LINCOLN COUNTY FOREST FIFTEEN-YEAR COMPREHENSIVE LAND USE PLAN

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CHAPTER 600

PROTECTION

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OBJECTIVE

To protect and manage the resources of the Forest from preventable losses resulting from fire, insects, diseases and other destructive elements including those caused by people~~man~~. Protective methods shall include proper silvicultural methods.

605 FIRE CONTROL

Damage to the Forest caused by uncontrolled fire can create an important challenge in the management of the Forest. Loss of resource values caused by fire will be minimized through organized prevention, detection and suppression methods. Maintaining a healthy forest is key to fire management. The DNR is responsible for all matters relating to the prevention, detection and suppression of forest fires outside the limits of incorporated villages and cities. (§26.11(1), Wis. Stats). The DNR works cooperatively with local fire departments in all fire control efforts. Lincoln County Forest is part of the intensive forest fire protection area. The Fire Prevention Handbook No. 4310.5, Fire Presuppression Handbook No. 4320.5, the Fire Suppression Handbook No. 4342.05 and the Area Fire Plan shall serve as the guidelines for fire control activities.

605.1 COOPERATION WITH THE DEPARTMENT OF NATURAL RESOURCES

Pursuant to §26.11(4) and §28.11(4)(f), Wis. Stats., and the Lincoln County Forest Ordinance, the County may cooperate with the DNR in the interest of fire prevention, detection and suppression on the County Forest. This is accomplished through agreements authorizing the DNR to use County Forest land or to utilize County personnel and equipment for fire protection activities.

605.1.1 Personnel

County Forest personnel, upon request from the DNR, shall be made available for forest fire control efforts within the County in accordance with an established memorandum of understanding (MOU). The DNR is responsible for training and directing the activities of County personnel in accordance with the rules identified in the Area Fire Action Plan.

605.1.2 Equipment

County Forest equipment, upon request and as identified in the MOU, shall be available for forest fire control suppression. During periods of high fire hazard, all County Forest vehicles and/or crews should be equipped with one or more back pack cans, axes or shovels, appropriate personal protective equipment, mobile communication and any other equipment deemed essential by the MOU. All hand tools shall be maintained and provided by the DNR.

605.1.3 Fire Detection

Fire detection is the responsibility of the DNR. County Forestry personnel shall assist and report any wild fires to the DNR, local Fire Department or 911 Dispatch. The Lookout Mountain fire tower is located within the boundaries of the County Forest.

605.1.4 Forest Fire Prevention

DNR fire control personnel are authorized by the County to place fire prevention signs at recreational areas and other strategic locations within the forest. The County conducts and controls all operations (including harvesting) on the forest in a manner designed to prevent forest fires. The use of the County Forest during high fire danger periods may be restricted. These restrictions will include, but not be limited to, recreation and logging.

605.2 SLASH DISPOSAL

Timber Sale Contracts will be designed to meet or exceed the requirements of the Slash Disposal Law, §26.12, Wis. Stats. Additional requirements may be imposed as necessary.

605.3 DEBRIS BURNING

Unauthorized burning of debris will not be permitted on County Forest Lands pursuant to §26.12(5), Wis. Stats.

605.4 CAMPING FIRES

Adequate fireplaces will be provided at designated recreation sites. During periods of high fire danger, use of campfires may be restricted.

605.5 PRESCRIBED BURNING

All prescribed burning on County Forest lands will follow DNR recommendations. See Manual Code 4361.1 and Prescribed Burn Handbook No. 4320.5 for details. Prescribed fire may be an effective management tool on the County Forest.

605.6 COUNTY FOREST FIRE HAZARD AREAS

Primary emphasis will be placed on fire control efforts in pine areas. Maps of these areas are available at the local DNR field office (Fire Management Handbook #4321.5, Sec. 3030) and County Forest office. Existing access roads, firebreaks and water access points will be maintained as deemed necessary. Secondary emphasis will be placed on hardwood areas with no firebreaks developed or maintained. However, access roads will be maintained as defined in Chapter 700 of this plan.

