COUNTY FOREST COMPREHENSIVE LAND USE PLAN

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CHAPTER 600

PROTECTION

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600 PROTECTION

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. Protective methods shall include proper silvicultural methods.

The DNR provides statewide technical guidance that will be used to inform local decisions. This guidance will be referenced to make decisions at the county level.

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, as stated in s.26.11(1), Wis. Stats. The DNR works cooperatively with local fire departments in all fire control efforts. Eau Claire County Forest is part of the Intensive Forest Fire Protection Area. The Fire Management Handbook No. 4325.1 and the Area Operations Plan shall serve as the guidelines for fire control activities.

605.1 COOPERATION WITH THE DEPARTMENT OF NATURAL RESOURCES

Pursuant to s. 26.11(4) and s. 28.11(4)(f), Wis. Stats., and of the Eau Claire 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 Fire Management Handbook, No. 4325.1.

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 backpack 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 may assist and report any wildfires to the DNR, local Fire Department or 911 Dispatch.

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 and the Department will coordinate during high fire danger periods to impose any necessary restrictions. These restrictions may include, but are not limited to, recreation and logging.

605.2 DEBRIS BURNING

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

605.3 CAMPING FIRES

Adequate fire rings will be provided at Coon Fork and Harstad campgrounds. During periods of high fire danger, use of campfires may be restricted. While campfires are allowed on the County Forest, it is unlawful to leave any fire unattended. On a DNR designated red flag day, it is unlawful to start or use any fire.

605.4 PRESCRIBED BURNING

All prescribed burning on County Forest lands will follow the DNR recommendations. See Prescribed Burn Handbook No. 4360.5 for details. Prescribed fire may be an effective management tool on the County Forest.

605.5 COUNTY FOREST FIRE HAZARD AREAS

The DNR places primary emphasis will be placed on fire control efforts in pine areas. Maps of these areas are available at the local DNR field office. The County will cooperate with DNR Fire Control in providing for firebreaks or access ways. 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.

610 CONTROL OF FOREST PESTS & PATHOGENS

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 forest health specialists. The County may cooperate by providing personnel and equipment to assist in these operations.

610.3 SPECIFIC PESTS AND PATHOGENS OF CONCERN

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 Parks and Forest Director, and DNR liaison forester in consultation with the DNR district Forest Health Specialist. Suppression of forest pests may include the following:

1. Silvicultural prescriptions, including timber sales
2. Biological control
3. Chemical control

610.3.1 Specific Pests of Interest

610.3.1.1 Gypsy Moth

Gypsy Moth, *Lymantria dispar*, was introduced pest has moved westward from the northeastern United States since the early 1900's. It reached eastern Wisconsin and has been in some counties since 1988. Despite suppression efforts, it is continuing to progress westerly.

Eau Claire County Forest's strategy to combat this defoliating insect is silvicultural techniques to maintain and improve forest vigor. Suppression spraying with insecticides may be considered in high use recreation areas. Biological controls may be available to help reduce outbreak frequency.

The gypsy moth's rate of spread is variable, tending to be faster in drier landscapes, under drought conditions, and where land area is contiguous forests with >50% of basal area in preferred tree species. These preferred species include oak, aspen, and birch.

The presence of threatened or endangered species in these areas may impact both the type of treatment and the decision to apply suppression tactics. The intent is not to eradicate, but rather to reduce populations so tree mortality is maintained at tolerable levels. 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.

The Eau Claire County Forest's threshold levels for suppression will be as follows: (Note: The first two bullets meet standards for the DNR Gypsy Moth Suppression program.)

- 20 acres in size and of a compact and regular shape (minimum eligible size for aerial spraying through the state suppression program) OR high use, developed recreation areas.
- 500 egg masses per acre based on 1/40th acre (18.6 ft. radius) plots.

Current Situation

On the Eau Claire County Forest, the first catches occurred along the eastern boundary in 1999. The 2004 survey data shows from 1–10 moths/trap on the western half of the forest and 10-100 moths/trap on the eastern half. When the average number of moths/trap exceeds 100, consider doing egg mass surveys to predict defoliation the following spring. Egg mass surveys should be done when the average number of moths/trap exceeds 300.

