present stands. The area may be best managed for timber production, along with considerations for wildlife and biodiversity concerns.

14. *Management opportunities*

Maintenance of oak could be a relatively high objective as most of the stands are shifting into the sugar maple seral stage.

Aspen management should also be considered a high priority. The aspen successional stage appears to be unstable with a lack of major disturbances and a species that can be lost relatively easily from these habitat types

White pine and butternut, where found, should be managed on a micro-site basis, maintained and encouraged.

Consider the establishment of osprey platforms associated with Rainy and Fish Lakes.

Presently, there are some relatively large aspen clearcut units that have been cut in the past within sections 27 and 28. Consider managing these units in a large acreage scale for biodiversity needs. Review the unit for potential extended rotation in the aspen type.

The area is heavily used by wood ducks. Consider the establishment of additional wood duck houses.

Potential timber wolf management.