

MANAGED FOREST LANDS STEWARDSHIP FORESTRY PLAN

Landowner(s) as Shown on Deed:

Name and Address of Contact Person:

Entry Period: 25 years

Starting January 1, 2014 Ending December 31, 2038

Municipality(s):

Total Acres: 101.000

Attached map(s) show the location of Managed Forest Lands and the areas open or closed to public access.

Purpose and Expectations of the MFL Program

The purpose of the Managed Forest Land Law is to encourage the management of private forestlands for the production of future forest crops for commercial use through sound forestry practices, recognizing the objectives of individual property owners, compatible recreational uses, watershed protection, and development of wildlife habitat and accessibility of private property to the public for recreational purposes. Landowners who enroll in the MFL program pay a reduced property tax (acreage share tax) while growing trees for harvest and pay a yield tax as partial payment of their deferred property taxes. Landowners who close lands to public access pay an additional closed acreage fee. The Wisconsin Department of Natural Resources (WDNR) adjusts acreage share taxes and closed acreage fees every five years.

"*Sound forestry practices*" includes timber cutting, transporting, pruning, planting, and other activities recommended or approved by the WDNR for the effective propagation and improvement of the various timber types common to Wisconsin. It includes management of forest resources other than trees including wildlife habitat, watersheds, aesthetics and endangered and threatened plant and animal species. The law prohibits the use of Managed Forest Lands for commercial recreation (including leasing or receiving consideration for recreational activities), industry, human residence, grazing of domestic livestock, or other uses the WDNR deems incompatible with the practice of forestry.

Management Plan

Your management plan identifies important program requirements and management practices prescribed for your property. The plan writer determines management practices based on stand conditions of your timber and site capability of your land. The plan writer prescribes a completion year for each mandatory practice. WDNR enters that year into their computer system and will remind you of mandatory practices one year prior to the completion date. The plan writer also recommends approved practices (non-mandatory), which you may complete at your discretion.

Your management plan is just one component of Wisconsin's strategy to promote, support and monitor sustainable forestry practices on privately owned lands. Other resources are available to provide you with the most current information available on natural resources management. You can access those resources on the WDNR public website using the addresses referenced in this plan. You are encouraged to consult this information regularly.

Contact your local WDNR Forester for information about:

- Requirements of the Managed Forest Law.
- The sale or transfer of Managed Forest Law lands to other owners.

Management Plan Amendment

Your WDNR forester will monitor your management plan throughout the MFL entry period to address concerns that are newly present or newly identified since the effective date of your plan. Amendment might include changes in tree species, tree stocking, damage from weather (wind, ice, snow), insects and disease, forest fire, flooding, land management goals, new management information (silvicultural science), invasive species, fire management, riparian management zones, or presence of endangered, threatened or high conservation value species or communities.

Landowner Goals

Your management plan blends your goals with site capabilities and MFL program requirements to guide your land management. You identified the following as your goals:

- The primary goal for this property is to maintain forest productivity using good forestry practices.

Mandatory Practices

Mandatory practices must be completed or in progress by the end of the year listed below. You are encouraged to work with a cooperating forester to establish and administer timber sales. Use the [Forestry Assistance Locator](#) to find a cooperating forester; go to <http://dnr.wi.gov> and search 'Forest Landowner'.

Mandatory Practices Summary				
YEAR	STAND(S)	ACRES	TIMBER TYPE	PRACTICE
2020	1	39	White Cedar	THINNING
2020	3	3	White Pine	THINNING
2020	6	6	Swamp Hardwood	GROUP SELECTION HARVEST
2020	8	18	Oak	GROUP SELECTION HARVEST
2035	1	39	White Cedar	THINNING
2035	3	3	White Pine	THINNING
2035	6	6	Swamp Hardwood	GROUP SELECTION HARVEST
2035	7	10	Red Maple	THINNING
2035	8	18	Oak	GROUP SELECTION HARVEST
2035	10	4	Northern Hardwood	SINGLE TREE SELECTION HARVEST

Cutting Notice

At least 30 days prior to cutting or harvesting timber, you must file a **Cutting Notice and Report of Wood Products from Forest Crop and Managed Forest Lands** (Form 2450-032) with your local WDNR forester. The forester must approve the cutting prescription before cutting may proceed. The cutting prescriptions must be within the guidelines of the Department of Natural Resources [Silviculture Handbook](#) and the [Forest Management Guidelines](#). To read these publications go to <http://dnr.wi.gov> and search 'Forest Management'.

Additionally, you must file a separate county cutting notice with the county clerk prior to any harvest. Property taxes must be current prior to receiving approval to cut timber.

Cutting Report

You must file a **Cutting Notice and Report of Wood Products from Forest Crop and Managed Forest Lands** (Form 2450-032) within 30 days of completing your timber harvest. WDNR uses this report to generate an invoice for yield tax based on the amount of timber products you harvested. You pay the WDNR and the payment is sent to your local municipality, which shares the payment with your county on an 80%-20% split.

Approved (Non-Mandatory) Practices

There are many optional management practices to enhance the growth rate and species composition of your forest; improve wildlife habitat and recreational activities; increase carbon sequestration; reduce fire hazards on your property; to improve access; and to help you meet other goals. Many of these practices may be eligible for cost-share assistance under the Wisconsin Forest Landowner Grant Program (WFLGP). Listed below are practices common to all timber stands:

- Seeding and mowing of trails and openings – Please contact your local WDNR Wildlife Biologist for information about seed mixtures
- Maintaining snags, den trees, and “wolf” trees – Retain trees during timber harvests and improvement cuts
- Controlling invasive species

Summarized in the table below are approved practices that are specific to individual timber stands. To learn more wildlife friendly ideas, go to <http://dnr.wi.gov> and search “Wildlife”.

Approved (non-mandatory) Practices Summary for Individual Stands				
YEAR	STAND(S)	ACRES	PRIMARY TYPE	PRACTICE
2014	3	3	White Pine	PRUNE
2020	1	39	White Cedar	WETLAND HARVESTING
2020	6	6	Swamp Hardwood	WETLAND HARVESTING
2020	10	4	Northern Hardwood	RELEASE HEMLOCK
2035	1	39	White Cedar	WETLAND HARVESTING
2035	6	6	Swamp Hardwood	WETLAND HARVESTING
2035	8	18	Oak	PATCH SELECTION HARVEST
ANY	1	39	White Cedar	MONITOR WETLAND DRAINAGE
ANY	4	7	Alder Swamp	MONITOR WETLAND DRAINAGE
ANY	6	6	Swamp Hardwood	MONITOR WETLAND DRAINAGE
ANY	7	10	Red Maple	INVASIVE PLANT CONTROL
ANY	8	18	Oak	DAMAGE CONTROL
ANY	8	18	Oak	INVASIVE PLANT CONTROL
ANY	8	18	Oak	SEEDBED PREPARATION
ANY	10	4	Northern Hardwood	DAMAGE CONTROL
ANY	10	4	Northern Hardwood	INVASIVE PLANT CONTROL

General Description of Areas Identified on Your MFL Property

Foresters combine areas of land with similar vegetative and non-vegetative characteristics for management purposes and call these areas “stands”. The plan describes these stands and you can view the stands on the MFL map(s). Listed below are the descriptions of forest and non-forest areas on your MFL property.

Aspen Forest

Aspen Forests consist predominately of trembling aspen (also known as quaking aspen and white popple) and bigtooth aspen (also known as yellow popple). Aspen forests in the northern parts of the state sometimes contain balsam poplar. Red maple, paper birch, balsam fir, red oak, white pine and other native trees commonly grow with Aspen. Aspen is a relatively short-lived tree that usually regenerates all at once following a major disturbance such as wind, fire or cutting. Aspen requires full sunlight and does not grow well in the shade of taller trees.

Aspen grows best on well-drained loamy soils but can do well within a wide range of soil conditions. Balsam poplar is often present in wetter soils in northern Wisconsin.

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White Cedar Forest

White Cedar Forests are composed of more than 50% white cedar; in mixed swamp conifer stands, white cedar is predominant. Spruce, tamarack, balsam fir, hemlock, black ash, birch, white pine and other native trees commonly grow with white cedar. White cedar forests are often difficult to regenerate.

White cedar grows best on upland soils of limestone origin but most commonly grows in swamps.

Lowland Herbaceous Vegetation

Lowland Herbaceous Vegetation contains 50% or more of non-woody vegetation, such as lowland asters, stinging nettle, and wild sunflowers, but few trees. Lowland herbaceous vegetation can grow in a variety of soils, but usually grows in wetter silt and clay soils.

Alder Swamp

Alder Swamps are wet and contain more than 50% alder. Alder swamps usually occur in peat and muck soils.

Red Maple Forest

Red Maple Forests are composed of over 50% red maple. Ash, elm, aspen, white birch, white pine, balsam fir, white cedar, oak and other native trees commonly grow with red maple. Over the last century, red maple has dramatically increased in abundance throughout the state. Red maple can produce abundant seed and stumps readily sprout. It tolerates shade, and grows on a wide range of soils from sands to loams, and in conditions from dry to wet. It grows best on well-drained loamy soils.

Northern Hardwood Forest

Northern Hardwood Forests consist of over 50% of any combination of sugar maple, basswood, white ash, yellow birch, and beech trees. Sugar maple is typically the dominant tree in this type except in eastern Wisconsin where beech is sometimes dominant. Red maple, oak, hemlock, or balsam fir and other native trees commonly grow with northern hardwoods. Northern hardwood, the most common forest type in Wisconsin, is one of the few forest types that can be perpetuated in an uneven age condition. In northern Wisconsin, northern hardwoods are less diverse than they once were; historically they included more hemlock and white pine.

Northern hardwood forests grow best on deep, well-drained, silt loam soils. Northern hardwoods do not grow well on excessively dry or wet soil.