The Gypsy Moth Suppression Coordinator, in Eau Claire, WI for the West Central Region is responsible for coordinating data collection and appropriate measures to slow the influx of Gypsy Moths into the county. This includes surveys and appropriate spraying.

Landscape and Regional Considerations

The Eau Claire County Forest is located on soils ideally suited for species (oak and aspen) preferred by the gypsy moth. These soils also support some non-preferred species such as the white, red, and jack pine. From a landscape scale perspective, maintaining the oak, aspen, white birch, and tamarack on this forest would be beneficial.

Property-level Considerations

Active management to maintain oak and aspen is a goal for forest management on the Eau Claire County Forest. Currently (2021) there are 16,365 acres of oak (32% of the forest), 8,812 acres of aspen (17%), and 19 acres of white birch (0.1%). Maintaining the quality and abundance of these resources is important at the property and regional levels.

Silvicultural treatments can be used to reduce defoliation and mortality. Treatments to consider include release of seedling and sapling stands; thinning and improvement cutting; salvage, pre-salvage, and sanitation; altering species composition, and stand regeneration through natural or artificial means.

Biological Controls can help slow development of outbreaks and contribute to their collapse. Once established, natural enemies will maintain themselves without further attention. Three gypsy moth specific natural enemies are currently established in Wisconsin and are available for redistribution from the gypsy moth program.

Suppression Sprays are used to prevent or minimize defoliation when an outbreak threatens and the anticipated levels of defoliation and/or mortality are not tolerable. The Committee will make every effort to notify the public on its department Facebook page when an aerial treatment is scheduled by DATCP.

Physical Controls (oiling or removing egg masses, barrier bands, burlap collection bands) can effectively limit defoliation within small areas. In high use areas, they can be educational tools demonstrating gypsy moth management is occurring on the property.

610.3.1.2 Jack Pine Budworm

Jack pine budworm, *Choristoneura pinus,* is a native needle-feeding caterpillar that is generally considered the most significant pest of jack pine. Red, Scotch, and white

pine, and spruce, can also be defoliated and suffer top-kill and mortality by jack pine budworm. Vigorous, young jack pine stands are less likely to be 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. In addition, stressed stands are more susceptible to attack by Ips bark beetle. Mortality from Ips can occur for 2-3 years after the jack pine budworm outbreak collapses. This mortality and top kill create fuel for intense wildfires.

It will be Eau Claire 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. Esthetic strips and/or islands should not be used. Leaving these esthetic strips/islands can prolong the outbreak by giving the budworm areas for breeding. Use of insecticides is not warranted in combating this forest pest on the County Forest.

610.3.1.3 Oak Wilt

Oak wilt, *Bretziella fagacearum*, 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. Counties should use the Oak Harvesting Guidelines to Reduce the Risk of Introduction and Spread of Oak Wilt for management guidance. 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 wound paint.

It is Eau Claire County's policy to remove infected trees. 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. A vibratory plow, or similar implement, may be used to sever root grafts on isolated pockets where feasible. Timber harvest of oak will be restricted between April 15 and August 1.

610.3.1.4 Forest Tent Caterpillar

Forest tent caterpillar, *Malacosoma disstria,* 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 Eau Claire County's strategy to employ sound silvicultural practices to combat this cyclic pest.

610.3.1.5 Two-lined Chestnut Borer

The two-lined chestnut borer, *Agrilus bilineatus,* is a common secondary pest in trees which have been severely defoliated several years in a row. Oaks that are under stress from drought and/or defoliation by insects such as gypsy moth (*Lymantria dispar*), fall cankerworm (*Alsophila pometaria*), and forest tent caterpillar (*Malacosoma disstria*) can be infested and killed by two-lined chestnut borer. Prevention of two-lined chestnut borer through sound silvicultural practices is the best management option. Postponing management activities in stressed stands for two years after severe drought and/or defoliation have ended will provide time for trees to recover and reduce their susceptibility to two-lined chestnut borer attack. Infestations should be salvaged promptly. Eau Claire County will strive to maintain healthy trees through sound silvicultural practices to

discourage infestation.