605.7 UNCONTROLLED FIRE

Any uncontrolled or non-prescribed fires on the County Forest will be suppressed as soon as possible.

610 CONTROL OF FOREST PEST & PATHOGEN

610.1 DETECTION

Damage to the Forest caused by insects, other pests and diseases can adversely affect management of the Forest resources. Losses to resource values impacted by forest pests will be minimized through integrated pest management methods, with emphasis on silvicultural prescriptions (timber sales). The detection and control of pest problems will be accomplished by County and DNR personnel in cooperation with other agencies.

610.2 PEST SURVEYS

Pest surveys are conducted under the direction of the DNR's Regional Entomologist. The DNR works in cooperation with the Wisconsin Department of Agriculture Trade and Consumer Protection (DATCP) in monitoring the spread of gypsy moths. The County may cooperate by providing personnel and equipment to assist in these operations.

610.3 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 integrated pest management control and methodology shall be determined jointly by the County Forest Administrator, and DNR Liaison Forester in consultation with the DNR Regional Entomologist and Regional Forester. Suppression of forest pests may include the following:

a. Silvicultural prescriptions, including timber sales.

b. Biological control.

c. Chemical control.

610.3.1 Specific Pests and Pathogens of Interest.

Gypsy Moth

Jack Pine Budworm

Oak Wilt

Forest Tent Caterpillar

Two-lined Chestnut Borer

Emerald Ash Borer

610.3.1.1 Gypsy Moth

This exotic pest has progressed westward from the northeastern United States where it was introduced in the early 1900's. It reached eastern Wisconsin in 1988 and has caused widespread defoliation in some eastern counties. Despite efforts to slow the spread and suppress outbreaks, the gypsy moth is progressing westerly through Wisconsin. Pheromone flakes are used to slow the spread of gypsy moths by preventing adults from finding each other for mating. Pheromone flakes are only effective in low density or isolated populations. Current insecticides for gypsy moth control include a naturally occurring bacterium, Btk (*Bacillus thuringiensis*, strain *kurstaki*) and a commercial formulation of a naturally occurring virus, Gypchek. The Gypchek virus, specific to gypsy

moth larvae, is only available through the Federal Suppression Program administered by the DNR. Gypchek is available in limited quantities, is very expensive and should only be used where Btk cannot. The intent in combating this insect is not to eradicate, but rather to control populations so that tree mortality is held to tolerable levels.
Natural predators found in Wisconsin include white footed mice, various birds and some ground beetles. Cold winter temperatures and wet weather can also naturally reduce moth populations.

The Lincoln County Forest has a wide variety of forest cover types and species, some of which are susceptible to defoliation by gypsy moths, particularly aspen, birch, basswood and oak.

Aspen stands can withstand defoliation relatively well because of a large interconnected root system that can supply nutrients and energy for re-flushing leaves. Often moth populations rise and fall very quickly in aspen areas so consecutive years of defoliation are uncommon. Populations crash because of natural diseases affecting caterpillars when they run out of food.

Northern red oaks are often associated with northern hardwood stands which will not support large populations of gypsy moths therefore these areas are relatively low risk for defoliation. Oaks are more susceptible to mortality because of other agents that attack oaks after they have been stressed by defoliation. Oak dominated stands are more likely to have consecutive years of defoliation due to moths becoming somewhat resistant to natural diseases due to tannic acid in oak leaves they eat.

Birch is another preferred food species. Birch is most often found as a component of northern hardwood stands. Stands that are dominated by birch often have understories of northern hardwood species so defoliation will not result in total loss of a stand.

Basswood is another species that can be affected by the gypsy moth. Basswood, typically a component of northern hardwood stands, would support low populations resulting in isolated areas of defoliation.

The Lincoln County Forestry Land and Parks Department's strategy to combat this defoliating insect will focus on using silvicultural techniques to maintain and improve forest vigor to reduce the effects of defoliation. Suppression spraying with approved insecticides may be considered in high use recreation areas and areas of the forest containing a high percentage of susceptible, high valued timber such as red oak. These areas are identified on the Gypsy Moth Suppression Area Map located in Chapter 900.