Oak Forest

Oak Forests are composed of over 50% oak. In Wisconsin, red oak, black oak, pin oak, white oak, and bur oak are common types of oak trees. Aspen, red maple, hickory, white pine, white birch, basswood, black cherry, sugar maple, elm, and jack pine commonly grow in oak forests. Oak forests are abundant, occurring throughout the state and growing on most soil types. Composition of oak forests varies depending on their location within Wisconsin and on site quality. On nutrient-poor, dry sites, oak forests might include black oak, white oak, northern pin oak, and bur oak. On dry sites, hickories, black cherry, aspen, red maple, and paper birch commonly grow with oak. In northern Wisconsin, pines may also grow in dry oak forests. Sites with a better nutrient and moisture supply may support mixtures of red and white oak, or may be dominantly red oak. On sites with more nutrients, basswood, hickories, ironwood, black cherry, elms, red maple, or white pine may grow with oak. On the richest sites, sugar maple or white ash might also grow with oak. While oaks are still very common trees in Wisconsin, the abundance of high-quality red and white oaks on nutrient-rich sites has declined considerably due to forest succession and failed regeneration. In general, oaks grow best on well-drained loamy soils. All oaks require drastic disturbance of the forest, both overstory and understory, in order to regenerate. On richer sites, oak forests are particularly difficult to regenerate and competition control is essential. Fire is one tool that facilitates the regeneration and maintenance of oak forests. To regenerate oak, foresters commonly mimic the effects of fire using mechanical tools or chemical application.

White Pine Forest

White Pine Forests consist of more than 50% white pine. Red and jack pine, aspen, paper birch, red maple, oak, balsam fir, white spruce, eastern hemlock and other native trees commonly grow with white pine. White pine is a long-lived tree species that was common in Wisconsin's historic forests. Heavy logging during the cutover made white pine scarce for a time. As trees are becoming old enough to be good seed producers, its numbers are increasing.

White pine grows in almost all soil conditions in Wisconsin but does best on loamy sands, sandy loams, and loam soils.

Swamp Hardwood Forest

Swamp Hardwood Forests consist of any combination of more than 50% black ash, green ash, red maple, silver maple, swamp white oak, or American elm. This type occurs on wetlands characterized by a fluctuating water table near or above the soil surface with a subsurface water flow. Aspen, white cedar, balsam fir, white pine, white birch and other native trees commonly grow with swamp hardwoods.

Swamp hardwoods typically grow on very wet soils in closed water basins that do not have a stream or river running through them and that experience significant water table fluctuation. Though capable of growing in semi-stagnant conditions, they grow best if the water is moving and aerated. Swamp hardwoods are subject to wind throw due to high water table. When selecting a cutting method, consider its effect on the water table. On some sites, the growth of swamp hardwoods can be slow, making these swamp hardwood stands non-productive.

Resource Protection and Management

Special records and inventories identify important natural, historical or archeological resources on or near your property. The plan writer designed your management practices to protect these resources from disturbance.

You can go to the WDNR website to find information used to evaluate stand conditions and determine management practices for your property. Go to <http://wi.dnr.gov> and search using the keywords shown.

- To learn about [Ecological Landscapes](#) of Wisconsin, search for 'Landscapes'.
- To learn about [Wildlife Management, Habitat](#) and [Natural Communities](#), search for 'Wildlife' and 'Biodiversity'.
- To see the Wisconsin [Wildlife Action Plan](#), and from there [Explore Species Profiles](#), search for 'ER' or 'Wildlife'.

Your lands lie within a landscape known as Forest Transition. You can find an overview of the landscape, species of greatest conservation need, management opportunities and much more. Go to: <http://dnr.wi.gov> and search [Landscapes](#).

Endangered, Threatened and Special Concern Species and Plant Communities

Natural Heritage Inventory (NHI) searches determine if your plan may affect endangered, threatened, or special concern animals, plants or plant communities. To learn about rare plants, animals and natural plant communities in Wisconsin visit <http://dnr.wi.gov> and search for '[NHI](#)'.

The Natural Heritage Inventory (NHI) review showed that there are known Endangered, Threatened or Special Concern Species or Natural Communities on or in the area surrounding your property but suitable habitat for them is not found on your property.

When implementing management practices, mitigation might be required, such as:

- Best management practices that protect water quality and habitat for rare or aquatic species
- Harvest limits or restrictions to avoid impacts to nesting birds or NHI Working List species
- Surveys for rare species prior to timber sale establishment

Archeological and Historical Resources

State Historical Society records searches determine if your plan may affect archeological and historical sites. These sites require protection from disturbance, including road building, grading or gravelling. Contact your local WDNR Forester for additional information on archaeological and historical sites.

The Archeological Resources Inventory lists no archeological resources within this MFL property.

The Historical Resources Inventory lists no historical resources within this MFL property.

Invasive Plant Species

Invasive plants may decrease the productivity, regeneration, wildlife habitat, and recreational value of your property. It is essential to identify and control small populations of invasive plants to minimize their spread. The individual stand descriptions list any invasive plant species identified on your property. For information on invasive plant control, consult Wisconsin Council on Forestry's [Forestry Best Management Practices for Invasive Species](#); go to <http://dnr.wi.gov> and search 'Invasive'.

Best Management Practices for Water Quality (BMPs)

To protect the water quality in Wisconsin's lakes, streams and wetlands and to prevent soil erosion, implement *Wisconsin's Forestry Best Management Practices for Water Quality* during all forest management activities, such as road building or timber harvesting. Specific BMPs will be included in detailed practice or harvest plans. You may require water regulations permits to cross wetlands and streams. Please go to <http://dnr.wi.gov> and search 'Forest Management' to review all [BMPs for water quality](#).

Forest Health

Over time, your forest may suffer from insects, disease, windstorm, fire, flooding or drought, etc. These problems may alter your management prescriptions. If you are concerned about forest health, please contact your local WDNR Forester or go to <http://dnr.wi.gov> and search 'Forest health'.

STAND NUMBER 1		39 Acres
Primary Type:	White Cedar Forest -- Poletimber	
Secondary Type:	White Cedar Forest -- Small Sawtimber	

Stand Information

The most abundant tree species in this stand include Northern White Cedar (84%); Balsam Fir (6%)-3-2-628179 and Black Spruce (5%).

These trees make up an even aged stand that originated about 1898. Tree ages in even-aged stands may vary slightly, but the trees began growing in relatively the same period.

Soil type, moisture and nutrient availability affect site quality, which limits the kind of tree species that will grow on a site, as well as the growth rate and quality of individual trees. Soil productivity also determines the amount of timber harvesting sustainable over time. It also affects other forest attributes, such as wildlife habitat and biodiversity.

This stand has a muck soil. Muck soils usually occur in wetlands, and have a surface layer of decomposed plant material at least 16" thick. The extent of decomposition of plant parts prevents identification of the original vegetation. Muck soils are wet, so organic matter decomposes slowly and nutrients may not always be available for tree growth. Trees that grow on peat soils are adapted to wet conditions and are typically slow growing. Take care to prevent compaction and rutting when using equipment on these soils. In general, conduct management activities only when the ground is well frozen. These soils may be unsuitable for whole-tree harvesting and the harvesting of fine woody material because of their potential for nutrient depletion.

Stand Conditions, Special Features or Characteristics

Stand has good quality cedar with good crown mass. The best cedar quality and stocking is in the northern part of the stand. Small patches of black spruce saplings and poletimber are found in the NW part of the stand. Single-tree and canopy gap blowdowns have occurred over the years. Regeneration is sparse throughout the stand, even in blowdown patches. Objective is to use extended rotation ages and to maintain winter thermal cover for wildlife. There is some cedar mortality along the eastern edge of the stand, but balsam fir regeneration is dense there. See Addendum.

Management (Silvicultural) System

Manage and regenerate this stand within generally accepted silvicultural guidelines for the primary type according to the following management system.

NATURAL EVEN-AGED REGENERATION OF TIMBER TYPE WITH FUTURE THINNING -- Manage the stand through its rotation (the period between initial regeneration and the stand's final cutting) as a single aged forest. Periodically thin the stand throughout the life of the stand to improve quality and vigor. Regeneration cutting will remove the old stand to provide the necessary open conditions and sunlight to regenerate the stand naturally.

Year Scheduled	Mandatory Practice
2020	THINNING. Remove trees to reduce stand density thereby improving tree growth and enhancing forest health, or to utilize trees that are at risk of mortality. Thin the stand to reduce stocking and concentrate growth on trees that are more desirable by following the order of removal and tree retention guidelines.
2035	THINNING. Remove trees to reduce stand density thereby improving tree growth and enhancing forest health, or to utilize trees that are at risk of mortality. Thin the stand to reduce stocking and concentrate growth on trees that are more desirable by following the order of removal and tree retention guidelines.

Year Scheduled	Approved (Non-Mandatory) Practice
2020	WETLAND HARVESTING. Limit activities in wetlands to when the ground is frozen or dry to minimize rutting. Keep slash out of open water and do not move upland slash into wetlands. Avoid equipment maintenance and fueling in wetlands. Obtain any required permits from your municipal, county, state and federal agencies.
2035	WETLAND HARVESTING. Limit activities in wetlands to when the ground is frozen or dry to minimize rutting. Keep slash out of open water and do not move upland slash into wetlands. Avoid equipment maintenance and fueling in wetlands. Obtain any required permits from your municipal, county, state and federal agencies.
ANY	MONITOR WETLAND DRAINAGE. Monitor natural drainage patterns to ensure that they are not disrupted, which would increase the period of waterlogged soils in this stand and subject adjacent stands to increased waterlogging. You may need to contact the DNR Water Specialist if drainage patterns appear to change.

STAND NUMBER 2		5 Acres
Primary Type:	Aspen Forest -- Seedlings and Saplings	
Secondary Type:		

Stand Information

The most abundant tree species in this stand is Aspen.