610.3.1.6 Emerald Ash Borer

The emerald ash borer, *Agrilus planipennis*, was accidentally introduced to North America from Asia in 2002. Emerald ash borer (EAB) infestations in Wisconsin have resulted in widespread mortality to *Fraxinus* species including green, white, and black ash. It is expected that 99% of the ash trees in Wisconsin will die. Ash comprises a significant component in the northern hardwood timber type and can be found in nearly pure stands in some lowland areas. Adult EAB beetles feed on foliage but it is the larvae that cause mortality by feeding on the phloem and outer sapwood of the ash trees.

The Emerald Ash Borer Silviculture Guidelines are available to help resource managers make informed stand-level decisions to manage forests that are not yet infested by EAB, as well as implement salvage harvests and rehabilitation in stands that have already been impacted by EAB.

It is Eau Claire County's policy to follow the Emerald Ash Borer Silviculture Guidelines.

610.3.1.7 HRD

Heterobasidion root disease (HRD, previously called annosum root rot), is caused by the fungus, *Heterobasidion irregulare*. It is a serious disease that causes pine and spruce mortality in Wisconsin, but over 200 woody species have been reported as hosts. Red and white pine trees are most commonly affected in plantation-grown stands subjected to thinning. The disease was first confirmed in Wisconsin in 1993 and has since been found in several counties throughout Wisconsin. Diseased trees, including overstory trees and understory seedlings and saplings, will show fading, thin crowns with tufted foliage, and eventual mortality. Currently there are no curative treatments to eliminate the HRD pathogen from a stand once it is infested, so preventing disease introduction is the best approach.

Infection most often occurs when HRD spores land and germinate on a freshly cut stump. The pathogen then grows into the root tissue and progresses underground from tree to tree through root contact. As the pathogen spreads, and trees decline and die, an ever-expanding pocket of mortality is formed. HRD fruit bodies, or conks, may be found at the base of dead trees and old stumps. Fruit bodies are most commonly observed in the fall but can be found any time of the year.

Guidelines for stump treatment to reduce the risk of introduction and spread of Heterobasidion root disease in Wisconsin should be used by the county forests. The HRD guidelines are designed to help property managers and landowners determine whether the preventive pesticide treatment should be used to reduce the risk of introduction and spread of HRD at the time of harvest in a pine and/or spruce stand.

It is Eau Claire County's policy to follow the "Guidelines for stump treatment to reduce the risk of introduction and spread of Heterobasidion root disease in Wisconsin."

610.3.2 Funding

The County Forest will make all reasonable efforts to secure funding for control efforts, through county funds, or other state, federal or private funding sources.

610.3.3 Special Projects

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

610.4 DEER BROWSE

Forest regeneration and reproduction is critical to sustain both timber production and wildlife habitat and the overall health of the deer herd. As a keystone species, deer can affect forest regeneration, long-term forest production, and forest sustainability.

This is a concern for all interested in forest production and trying to balance deer numbers with habitat.

Eau Claire County Forest may monitor herbivory impacts during forest reconnaissance.

Six deer exclosure plots were identified and fenced off in 2016. These plots will continue to be monitored for deer browse annually. The early findings from these plots have shown deer browse activity to be heaviest on the Oak species.

610.5 INVASIVE PLANT SPECIES

Invasive plants can cause significant negative impacts to the forest. Invasive species can displace native plants and hinder the forest regeneration efforts. Preventing them from dominating habitats 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. Invasive plants on the forest should be documented as well as potential response to new infestations. It shall be Eau Claire County's policy to focus invasive species control measures on highly productive aspen and oak sites, that present battles that can be won through control measures that feature a cost benefit analysis favorable based on stand rotation.

610.5.1 Funding and Partnerships

Grant opportunities for invasive species control funding can be found on the Financial Assistance webpage of the Wisconsin Invasive Species Council. The number of grants for local governments and county forest is limited, especially for terrestrial invasive plant control. Some grants, such as the Department of Natural Resource's turkey stamp program, support invasive plant control as part of larger efforts to promote certain outcomes and might be applicable.