Lincoln County Forest's threshold levels and actions for suppression will be as follows:

- If/when trap average is greater than 100 moths / trap in areas identified for active management, begin egg mass surveys. See DNR website.
- If /when surveys result in 500 egg masses per acre based on 1/40th acre (18.6 ft. radius) plots (potential population spike), consider pheromone flakes or insecticide use.
- If/when defoliation areas are 20 acres in size and of a compact and regular shape (minimum eligible size for aerial spraying through the State Suppression Program) or in high use, developed recreation areas, consider suppression spraying.

The presence or discovery of threatened or endangered species may impact the decision to apply suppression tactics and the type of treatment selected.

The DNR's Local Gypsy Moth Coordinator and Entomologist will be available for consultation on control tactics and possible quarantine procedures. DATCP is the agency responsible for quarantine procedures for wood products from infested counties.

610.3.1.2 Jack Pine Budworm

Jack pine budworm, *Choristoneura pinus pinus Freeman*, is a native needle-feeding caterpillar that is generally considered the most significant pest of jack pine. Vigorous young jack pine stands are rarely damaged during outbreaks. The most vigorous stands are well stocked, evenly spaced, fairly uniform in height, and less than 45 years old. Stands older than 45 years that are growing on very sandy sites and suffering from drought or other stresses are very vulnerable to damage. Tree mortality and top-kill are more likely to occur in these stands. This mortality and top-kill create fuel for intense wildfires. It will be

Lincoln County's strategy to harvest at the appropriate rotation age, maintain high stand densities (without overcrowding), and use good site selection for jack pine. This will be an effort to help avoid budworm-caused tree mortality and reduce the threat of damaging wildfires while still providing suitable conditions for jack pine regeneration. Prompt salvage following an outbreak will also help reduce the possibility of wildfire. Use of insecticides is not warranted in combating this forest pest on the County Forest.

610.3.1.3 Oak Wilt

Oak wilt, *Ceratocystis fagacearum (Bretz) Hunt*, is a destructive disease of oak trees. It is responsible for the death of thousands of oak trees in forests, woodlots, and home landscapes each year. Oak wilt is caused by a fungus that invades and impairs the tree's water conducting system, resulting in branch wilting and tree death. Trees in both the red oak group and white oak group are affected. There is no known cure once a tree has oak wilt. Prevention of new oak wilt infection centers is the best management option and involves avoiding injury to healthy trees and removing dead or diseased trees. Healthy trees should not be pruned during the growing season as this attracts beetles that may carry the oak wilt fungus. If pruning is necessary or damage is incurred during the growing season, e.g. through construction activities or storms, the wounds should be painted immediately with a wound paint. It will be Lincoln County's policy to remove infected trees and debark or chip them when located in a high intensive use area. Once chipped or debarked, the materials shall be covered with plastic for a period of six months to kill the fungus and any insects in the material. Timber harvest of red oak will be restricted between April 15 and August 1.

610.3.1.4 Forest Tent Caterpillar

Forest tent caterpillar, *Malacosoma disstria Hubner*, can be found throughout the United States and Canada wherever hardwoods grow. The favored hosts in Wisconsin are aspen and oak. This native insect causes region-wide outbreaks at intervals from 10 to 15 years; outbreaks usually last 2 - 5 years in the Lake States. Severe and repeated defoliation can lead to dieback and/or reduced growth of affected trees, which in some instances may be significant. Populations are often controlled by natural enemies, helping the population crash. Aerial spraying of insecticides can be an option for control as well. It will be

Lincoln County's strategy to employ sound silvicultural practices to combat this cyclic pest.

610.3.1.5 Two-lined Chestnut Borer

The twolined chestnut borer, *Agrilus bilineatus (Weber)*, is a common secondary pest in trees which have been severely defoliated several years in a row. Oaks that have been defoliated by insects such as gypsy moth (*Lymantria dispar*), fall *cankerworm (Alsophila pometaria*), and forest tent caterpillar (*Malacosoma disstria*) can be attacked and killed by the two-lined chestnut borer. Prevention of two-lined chestnut borer is the best management option. Lincoln County will strive to maintain healthy trees through sound silvicultural practices to discourage infestation. Infestations will be salvaged promptly.