These trees make up an even aged stand that originated about 2007. Tree ages in even-aged stands may vary slightly, but the trees began growing in relatively the same period.

Soil type, moisture and nutrient availability affect site quality, which limits the kind of tree species that will grow on a site, as well as the growth rate and quality of individual trees. Soil productivity also determines the amount of timber harvesting sustainable over time. It also affects other forest attributes, such as wildlife habitat and biodiversity.

This stand has a loamy sand soil. Loamy sand soils are 70% to 85% sand with up to 30% silt plus clay. Loamy sand soils are well-drained and somewhat nutrient poor, but the finer soil particles provide a greater moisture and nutrient supply than pure sands. Trees that are adapted to grow on these soils must be able to tolerate periods of drought.

Stand Conditions, Special Features or Characteristics

This is a good quality aspen stand that was regenerated in 2007. Red maple, red oak, and pine sawtimber are scattered through the stand. See Addendum.

Management (Silvicultural) System

Manage and regenerate this stand within generally accepted silvicultural guidelines for the primary type according to the following management system.

NATURAL EVEN-AGED REGENERATION OF TIMBER TYPE WITHOUT FUTURE THINNING --
Manage the stand through its rotation (the period between initial regeneration and the stand's final cutting) as a single aged forest. Regeneration cutting will remove the old stand to provide the necessary open conditions and sunlight to regenerate the stand naturally.

STAND NUMBER 3		3 Acres
Primary Type:	White Pine Forest -- Small Sawtimber	
Secondary Type:	White Pine Forest -- Poletimber	

Stand Information

The most abundant tree species in this stand include White Pine (61%) and Red Oak (29%).

These trees make up an even aged stand that originated about 1947. Tree ages in even-aged stands may vary slightly, but the trees began growing in relatively the same period.

Soil type, moisture and nutrient availability affect site quality, which limits the kind of tree species that will grow on a site, as well as the growth rate and quality of individual trees. Soil productivity also determines the amount of timber harvesting sustainable over time. It also affects other forest attributes, such as wildlife habitat and biodiversity.

This stand has a loamy sand soil. Loamy sand soils are 70% to 85% sand with up to 30% silt plus clay. Loamy sand soils are well-drained and somewhat nutrient poor, but the finer soil particles provide a greater moisture and nutrient supply than pure sands. Trees that are adapted to grow on these soils must be able to tolerate periods of drought.

Stand Conditions, Special Features or Characteristics

This stand has good quality white pine and moderate quality red oak. Rock outcrops are common throughout the stand. See Addendum.

Management (Silvicultural) System

Manage and regenerate this stand within generally accepted silvicultural guidelines for the primary type according to the following management system.

NATURAL EVEN-AGED REGENERATION OF TIMBER TYPE WITH FUTURE THINNING -- Manage the stand through its rotation (the period between initial regeneration and the stand's final cutting) as a single aged forest. Periodically thin the stand throughout the life of the stand to improve quality and vigor. Regeneration cutting will remove the old stand to provide the necessary open conditions and sunlight to regenerate the stand naturally.

Year Scheduled	Mandatory Practice
2020	THINNING. Remove trees to reduce stand density thereby improving tree growth and enhancing forest health, or to utilize trees that are at risk of mortality. Thin the stand to reduce stocking and concentrate growth on trees that are more desirable by following the order of removal and tree retention guidelines.
2035	THINNING. Remove trees to reduce stand density thereby improving tree growth and enhancing forest health, or to utilize trees that are at risk of mortality. Thin the stand to reduce stocking and concentrate growth on trees that are more desirable by following the order of removal and tree retention guidelines.

Year Scheduled	Approved (Non-Mandatory) Practice
2014	PRUNE. Remove branches from standing trees to improve the quality of the future sawlog sized tree.

STAND NUMBER 4		7 Acres
Primary Type:	Alder Swamp	
Secondary Type:		

Stand Information

Soil type, moisture and nutrient availability affect site quality, which limits the kind of tree species that will grow on a site, as well as the growth rate and quality of individual trees. Soil productivity also determines the amount of timber harvesting sustainable over time. It also affects other forest attributes, such as wildlife habitat and biodiversity.

This stand has a muck soil. Muck soils usually occur in wetlands, and have a surface layer of decomposed plant material at least 16" thick. The extent of decomposition of plant parts prevents identification of the original vegetation. Muck soils are wet, so organic matter decomposes slowly and nutrients may not always be available for tree growth. Trees that grow on peat soils are adapted to wet conditions and are typically slow growing. Take care to prevent compaction and rutting when using equipment on these soils. In general, conduct management activities only when the ground is well frozen. These soils may be unsuitable for whole-tree harvesting and the harvesting of fine woody material because of their potential for nutrient depletion.

This area does not meet the minimum qualifications of a forest because it is either not stocked with trees or does not have the minimum number of trees or timber volume per acre. Under the Managed Forest Law Program, you can enter areas like this under the non-productive category. This area, as well as other non-productive areas, cannot exceed 20% of the total enrolled acreage.

Stand Conditions, Special Features or Characteristics

Stand contains a small stream, impoundment, and tag alder.

Management (Silvicultural) System

Manage and regenerate this stand within generally accepted silvicultural guidelines for the primary type according to the following management system.

NO SILVICULTURAL SYSTEM APPLICABLE -- This stand has been designated as non-productive. If you choose to passively manage this stand, it will be subject to natural processes like forest succession, wildlife and insect activity, tree aging and decay, windstorms, fire, etc. If you choose to actively manage this stand, in the future a new silvicultural system and management practices must be prescribed.

Year Scheduled	Approved (Non-Mandatory) Practice
ANY	MONITOR WETLAND DRAINAGE. Monitor natural drainage patterns to ensure that they are not disrupted, which would increase the period of waterlogged soils in this stand and subject adjacent stands to increased waterlogging. You may need to contact the DNR Water Specialist if drainage patterns appear to change.

STAND NUMBER 5		7 Acres
Primary Type:	Aspen Forest -- Seedlings and Saplings	
Secondary Type:		

Stand Information

The most abundant tree species in this stand is Quaking Aspen.

These trees make up an even aged stand that originated about 2007. Tree ages in even-aged stands may vary slightly, but the trees began growing in relatively the same period.

Soil type, moisture and nutrient availability affect site quality, which limits the kind of tree species that will grow on a site, as well as the growth rate and quality of individual trees. Soil productivity also determines the amount of timber harvesting sustainable over time. It also affects other forest attributes, such as wildlife habitat and biodiversity.

This stand has a loamy sand soil. Loamy sand soils are 70% to 85% sand with up to 30% silt plus clay. Loamy sand soils are well-drained and somewhat nutrient poor, but the finer soil particles provide a greater moisture and nutrient supply than pure sands. Trees that are adapted to grow on these soils must be able to tolerate periods of drought.

Your plan writer found the following invasive plant species during the forest inventory process:

- Prickly Ash

Stand Conditions, Special Features or Characteristics

This stand originated from a 2007 clearcut. See Addendum.

Management (Silvicultural) System

Manage and regenerate this stand within generally accepted silvicultural guidelines for the primary type according to the following management system.

NATURAL EVEN-AGED REGENERATION OF TIMBER TYPE WITHOUT FUTURE THINNING -- Manage the stand through its rotation (the period between initial regeneration and the stand's final cutting) as a single aged forest. Regeneration cutting will remove the old stand to provide the necessary open conditions and sunlight to regenerate the stand naturally.

STAND NUMBER 6		6 Acres
Primary Type:	Swamp Hardwood Forest -- Poletimber	
Secondary Type:		

Stand Information

The most abundant tree species in this stand include Black Ash (59%); Red Maple (15%)-3-2-628190 and Northern White Cedar (8%).

These trees make up an even aged stand that originated about 1921. Tree ages in even-aged stands may vary slightly, but the trees began growing in relatively the same period.

Soil type, moisture and nutrient availability affect site quality, which limits the kind of tree species that will grow on a site, as well as the growth rate and quality of individual trees. Soil productivity also determines the amount of timber harvesting sustainable over time. It also affects other forest attributes, such as wildlife habitat and biodiversity.

This stand has a muck soil. Muck soils usually occur in wetlands, and have a surface layer of decomposed plant material at least 16" thick. The extent of decomposition of plant parts prevents identification of the original vegetation. Muck soils are wet, so organic matter decomposes slowly and nutrients may not always be available for tree growth. Trees that grow on peat soils are adapted to wet conditions and are typically slow growing. Take care to prevent compaction and rutting when using equipment on these soils. In general, conduct management activities only when the ground is well frozen. These soils may be unsuitable for whole-tree harvesting and the harvesting of fine woody material because of their potential for nutrient depletion.

Stand Conditions, Special Features or Characteristics

The stand contains fair quality black ash poletimber. Tree crowns do not show significant dieback. White cedar poletimber and small sawtimber are found along the southern edge of the stand. The stand will be managed using group selection to maintain structural diversity and to avoid swamping the site. Retain the cedar component. See Addendum.

Management (Silvicultural) System

Manage and regenerate this stand within generally accepted silvicultural guidelines for the primary type according to the following management system.

NATURAL UNEVEN-AGED REGENERATION OF TIMBER TYPE -- Manage the stand to develop and maintain three or more age classes of trees. Uneven-aged management is an option primarily applied to shade tolerant tree species or forest types.