The Department of Natural Resources promotes the formation of Cooperative

Invasive Species Management Areas (CISMAs) through its Weed Management Area – Private Forest Grant Program. While activities funded by this grant are restricted to non-industrial private forests, CISMAs are encouraged to partner with other groups in their area and some can provide technical support to county forests. The CISMA's of Wisconsin can be found on this map.

610.5.2 Best Management Practices

In 2009, the Department of Natural Resources and many stakeholder groups approved a series of Best Management Practices (BMPs) for minimizing the spread of forest invasive plants. The full text of the BMPs is found on the Wisconsin Council on Forestry website. Voluntary use of the BMPs during forestry stewardship activities reduces the spread of invasive plants that can impede forest regeneration in county forests.

BMPs used before, during and after a harvest promote forest regeneration. Reasonable efforts to clean vehicles, equipment, footwear, and other clothing helps reduce the spread of seeds and plant fragments to un-infested forests. Planning the sequence and timing of stewardship activities to reduce contact with invasive plants during forestry operations is another helpful strategy. Similarly, controlling populations of invasive plants before logging reduces the risk of spreading them. Follow-up monitoring of disturbed stands can detect populations of invasive plants while they are still small and more easily managed.

610.5.3 Current Plant Invasives

610.5.3.1 Buckthorn

Two species of invasive buckthorn impact Wisconsin's forests. Common buckthorn, *Frangula cathartica*, is more often found growing on well- drained soils while glossy buckthorn, *Frangula alnus*, favors wetter soils. Both species grow in shade or sun, quickly form dense, even-aged thickets that shade out understory plants, including tree seedlings, and hinder forest regeneration. Their dark colored fruits are eaten by birds who disperse them long distances.

Both buckthorns green-up before native plants and remain green after the natives drop their leaves.

Buckthorn can be controlled by taking advantage of the longer period in which they retain their leaves. Foliar applications of herbicide applied when buckthorn has leaves and the natives are leafless will minimize damage to native plants. Other control options include mowing the shrubs and then treating re-sprouts with foliar herbicide, basal bark herbicide applications, and cut stump herbicide applications.

610.5.3.2 Garlic Mustard

Garlic mustard (*Alliaria petiolata*) is an herbaceous, biennial, native to Europe. During the first year a basal rosette of only leaves develops. The second year, several stems from 1 – 4 feet tall grow from the basal rosette. The leaves have a distinct garlic fragrance when crushed. From the stems grow several small white flowers. Each plant can produce 100's of tiny seeds inside long, narrow capsules. Garlic mustard can quickly colonize disturbed forests as it often follows corridors such as game trails or man-made roads/paths. As garlic mustard spreads, it quickly displaces native plants and is known to radiate chemicals into the soil that disrupt associations between mycorrhizal fungi and native plants. Small populations can be hand pulled, while larger populations are better controlled with prescribed fire and/or herbicide. All pulled plant materials should be bagged and removed from the forest as seeds have been known to mature on dead plants left on site. Treatment should be repeated until the seed bank is depleted, which takes multiple years. Garlic mustard sites should be monitored annually, until no plants are discovered for several years.

610.5.3.3 Spotted Knapweed

Spotted knapweed (*Centaurea stoebe*) is an herbaceous, short-lived perennial native to Eurasia that can grow 2 – 4 feet tall. This plant first appears as a basal rosette of somewhat silvery leaves and may persist this way for several years before developing pink-purple flowers on long spreading stems. The flowers

are thistle-like with many petals and stiff bracts. Knapweed invades dry-upland areas including disturbed sites such as forest trails and openings. The roots exude an allelopathic chemical which inhibits establishment of other plants, hindering forest regeneration. Small populations can be hand pulled provided the entire tap root is removed. Gloves, long sleeves, and pants should be worn when handling this plant as it may cause skin irritation. Chemical control should be applied directly to plants or broadcast across large areas of infestation. Biological control is also available as part of an integrated pest management plan.