610.3.1.6 Emerald Ash Borer

The emerald ash borer, *Agrilus planipennis*, was introduced from Asia and has taken hold in lower Michigan. In Michigan it has resulted in widespread mortality specific to ash including green, white, black and several horticultural varieties. Although not currently present in Wisconsin, it is a severe threat to ash in the State. Ash comprises a significant component in the northern hardwood timber type and can be found in nearly pure stands in some lowland areas. Adult beetles feed on foliage, however it is the larvae that cause mortality by feeding on the phloem and outer sapwood of the ash trees. Lincoln County will cooperate with ongoing trapping and survey efforts. Sound silvicultural practices will continue to be used to maintain forest health. Should an infestation occur, Lincoln County will work with DNR Forest Health staff in applying measures to minimize spread, including aggressive salvage trees.

610.3.2 Funding

Desired control activities on the County Forest will be funded through the County Forestry budget if other sources of funding are not available. In the event costs require additional funding~~, special~~, special appropriations from the County Board will be sought. In addition, State legislation may provide monetary assistance in direct crisis situations where major control operations are undertaken. In case of gypsy moth outbreaks, the County may seek funding from the State of Wisconsin Gypsy Moth Suppression Program.

610.3.3 Legal Obligations

All control operations will comply with regulations as set forth in existing State and Federal legislation. Refer to Wisconsin Administrative Code NR80, AG~~.~~ .29, and the Environmental Pesticide Control Act.

610.3.4 Special Projects

The County may cooperate with other agencies in forest pest research. See Chapter 200.

615 TIMBER THEFT

All cases of alleged timber theft on the County Forest shall be investigated and resolved promptly. An allegation of theft by cutting and /or removing timber from the County Forest does not alleviate the County from payment under §28.11(9) Wis. Stats. The County will collect damages pursuant to §26.05 Wis. Stats. and may also pursue criminal charges under §943.20 Wis. Stats. and /or seek civil damages.

615.1 TIMBER THEFT INVESTIGATION

The following procedure should be used in all cases of alleged timber theft:

1. Determination of Theft

   a. Gathering facts - The County, through its Sheriff's Department and along with assistance of the DNR liaison, rangers and wardens, will ascertain the facts pertinent to the alleged theft, including determination of the damages to the County. Legal counsel representing the County should be involved in all aspects of investigation. Property involved in the alleged theft may be seized pursuant to §26.04 Wis. Stats. for use as evidence.

   b. Boundary determination -If property boundaries are involved, the County shall conduct a legal survey of the boundary in question.

620 ENCROACHMENTS

The County will actively investigate all suspected cases of encroachments on the County Forest. To insure the integrity and continuity of the County F~~forest lands~~orest land, all cases will be dealt with promptly and in a consistent manner. The following procedures will be used in all cases of suspected encroachments:

1. The County will establish property boundaries; if necessary, a legal survey will be conducted.
2. The County will gather all facts.
3. The Committee, in consultation with the Forest Administrator, County legal counsel, and the DNR, will make a decision as to the disposition of the case.
    a. All above ground encroachments that are movable will be removed from County property.
    b. Permanent type facilities, such as homes, garages, and septic systems shall be addressed individually and may be removed or handled by a Land Use Agreement. Sale or transfer of the encroachment should remain an option depending on the circumstances involved and the viability of an adverse possession claim (§893.29 Wis. Stats.).
    c. Provisions in the Land Use Agreement, if that option is pursued, may include granting the encroacher permission to encroach on the County Forest lands with the following stipulations: no other encroachments will be allowed; the permit is non-transferable; the County must be notified once encroachment is terminated; County continues full ownership and control of property; permittee agrees to waive any rights to any future declaration of ownership or interest in the encroached County property; County reserves the right to cancel the permit and the permit is to be filed in the office of the Lincoln County Forestry Department and all fees related to the land use permit shall be paid by the permittee.
    d. A copy of the actual Land Use Agreement can be found in Chapter 900 Appendix.