Year Scheduled	Mandatory Practice
2020	<p>GROUP SELECTION HARVEST. Regenerate this stand by harvesting to create canopy group openings from 75 feet (1/10 acre) to 160 feet (1/2 acre) in diameter. This group selection regeneration method sets up natural conditions that benefit different tree species. The smaller openings benefit more shade tolerant species and the larger openings encourage growth of those species that do well in less shade. The stand might require site preparation. Thin the remainder of the stand to reduce stocking and concentrate growth on trees that are more desirable by following the order of removal and tree retention guidelines.</p> <p>Check this stand for successful regeneration. If this stand has not adequately regenerated three years after the group selection harvest, additional management practices will be required.</p>
2035	<p>GROUP SELECTION HARVEST. Regenerate this stand by harvesting to create canopy group openings from 75 feet (1/10 acre) to 160 feet (1/2 acre) in diameter. This group selection regeneration method sets up natural conditions that benefit different tree species. The smaller openings benefit more shade tolerant species and the larger openings encourage growth of those species that do well in less shade. The stand might require site preparation. Thin the remainder of the stand to reduce stocking and concentrate growth on trees that are more desirable by following the order of removal and tree retention guidelines.</p> <p>Check this stand for successful regeneration. If this stand has not adequately regenerated three years after the group selection harvest, additional management practices will be required.</p>

Year Scheduled	Approved (Non-Mandatory) Practice
2020	<p>WETLAND HARVESTING. Limit activities in wetlands to when the ground is frozen or dry to minimize rutting. Keep slash out of open water and do not move upland slash into wetlands. Avoid equipment maintenance and fueling in wetlands. Obtain any required permits from your municipal, county, state and federal agencies.</p>
2035	<p>WETLAND HARVESTING. Limit activities in wetlands to when the ground is frozen or dry to minimize rutting. Keep slash out of open water and do not move upland slash into wetlands. Avoid equipment maintenance and fueling in wetlands. Obtain any required permits from your municipal, county, state and federal agencies.</p>
ANY	<p>MONITOR WETLAND DRAINAGE. Monitor natural drainage patterns to ensure that they are not disrupted, which would increase the period of waterlogged soils in this stand and subject adjacent stands to increased waterlogging. You may need to contact the DNR Water Specialist if drainage patterns appear to change.</p>

STAND NUMBER 7		10 Acres
Primary Type:	Red Maple Forest -- Large Sawtimber	
Secondary Type:		

Stand Information

The most abundant tree species in this stand include Red Maple (51%); Red Oak (19%)-3-2-628195 and Hemlock (9%).

These trees make up a two-aged stand with two distinct age classes. The oldest age class of trees originated about 1921. Management practices must take into account that some trees will become mature earlier than other trees.

Soil type, moisture and nutrient availability affect site quality, which limits the kind of tree species that will grow on a site, as well as the growth rate and quality of individual trees. Soil productivity also determines the amount of timber harvesting sustainable over time. It also affects other forest attributes, such as wildlife habitat and biodiversity.

This stand has a sandy loam soil. Sandy loam soils are 50% to 70% sand particles with up to 50% silt and 20% clay. Sandy loam soils typically have good internal drainage and soil nutrients sufficient to support excellent growth for many tree species. Trees that are adapted to grow on sandy loam soils generally have a high rate of growth.

Your plan writer found the following invasive plant species during the forest inventory process:

- Prickly Ash

Stand Conditions, Special Features or Characteristics

This is a multi-aged stand. The oldest red oak originated in 1914. Most of the large sawtimber red maple and oak originated in 1921. The aspen sapling patch originated in 1999. The balsam fir originated between 1992-2004. The stand has diverse size structure. Sawtimber quality is good, although some oaks have epicormic branches. Scattered white pine large sawtimber trees are present, as are hemlock. Other than balsam fir, there is virtually no tree regeneration. The white pine and hemlock should be retained for diversity. See Addendum.

Management (Silvicultural) System

Manage and regenerate this stand within generally accepted silvicultural guidelines for the primary type according to the following management system.

NATURAL EVEN-AGED REGENERATION OF TIMBER TYPE WITH FUTURE THINNING -- Manage the stand through its rotation (the period between initial regeneration and the stand's final cutting) as a single aged forest. Periodically thin the stand throughout the life of the stand to improve quality and vigor. Regeneration cutting will remove the old stand to provide the necessary open conditions and sunlight to regenerate the stand naturally.

Year Scheduled	Mandatory Practice
2035	THINNING. Remove trees to reduce stand density thereby improving tree growth and enhancing forest health, or to utilize trees that are at risk of mortality. Thin the stand to reduce stocking and concentrate growth on trees that are more desirable by following the order of removal and tree retention guidelines.

Year Scheduled	Approved (Non-Mandatory) Practice
ANY	INVASIVE PLANT CONTROL. Take specific measures to manage plant or tree species whose aggressive growth or reproductive patterns threaten the health or regeneration of the stand. Get the latest information on control measures from your local WDNR office or WDNR Website.

STAND NUMBER 8		18 Acres
Primary Type:	Oak Forest -- Large Sawtimber	
Secondary Type:	Northern Hardwood Forest -- Small Sawtimber	

Stand Information

The most abundant tree species in this stand include Red Oak (41%); Sugar Maple (29%)-4-2-628198; White Ash (9%)-4-3-628198 and Red Maple (6%).

These trees make up an even aged stand that originated about 1914. Tree ages in even-aged stands may vary slightly, but the trees began growing in relatively the same period.

Soil type, moisture and nutrient availability affect site quality, which limits the kind of tree species that will grow on a site, as well as the growth rate and quality of individual trees. Soil productivity also determines the amount of timber harvesting sustainable over time. It also affects other forest attributes, such as wildlife habitat and biodiversity.

This stand has a sandy loam soil. Sandy loam soils are 50% to 70% sand particles with up to 50% silt and 20% clay. Sandy loam soils typically have good internal drainage and soil nutrients sufficient to support excellent growth for many tree species. Trees that are adapted to grow on sandy loam soils generally have a high rate of growth.

Your plan writer found the following invasive plant species during the forest inventory process:

- Prickly Ash

Stand Conditions, Special Features or Characteristics

The stand consists of very high quality red oak and northern hardwoods. There is very little poletimber and almost no tree regeneration. The forest floor is covered with dense sedge. Deer browsing on white ash seedlings is intense. Tree diameters are largest in the southern edge of the stand. The stand is likely somewhat younger at the north end of the stand. The stand will be managed using group and patch selection to regenerate hardwoods and oak. Protection of hardwood tree regeneration from browsing will be required for success.

Management (Silvicultural) System

Manage and regenerate this stand within generally accepted silvicultural guidelines for the primary type according to the following management system.

NATURAL UNEVEN-AGED REGENERATION OF TIMBER TYPE -- Manage the stand to develop and maintain three or more age classes of trees. Uneven-aged management is an option primarily applied to shade tolerant tree species or forest types.

Year Scheduled	Mandatory Practice
2020	<p>GROUP SELECTION HARVEST. Regenerate this stand by harvesting to create canopy group openings from 75 feet (1/10 acre) to 160 feet (1/2 acre) in diameter. This group selection regeneration method sets up natural conditions that benefit different tree species. The smaller openings benefit more shade tolerant species and the larger openings encourage growth of those species that do well in less shade. The stand might require site preparation. Thin the remainder of the stand to reduce stocking and concentrate growth on trees that are more desirable by following the order of removal and tree retention guidelines.</p> <p>Check this stand for successful regeneration. If this stand has not adequately regenerated three years after the group selection harvest, additional management practices will be required.</p>
2035	<p>GROUP SELECTION HARVEST. Regenerate this stand by harvesting to create canopy group openings from 75 feet (1/10 acre) to 160 feet (1/2 acre) in diameter. This group selection regeneration method sets up natural conditions that benefit different tree species. The smaller openings benefit more shade tolerant species and the larger openings encourage growth of those species that do well in less shade. The stand might require site preparation. Thin the remainder of the stand to reduce stocking and concentrate growth on trees that are more desirable by following the order of removal and tree retention guidelines.</p> <p>Check this stand for successful regeneration. If this stand has not adequately regenerated three years after the group selection harvest, additional management practices will be required.</p>

NO SILVICULTURAL SYSTEM APPLICABLE -- This stand has been designated as non-productive. If you choose to passively manage this stand, it will be subject to natural processes like forest succession, wildlife and insect activity, tree aging and decay, windstorms, fire, etc. If you choose to actively manage this stand, in the future a new silvicultural system and management practices must be prescribed.

STAND NUMBER 10

4 Acres

Primary Type: Northern Hardwood Forest -- Small Sawtimber

Secondary Type: Northern Hardwood Forest -- Poletimber

Stand Information

The most abundant tree species in this stand include White Ash (32%); Red Oak (27%)-3-2-628205 and Basswood (16%).

These trees make up an even aged stand that originated about 1951. Tree ages in even-aged stands may vary slightly, but the trees began growing in relatively the same period.

Soil type, moisture and nutrient availability affect site quality, which limits the kind of tree species that will grow on a site, as well as the growth rate and quality of individual trees. Soil productivity also determines the amount of timber harvesting sustainable over time. It also affects other forest attributes, such as wildlife habitat and biodiversity.

This stand has a loam soil. Loam soils are a mixture of sand, silt and clay particles. Loam soils are 23% to 52% sand, 28% to 50% silt, and 48% to 78% clay. Silt loam or silt soils have relatively higher amounts of silt particles. Loam soils typically have an abundance of moisture and nutrients to sustain excellent growth rates for many tree species. Take care to prevent compaction and rutting when using equipment on these soils.

Your plan writer found the following invasive plant species during the forest inventory process:

- Prickly Ash

Stand Conditions, Special Features or Characteristics

This is a young, good quality stand of northern hardwood and red oak. The forest floor contains sedge. There is virtually no tree regeneration, with the exception of one-foot-tall ironwood seedlings. Hemlock poletimber is found along the wetland edge. Retain all hemlock for diversity. See Addendum.

Management (Silvicultural) System

Manage and regenerate this stand within generally accepted silvicultural guidelines for the primary type according to the following management system.

NATURAL UNEVEN-AGED REGENERATION OF TIMBER TYPE -- Manage the stand to develop and maintain three or more age classes of trees. Uneven-aged management is an option primarily applied to shade tolerant tree species or forest types.

Year Scheduled	Mandatory Practice
2035	SINGLE TREE SELECTION HARVEST. Regenerate this stand by harvesting individual trees of various size and age classes. This single tree selection regeneration method provides space for natural regeneration and promotes growth of the remaining trees. Select individual trees for removal from all overstocked size classes to achieve desired residual density levels by following the order of removal and tree retention guidelines. Create canopy regeneration gaps on approximately 10% of the stand to provide adequate sunlight to establish vigorous tree seedlings.

Year Scheduled	Approved (Non-Mandatory) Practice
2020	RELEASE HEMLOCK. Release better quality hemlock along the wetland edge from overtopping low-quality hardwood (non-oak).
ANY	DAMAGE CONTROL. Reduce wildlife damage by protecting seedlings from deer, rabbit or rodent browsing.
ANY	INVASIVE PLANT CONTROL. Take specific measures to manage plant or tree species whose aggressive growth or reproductive patterns threaten the health or regeneration of the stand. Get the latest information on control measures from your local WDNR office or WDNR Website.

ADDITIONAL INFORMATION FOR MANAGEMENT OF YOUR PROPERTY

Cost Share on Forest Management or Tree Planting

Lands enrolled in the MFL program must be maintained at 400 trees per acre for plantations and 800 trees per acre for natural stands.

Programs are available to help share the cost of implementing certain forest management or tree planting projects. You can find more information about [financial help and cost share programs](#); go to <http://dnr.wi.gov> and search 'Forest Landowner'.

You can purchase seedlings through the state nursery program. To learn more about tree availability or to create your own tree planting plan visit: <http://dnr.wi.gov> and search '[Tree planting](#)'.

Timber Harvest Contracts

It is very important that you and your logging contractor have a written and signed contract to guide the harvesting process before starting any harvesting. For more information on [writing contracts](#) for timber sales please visit <http://dnr.wi.gov> and search 'Forest Landowner'.

Non-Timber Forest Products

You may harvest non-timber products, including but not limited to mushrooms, berries, ferns, evergreen boughs, cones, nuts, seeds, maple sap, bark, twigs, moss, and edible and/or medicinal plants. Wisconsin statutes may regulate some of these non-timber products, such as ginseng. Others might be threatened or endangered species, and protected by law. Follow all applicable laws when harvesting non-timber products. You must take care to prevent over-harvesting and reducing biological diversity and ecosystem functions. For additional information on how harvesting of non-timber forest products will affect management of your forestland please contact your local WDNR Forester using the [Forestry Assistance Locator](#); go to <http://dnr.wi.gov> and search 'Forest Landowner'.

Forest Certification

Lands entered into the MFL program are automatically included in the MFL Group Certification unless landowners choose not to be certified. The MFL program is certified under the American Tree Farm System (ATFS) and the Forest Stewardship Council (FSC). As more and more wood-using industries and consumers demand proof they are buying wood from sustainably managed woodlands, MFL landowners benefit from this certification.

Third party certification is beneficial in many ways, some of which are the ability to sell to the certified marketplace; future ability to participate in carbon markets; and an opportunity to educate the public about the importance of well-managed private forests.

Specific group member duties include:

1. Petitioning for MFL designation
2. Agreeing to follow a WDNR-approved forest management plan
3. Conforming to MFL statutes and regulations
4. Conforming to ATFS and FSC certification standards, including any measures that might go beyond those stipulated in MFL statutes or administrative rules or other state, federal or local laws – Some features that are emphasized in the ATFS or FSC standards include:
 - a. Allowing access for MFL Group forest certification field audits
 - b. When needed, using pesticides not prohibited by FSC. You can find a list of FSC prohibited pesticides on the [MFL Certification](#) page; go to <http://dnr.wi.gov> and search 'Forest Certification'. Landowners should self-report pesticide use on their lands using the [online form](#) on the same webpage.
 - c. Not planting Genetically Modified Organisms (GMO) in the forest
 - d. Keeping forest products harvested from MFL Group land separate from products harvested from non-MFL Group land during commercial harvest operations
 - e. Endeavoring to adhere to Wisconsin Forestry Best Management Practices
 - f. Striving to consider appropriate liability insurance and safety requirements in timber sales and other contracts
 - g. Using the ATFS and FSC logos in conformance with their trademark policies
 - h. Resolving disputes with easement holders, lien holders and holders of management rights in an expeditious manner.

This certification is voluntary. You chose to have your land certified under the MFL Certified Group. If you wish to depart from certification, you must file the appropriate departure request form. Departure from the forest certification does not affect your MFL designation. If you depart, you will not be able to market forest products as third party certified under the auspices of the MFL program.

For more information about forest certification, please contact your DNR Forester or visit <http://dnr.wi.gov> and search for '[Forest Certification](#)'

Wildfire Prevention and Planning

Every year in Wisconsin, thousands of wildfires occur, destroying dozens of structures and threatening to burn hundreds more. An increasing number of people living and recreating in Wisconsin's wildland-urban interface is creating a growing need for fire prevention and planning for fires that will inevitably occur.

Because of their proximity to forested lands, there is the potential for homes and property to be at significant risk of damage or destruction in the event of a wildfire. As part of the landscape planning process, it is important to determine the level of danger to properties and learn how to mitigate those dangers.

You can take action to reduce the exposure of your home or property to fire. Use fire resistant building materials, incorporate fuel breaks into the landscape, and know the local burning restrictions.

For more information on [fire danger and burning permit restrictions](#), go to <http://dnr.wi.gov> and search 'Fire'. For more information on [making your home and property more survivable in the event of a wildfire](#), go to <http://dnr.wi.gov> and search 'Firewise'.

Forest Carbon

Forests are a significant piece of the global carbon cycle because of their ability to absorb and sequester carbon dioxide. Learn how your forest adds to the global carbon balance and be aware of the rules affecting your participation in forest carbon markets. For information, visit the US Forest Service website: <http://www.na.fs.fed.us/ecosystemservices/carbon/>.

Lands Enrolled in the MFL Program

In conjunction with your MFL maps and air photos, this land information helps you to identify your lands enrolled in the MFL program.

Town/Range/Section	Legal Description	Tax Parcel ID No.	Certified Survey Map Information	Enrolled Acreage	
				Open to Public Access	Closed to Public Access
County: [redacted]		Municipality: Town of [redacted]			
[redacted]	[redacted]	[redacted]		0.00	40.00
[redacted]	[redacted]	[redacted]		0.00	40.00
[redacted]	[redacted]	[redacted]		0.00	21.00
			Total Acreage:	0.00	101.00

Forester Contact Information

Contact your local DNR Forester for information about:

- Requirements of the Managed Forest Law.
- The sale or transfer of Managed Forest Law lands to other owners.

Certified Plan Writer Contact Information

DAN PUBANZ
 WOLF RIVER FORESTRY, LLC
 PO BOX 6
 SHAWANO, WI 54166
 (715) 526-2375
 PUBANZ@FRONTIERNET.NET

DNR Forester Contact Information

BAUMGART, BENJAMIN
 DEPARTMENT OF NATURAL RESOURCES
 N2480 HARTMAN CREEK ROAD
 WAUPACA, WI 54981
 (715) 258-8432
 BENJAMIN.BAUMGART@WISCONSIN.GOV

MFL PLAN ADDENDUM



Wolf River Forestry, LLC
PO Box 6
Shawano, WI 54166

Key to Cover Type and Forest Stand Density Codes Used by Wisconsin DNR

Key to Forest Cover Type Symbols*

Productive

- A Aspen
- BH Bottomland Hardwoods
- BW White Birch
- C Cedar
- CH Central Hardwoods
- FB Balsam Fir
- H Hemlock
- MC Misc. Conifers
- MR Red Maple
- NH Northern Hardwood
- O Oak**

- OX Scrub Oak
- PJ Jack Pine
- PR Red Pine
- PW White Pine
- SB Black Spruce
- SH Swamp Hardwood
- SW White Spruce
- T Tamarack, European Larch
- W Black Walnut

Non-Productive or Non-Forest

- AX Off-Site Aspen
- F Farmland
- FG Grazed Pasture
- G Grass
- GH Herbaceous Vegetation
- GLS Low Growing Shrubs
- I Residential or Commercial
- IA Parking Area
- ICG Campground
- IP Picnic Area
- ITH Nature/Hiking Trail
- ITM Motorized Vehicle Trail
- ITS Snowmobile/Horse Trail
- K Keg
- KB Muskeg Bog
- KEV Emergent Vegetation
- KG Noncommercial Lowland Grass
- KH Noncommercial Herbaceous Vegetation
- L Lake
- LB Lowland Brush
- LBA Tag Alder
- LBB Bog Birch
- LBD Dogwood
- LBW Shrub Willow
- LM Minor Lake
- LMS Minor Stream
- ROW Right of Way
- SX Noncommercial Swamp
- SXC Noncommercial Cedar
- SXSB Noncommercial Black Spruce
- SXT Noncommercial Tamarack
- UB Upland Brush
- Z Rock Outcrop

Key to Size Classes (DBH: Diameter (inches) 4.5 ft above ground)

0-1	Seedlings
1-5	Saplings
0-5	Seedlings & Saplings
5-9 / 5-11	Pole-Timber (Conifers/Hardwoods)
9-15 / 11-15	Small Sawtimber (Conifers/Hardwoods)
15+	Large Sawtimber

Cover Type
This stand is dominated by red oak, white oak, black oak, or bur oak.

Size Class
The saw timber trees have an average diameter of fifteen inches or larger.

Example

O 15+² / PW 5-9¹

Primary Cover

Secondary Cover

The secondary cover type is white pine consisting of pole timber sized trees with a stocking of 10-40 square feet per acre.

Density
The amount of sawtimber stocking ranges from 41-80 square feet per acre.

Density Key (Seedlings/saplings per acre or basal area per acre)

Code	<u>Seedlings</u>	<u>Saplings</u>	<u>Poletimber & Sawtimber</u>
1	1-600	1-300	10-40 ft ² /acre
<u>2</u>	601-1500	301-900	41-80 ft ² /acre
3	1,501 +	901 +	81-130 ft ² /acre
4	NA	NA	131-180 ft ² /acre
5	NA	NA	180+ ft ² /acre

Property Setting

Based on the *Ecological Landscapes of Wisconsin* (WDNR, 2006), the property is located in eastern edge of the Forest Transition Ecological Landscape (see map). The Forest Transition was entirely glaciated. The central portion was formed by older glaciations, both Illinoian and pre-Illinoian, while the eastern portion was covered by deposits of the Wisconsin glaciation. Glacial till (unsorted mixture of materials deposited by a glacier) is the major type of material deposited throughout, and the prevalent landforms are till plains or moraines (elongated ridge of materials deposited at the edge of glaciers). Throughout the area, post-glacial erosion, stream cutting, and deposition formed floodplains, terraces, and swamps along major rivers. Wind-deposited silt material (loess) formed a layer 6 to 24 inches thick. Most soils are non-calcareous, moderately well-drained sandy loams derived from glacial till.



Once almost completely forested, the Forest Transition's largest blocks of forests are now limited to certain areas. Much of this landscape is now quite open and dominated by intensive agricultural use. A few open areas of surrogate grassland (non-native grasses) and adjacent wetlands embedded within agricultural lands are large enough to support declining grassland birds, including the WI Threatened Greater Prairie Chicken. There are opportunities to maintain, enlarge and connect these habitats to better support area sensitive species. However, other open areas provide re-forestation opportunities to increase the size of forested blocks, provide habitat, improve water quality, reduce hard edge

At finer resolution, the property is in the Stockbridge-Tigerton Plains Landtype Association, where the characteristic landform pattern is undulating outwash (sand and gravel deposited by a stream flowing from a glacier) plain. Soils are predominantly well drained loam over acid sand outwash.

The original upland cover types for this property, based on land survey records from the 1800's (Finley 1976), are hemlock/hardwoods, with sugar maple, yellow birch, and red/white pines. The historical wetland cover type was swamp conifers with white cedar, black spruce, tamarack, and hemlock. The property contains many of the species that existed historically, however, human influences over the past 100 years have modified the historical age classes and forest structure, resulting in a younger forest with less structural diversity than may have been typical of historical conditions.

The property is found on the western edge of an area dominated by agricultural land uses. To the west of the property, forested cover dominates and the property is part of a large (greater than 600 acres) block of forest that extends north and south of the property. An un-named stream flows through the center of the property into Buck Lakes. Another un-named stream flows from west-east along the northwest property boundary.

Several seasonal and permanent residences are located immediately northeast and east of the property. The property is accessed from a private drive off the end of Circle J Road.

Plan Introduction and Property Overview

Data and observations on the condition of the forest were made during site visits on October 3-4, 2012. Nineteen acres containing pasturage, residences, outbuildings, and lake bottom have been excluded from the plan.

Natural Heritage & Cultural Resources: The Natural Heritage Inventory was queried by the DNR. No rare, threatened, or endangered (RTE) species were listed for the habitats on this property. No historic, cultural, or archeological sites were found on the property or in DNR databases. If any RTE species or cultural resources are discovered in the future they should be protected in a suitable manner.

Forest Health Concerns: Over the property, there were no adverse insect or disease issues observed during field work. Deer browsing appears to be heavy and is impeding hardwood tree regeneration, especially in Stands 7, 8, and 10.

Invasive Species: There is a minor population of native, invasive prickly ash in the central and southern parts of the property. This species can come to dominate forest understories and open areas, reducing the diversity of plant species throughout the property. Dense prickly ash can interfere with tree regeneration efforts. While the current population is not having an adverse impact on the forest condition, the spread of prickly ash should be monitored and control should be implemented if the situation becomes worse. See Appendix I for prickly ash control options. Since non-native invasive species are common in the surrounding landscape, it is fortunate that this property does not have populations of these species. Annually monitor the property for invasive plants and, at this early stage, eliminate all occurrences of these plants.

Wildlife Habitat: On the uplands, there is almost no large woody debris on the forest floor, which limits habitat for the species utilizing woody debris (such as salamanders and invertebrates). There are few dead standing snags and weak trees, providing little habitat for the species (such as woodpeckers and other birds) requiring them. One of the management objectives over the entire property is to provide suitable habitat for wildlife. Due to the current deficiencies in the number of standing dead trees, opportunities for developing these features should be pursued. Identify and retain a total of 2-4 live or dead trees per acre that are limby and large diameter, to provide habitat for birds and small mammals. See the General Information and Recommendations section for information on creating standing weak or dead trees. Where safety is not an issue, standing and fallen dead trees should be left as they are to provide more habitat for the species that use them. Due to the currently limited amount of woody debris, retain a variety of woody debris size classes on the forest floor, with a goal of leaving on each acre at least 2-5, 6-foot and longer pieces that are at least 12" in diameter.

Vegetative Habitat Type Classification: Most of the better drained uplands appear to be on a dry-mesic habitat type with medium to rich nutrients. Oaks, sugar maple, and red maple have excellent growth and vigor on this habitat type. Without disturbance, shade tolerant species such as sugar and red maple will replace the oaks over time.

Stand Conditions, Special Features or Characteristics

Stand 1: White cedar poletimber at very good density with white cedar small sawtimber at medium density (C5-9⁴ / C9-15²)

This stand is found in the western forty, and in two small areas in the northeast forty, on level wetlands. The soil type is Seelyeville muck, which is a very poorly drained soil where the water table is at the soil surface throughout the year. This soil can have moderate timber productivity for species adapted to these conditions, such as white cedar. Other than some blowdown salvage near roadways, no management activity has occurred in this stand since its origination.

The stand consists of good quality white cedar poletimber and small sawtimber. The best quality and stocking are in the northern third of the stand. Overstory stocking ranges from 80-250 ft²/acre of basal area and averages 148 ft²/acre. Tree regeneration is sparse, even in blowdown patches, and consists primarily of scattered balsam fir seedlings and saplings. The forest floor in many areas contains sphagnum moss and ferns.

On this site, the stand would be expected to reach a rotation age of at least 150 years, producing sawtimber.

Management Objectives: To maintain the integrity of the wetland system. To produce cedar sawtimber using even-aged management. To regenerate new age classes of cedar using small patch clearcuts to maintain structural diversity. To maintain all white pine trees for diversity and wildlife habitat. To manage the cedar using an extended rotation age and to maintain winter thermal cover for wildlife. To utilize accessible blown down cedar for personal use. To retain live den trees for small mammals, foraging trees for various bird species, and downed woody material for wildlife habitat.

Stand 2: Aspen seedlings at good density (A0-5³)

This stand is found in the northwest part of the property on a small rise above the wetlands. The soil type is Richford loamy sand, which is a somewhat excessively drained soil with low available water capacity. This soil has moderate timber productivity for aspen, red maple, and oak. The stand originated from a clearcut in 2007.

The stand consists of good quality quaking and bigtooth aspen seedlings. Red maple, red oak, and pine sawtimber is scattered through the stand.

On this site, the aspen component would be expected to reach a rotation age of about 55 years, producing small sawtimber.

Management Objectives: To manage for aspen using even-aged management. To maintain pine and oaks for wildlife habitat and diversity. To favor oak regeneration if it should develop.

Stand 3: White pine small sawtimber at medium density with white pine and red oak poletimber at medium density (PW9-15² / O5-11²)

This stand is found in the northeast part of the property on relatively flat topography. The soil type is Richford loamy sand, which has moderate timber productivity for pine and oak. No management activity has occurred in this stand since its origination.

The stand consists of good quality white pine sawtimber and moderate quality red oak sawtimber. Poletimber quality of both species is generally poorer due to suppression. White birch, red maple, and white cedar are also scattered through the stand. Overstory stocking ranges from 80-200 ft²/acre of basal area and averages 140 ft²/acre. Tree regeneration is absent.

On this site, the stand would be expected to reach a rotation age of at least 130 years, producing sawtimber.

Management Objectives: To use even-aged management to produce white pine and red oak sawtimber. To maintain the integrity of aquatic shorelines. To retain live den trees for small mammals, foraging trees for various bird species, and downed woody material for wildlife habitat.

Stand 4: Tag alder wetland (LBA)

This stand is found in the north-central part of the property on level wetlands. The soil type is Seelyeville muck. No forest management activity has occurred in this stand since its origination.

The stand consists of tag alder and willow brush. A small stream flows from southwest to northeast across the stand, emptying into Buck Lakes.

Management Objectives: To maintain the integrity of the wetland system. To maintain drainage patterns so that adjacent stands are not subject to waterlogging.

Stand 5: Quaking aspen seedlings at medium density (A0-5²)

This stand is found in the central part of the property on slightly rolling topography. The soil type is Richford loamy sand, which has moderate timber productivity for aspen. The stand originated from a 2007 clearcut.

The stand consists of good quality aspen seedlings. Seedling stocking is patchy, with very dense areas mixed with sparse areas. Raspberry brush and herbaceous plants are found in less dense areas. Scattered red oak sawtimber, and balsam fir and red maple poletimber, are also present.

The stand contains two inclusions: a 1.1-acre area of balsam fir and white pine poletimber and small sawtimber; a 0.9-acre area of 32-year-old red pine poletimber.

On this site, the aspen component would be expected to reach a rotation age of about 55 years, producing small sawtimber.

Management Objectives: To manage for aspen using even-aged management. To maintain pine and oaks for wildlife habitat and diversity. To favor oak regeneration if it should develop.

Stand 6: Swamp hardwood poletimber at good density (SH 5-11³)

This stand is found in the southern forty on level wetlands. The soil type is Seelyeville muck, which has fair timber productivity for swamp hardwoods. No management activity has occurred in this stand since its origination.

The stand consists of fair quality black ash poletimber. Ash crowns do not show significant dieback. Good quality white cedar poletimber and small sawtimber is found along the southern edge of the stand. Overstory stocking ranges from 90-150 ft²/acre of basal area and averages 98 ft²/acre. Tree regeneration is absent.

On this site, the stand is nearing maturity. Group selection will begin regenerating the stand.

Management Objectives: To manage the stand using group selection to maintain structural diversity and to avoid swamping the site. To maintain the cedar component. To retain live den trees for small mammals, foraging trees for various bird species, and downed woody material for wildlife habitat.

Stand 7: Red maple and red oak large sawtimber at medium stocking over balsam fir seedlings and saplings at medium density ((MR)O15+² / FB0-5¹)

This stand is found on the west side of the southern forty and generally flat topography. The soil type is Oesterle sandy loam, which is a somewhat poorly drained soil with low available water capacity. The soil has moderate timber productivity for species such as red maple, white pine, and red oak. The stand was thinned around 2001 and most of the aspen was harvested at that time.

The stand consists of moderate-good quality red maple and red oak sawtimber. Some of the oak has epicormic branches where a large proportion of the tree stocking was harvested in 2001. Hardwood poletimber quality is generally poor due to suppression. White pine large sawtimber is scattered through the stand, especially in the southern part. Overstory stocking ranges from 30-110 ft²/acre of basal area and averages 69 ft²/acre. Tree regeneration is restricted to balsam fir seedlings (300 stems per acre) and saplings (400 stems per acre). The balsam fir ranges from 4-30 feet tall and is often present in dense patches. More open areas contain raspberry brush. There are scattered small patches of prickly ash. Including the balsam fir, there are three age classes in this stand.

The stand contains a one-acre inclusion of quaking aspen and red maple saplings that originated from the 2001 harvest.

On this site, the oak component would be expected to reach a rotation age of at least 130 years, producing large sawtimber. The red maple component would be expected to reach a rotation age of at least 110 years, producing large sawtimber. The balsam fir and aspen components would be expected to reach a rotation age of about 40 years and 50 years, respectively, each producing cordwood.

Management Objectives: To produce red maple and red oak sawtimber using even-aged management. To retain the aspen, white pine, and hemlock components for species diversity. To control the balsam fir component to allow other species to regenerate. To maintain the integrity of adjacent wetlands. To retain live den trees for small mammals, foraging trees for various bird species, and downed woody material for wildlife habitat.

Stand 8: Red oak and northern hardwood large sawtimber at good density ((O)NH15+²)

This stand is found in the southern forty along a ridge with rolling topography. The soil type is Elderon-Rosholt complex, which is a well-drained soil with low available water capacity. The soil texture ranges from loamy sand to sandy loam, and the soil has moderate-good timber productivity for red oak and northern hardwoods. The southern part of the stand was thinned in 2007, while the rest of the stand was last thinned in 2001.

The stand consists of very good quality red oak and sugar maple sawtimber. White ash, red maple, hickory, and basswood sawtimber is also present. Poletimber stocking is very low and poletimber quality is generally poor due to suppression. Tree diameters are largest in the southern part of the stand. Hemlock poletimber trees are scattered through the stand and sometimes occur in small patches. Overstory stocking ranges from 80-150 ft²/acre of basal area and

averages 96 ft²/acre. Tree regeneration is absent and the forest floor is covered with dense sedge. There are scattered small patches of prickly ash. While the few white ash seedlings are heavily browsed, white pine seedlings are not impacted.

On this site, the oldest age class of trees would be expected to reach a rotation age of at least 130 years, producing large sawtimber.

Management Objectives: To produce red oak and northern hardwood sawtimber using uneven-aged group and patch selection. To develop hardwood regeneration and protect it from deer browsing. To retain the hemlock component for species diversity. To maintain the integrity of adjacent wetlands. To retain live den trees for small mammals, foraging trees for various bird species, and downed woody material for wildlife habitat.

Stand 9: Wetland herbaceous vegetation and lowland brush (KH / LB)

This stand is found in the southeast corner of the property on level wetlands. The soil type is Seelyeville muck. No management activity has occurred in this stand since its origination.

Management Objectives: To maintain the integrity of the wetland system.

Stand 10: Northern hardwood small sawtimber at medium density with northern hardwood poletimber at poor density (NH11-15² / NH5-11¹)

This stand is found in the southeastern corner of the property on gently rolling topography. The soil type is Tilleda loam, which is a well-drained with high available water capacity. This soil has good timber productivity for northern hardwoods and red oak. The southern part of the stand was lightly thinned in 2007.

The stand consists of moderate-good quality white ash, red oak, and basswood sawtimber. Where poletimber is free to grow, it is of good quality. Most of the white birch has died out of the stand. Hemlock poletimber is present along the wetland edges. Overstory stocking ranges from 50-70 ft²/acre of basal area and averages 63 ft²/acre. Tree regeneration is absent, except for ironwood seedlings. Some prickly ash is present.

There is a small seasonal pond in the southeast corner of the stand.

On this site, the oldest age class of trees would be expected to reach a rotation age of about 120 years, producing sawtimber.

Management Objectives: To produce red oak and northern hardwood sawtimber using uneven-aged single-tree selection. To develop hardwood regeneration and protect it from deer browsing. To retain the hemlock component for species diversity. To maintain the integrity of adjacent wetlands. To retain live den trees for small mammals, foraging trees for various bird species, and downed woody material for wildlife habitat.

Additional Stand Management Information

Stands 1, 3, 7: Even-aged thinning

An even-aged thinning reduces the number of trees to concentrate growth on healthy, higher quality trees (the crop trees) that will be retained for longer periods of time. Crop trees will have a well-developed and vigorous crown, a relatively straight bole that is free from wounds or major defects and has no persistent limbs for at least 16 feet. Crop trees will have the best potential to produce a minimum of a 16-foot grade #1 or #2 sawlog. The trees to cut will need to be individually marked. Retain your best quality trees of a variety of species. Avoid or minimize damage to the crop trees. Use the following order of removal but stop marking or removing trees when the target minimum basal area is reached:

1. **High Risk:** Harvest any tree which is likely to be lost before the next harvest.
2. **Release:** Favor crop trees by making room for crown expansion.
3. **Low Vigor:** Harvest trees that are growing poorly.
4. **Stem Form and Quality:** Harvest poorly formed trees with short usable log length or decay.

-
5. **Undesirable Species:** Species that don't meet management objectives.
 6. **Spacing:** Harvest trees to improve spacing between them.

Stand 1: In the parts of the stand with better drainage and stocking, conduct thinnings outside of any patch cuts by reducing the basal area to 140 ft²/acre to promote the development of cedar sawtimber and to reduce the risk of increasing the period of saturated soils. Harvest up to 33% of the basal area. Wetland access and markets must be evaluated before implementing the thinning.

Extreme care should be taken during each management entry into wetland sites **to ensure that wetland sites and associated streams are not degraded through soil compaction, raised water table, or an increase in the presence of invasive species. Equipment use will be limited to frozen conditions only.** Rutting is highly detrimental to wetland systems such as these. No rutting will be allowed. **Wisconsin BMPs for Water Quality must be followed when harvesting near streams and wetlands.**

Stand 3: Conduct thinnings by reducing the basal area to 100 ft²/acre to promote the development of sawtimber and to ensure that pine and oak crop tree crowns have room to expand.

Stand 7: Conduct thinnings by reducing the basal area to 90 ft²/acre to promote the development of sawtimber and to ensure that maple and oak crop tree crowns have room to expand.

Stand 3: Pruning white pine (non-mandatory) *(excerpts from WDNR Silviculture Handbook)*

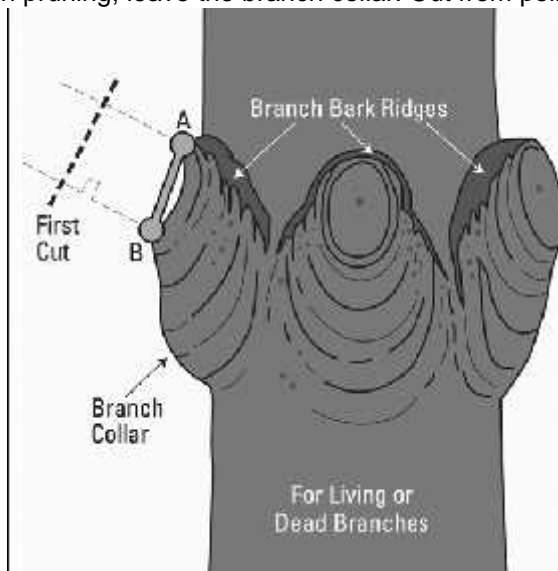
Pruning as a silvicultural technique, is the removal, close to the branch collar, of side branches and multiple leaders from a standing tree. Lateral pruning removes branches because branches result in knots as trees increase in diameter. Knots are a common defect in lumber and reduce timber value. Pruning is also applied to control disease, which can enter tree stems from dead or live branches.

Only the best quality crop trees on good sites (those that support acceptable tree growth rates) are selected for pruning. It is most commonly applied to conifer species that are poor natural pruners (e.g., white and red pines), but can also be applied to hardwood species such as red oak. Pruning is an investment and should be implemented carefully; careless, poorly implemented pruning can cause tree injury and damage quality.

Operational Considerations:

- Prune only on sites that support acceptable tree growth rates.
- Prune the most vigorous, healthy, dominant (tallest), and largest diameter crop trees.
- Prune 100-150 crop trees per acre. They should be spaced at 15-20 foot intervals.
- Corrective pruning (to favor a main leader) should be done in seedling/saplings. Side branch pruning should occur in young pole timber stands before lower branches become relatively large. This pruning should follow the first thinning in commercial stands.
- The final objective is a clear trunk to 17 feet, which may be reached in stages. Each time, prune to the topmost whorl of dead branches or into the lower portion of live crown.
- Maintain live crown:tree height ratio greater than 50%, where possible.
- Prune during the dormant season – fall to late winter.
- Prune before branches are 1½ - 2 inches diameter. Removing large, live branches can damage quality.
- Pruning cuts should be made close to the branch collar (see Figure A). For species lacking a distinct branch collar or callus ridge, cuts should be made flush with the stem but without damaging any bark. Don't tear or loosen bark around branch stub.

Figure A: When pruning, leave the branch collar. Cut from point "A" to point "B".



Stands 6, 8: Group selection

The goal in these stands is to develop multiple age classes over time and to use uneven-aged management in the stand.

During each management entry, remove the overstory and understory trees on areas no larger than 0.1-acre to provide increased sunlight to the forest floor. These patches should be implemented in areas where overstory tree quality is poorest. Groups should first be located in areas of established regeneration.

Stand 6: In the areas outside of the harvested patches, thin the remaining stand using the uneven-aged thinning criteria, maintaining a residual basal area of 100 ft²/acre.

Extreme care should be taken during each management entry into wetland sites **to ensure that these wetland sites and associated streams are not degraded through soil compaction, raised water table, or an increase in the presence of invasive species. Equipment use will be limited to frozen conditions only.** Rutting is highly detrimental to wetland systems such as these. No rutting will be allowed. **Wisconsin BMPs for Water Quality must be followed when harvesting near streams and wetlands.**

Stand 8: In the areas outside of the harvested patches, thin the remaining stand using the uneven-aged thinning criteria, maintaining a residual basal area of 80 ft²/acre.

Stands 8, 10: Preventing deer browsing on desirable regeneration (non-mandatory) **To ensure success, it will be necessary to protect natural and planted seedlings from deer browsing.**

Metal mesh can be used to protect individual trees or small areas, while plastic mesh can be used around larger areas to allow regeneration to get above deer browse height (usually six feet). As protected seedlings reach this height, the fencing can be moved to regenerate other parts of the stand. Consider using 7.5-foot-tall polypropylene fencing attached to trees as a barrier (see gemplers.com, for example). Alternatively, repellants, such as Plantskydd, can be applied to seedlings in spring and fall to deter browsing.

Stand 8: Seedbed preparation (non-mandatory)

Oak and other hardwood seedlings may have difficulty establishing through dense sedge or leaf litter layers on the forest floor. In late summer and early fall prior to a harvest entry, where sedge is dense, utilize herbicide to reduce the sedge. Later that fall, utilize mechanical means to expose mineral soil in patch cuts. Dragging a weighted harrow or rake behind an ATV or tractor would benefit the establishment of hardwood seedlings. It is only necessary to mix the upper few inches of soil and leaf litter; there is no need to dig deeply into the soil. Stay at least 10 feet away from crop trees to avoid harming roots near the tree.

Stand 8: Patch Selection Harvest (non-mandatory)

The oak in this stand is currently 98 years old and should live to at least 130 years of age. As an option in addition to thinning, regenerate patches of the stand, over time, to maintain some oak and provide diverse stand structure. Regeneration efforts should first be focused in the areas with poorer stocking. Deer browsing impacts should be evaluated prior to each management entry.

During each management entry, remove the overstory and understory trees on 0.5-1-acre areas to provide increased sunlight to the forest floor. Trees 1" in diameter and larger within the patch should be cut. These patches should first be implemented in areas where the overstory tree quality is poorest or vigor is lowest.

During each entry, in the areas outside of the harvested patches, evaluate the need for thinning the remaining stand using the uneven-aged thinning criteria (see above).

Stand 10: Uneven-aged single-tree selection

These harvests will favor the best trees by giving them room to grow, create gaps or small openings for new seedlings to start and will remove defective, poor quality, and surplus trees. The harvest shall follow uneven-aged management guidelines. **A residual basal area of 90 sq.ft./acre must be left with a goal of maintaining 70 sq.ft./acre of sawtimber. Retain all hemlock for species diversity.** Use the following order of removal, but stop marking or removing trees when the minimum basal area is reached:

1. **High Risk:** Harvest any tree which is likely to be lost before the next harvest.
2. **Release:** Favor crop trees by making room for crown expansion.
3. **Low Vigor:** Harvest trees that are growing poorly.
4. **Stem Form and Quality:** Harvest poorly formed trees with short usable log length or decay.
5. **Undesirable Species:** Species that don't meet management objectives.
6. **Spacing:** Harvest trees to improve spacing between them.

Clear canopy gaps to ensure the development of quality replacement seedlings. Where a 16 inch tree or larger is cut (following the order of removal), all stems greater than 1 inch must be marked and cut within the drip line of the canopy tree. Canopy gaps must also be cleared when several smaller trees are cut making a canopy opening 30-60 feet in diameter. New canopy gaps should cover approximately 10% of stand area in each entry.

ALL STANDS – GENERAL INFORMATION & RECOMMENDATIONS

Forest monitoring: It is important to monitor your forest annually for changes in the presence of invasive species or in sensitive plant and animal species, as well as for changes to the forest structure. Because there are long periods between harvests it is important for the landowner to watch for damage from weather, insects, or disease. Should conditions change contact the DNR forester to address potential amendments of the treatments in this plan or to plan alternative harvest operations. Monitoring forest conditions and adjusting management strategies are critical to meeting your stewardship goals for the property.

Deer management: The high numbers of deer are browsing the tree seedlings that you will need to sustain your forest. You can help reduce the damage to your forest by harvesting as many antlerless deer as you are allowed. Even a moderate number of deer will damage the young tree seedlings you need and will be working to grow.

Riparian Areas and Wetlands: Extreme care should be taken during each management entry to ensure that wetland sites are not degraded through soil compaction, raised water table, or an increase in the presence of invasive species. **Equipment use is limited to frozen conditions only.** Rutting is highly detrimental to wetland systems. **No rutting will be allowed. Wisconsin BMPs for Water Quality must be followed when harvesting near streams and wetlands.**

Leave den trees and create wildlife snags: Leaving live den trees and dead trees or “snags” for wildlife is one way to provide habitat. Nesting cavities in live trees help maintain wildlife populations. Standing dead trees provide a place for cavity-nesting birds such as woodpeckers, screech owls, and chickadees to nest and a place for bark-foragers such as nuthatches and brown creepers to feed. There are a few den or hollow trees present, but there are many situations in this forest where you could make additional dead trees. Low quality trees can be killed by “girdling” or cutting through the bark 2-3 inches deep around the tree with a chain saw. The tree will die standing and will provide habitat for a variety of birds. Unless dead trees present a hazard, consider leaving them in the woods. Downed trees are valuable for a variety of wildlife species and for the health of the woods. Trees on the ground provide feeding and hiding places for small mammals, amphibians, and invertebrates and return nutrients to the soil as they rot. They provide a place for some trees to regenerate. Existing log sized woody debris on the ground and new, low-value material could be retained for wildlife to use as nesting, shelter, and feeding sites.

Firewood - Dead, down and obviously defective trees may be used for firewood. Two to four snag (dead) and live den (hollow) type trees per acre should be left throughout the stand for use by wildlife.

Information: Consider becoming a member of a woodland owner group, such as Wisconsin Woodland Owners Association (WWOA). WWOA has an informative magazine for woodland owners and provides opportunities for educational field days.

Contact a professional forester for assistance in establishing the above required timber harvests and TSI projects. This plan is meant to provide general guidance. It does not address every detail of forest management or every aspect of your forest. Each management activities should be carefully reviewed and planned prior to implementation to ensure the highest potential for success.

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FOREST MANAGEMENT PLAN ADDENDUM
ORDER #

Page 12 of 13

GLOSSARY

Acceptable Growing Stock (AGS): Any potential crop tree to be retained and managed to meet the landowner's objectives (i.e., crop tree).

Acre: A standard unit of area measure. One acre equals: 43,560 square feet; 4840 square yards; 10 square chains.

Advanced regeneration: Natural regeneration that is established prior to a timber harvest.

Age Class: One of the intervals, commonly 10-20 years, into which the age range of trees are divided for classification.

Available water capacity: the amount of water that a soil can store that is available for use by plants.

Basal Area: The cross sectional area of the stem of a tree at 4.5 feet above the ground (dbh). The basal area of a stand is the summation of all the trees or classes of trees per unit area of land. Basal area is expressed in square feet per acre. Basal area is directly related to stand volume and density.

Board Foot: The volume of solid wood equivalent to a piece 12 inches long, 12 inches wide and 1 inch thick. A measure of standing or felled timber usually related to sawlogs.

Bole: That part of a tree trunk beneath the point where branching commences.

Canopy: The combined cover of individual tree crowns.

Chain: A measurement of horizontal distance, 66 feet. Areas expressed in square chains can immediately be converted to acres by dividing by 10.

Co-Dominant: Trees with crowns forming the general level of the forest canopy and receiving full sunlight from above but comparatively little from the sides.

Crop Trees: Trees to be grown to the end of the rotation.

Crown: The branches and twigs of the upper part of a tree.

Cull: Trees that have no current or potential commercial value.

Diameter at Breast Height (DBH): The diameter of a standing tree measured at 4.5 feet above the ground and expressed in inches.

Dominant: Trees with well developed crowns which are above the canopy and receive direct sunlight from above and partially from the side.

Even-aged: An age class description of a stand in which the age of the trees is relatively close, usually within 20 years. Stands with two distinct age classes can also be referred to as even-aged.

Even-aged Management: Timber management that produces a stand of trees with relatively little difference in age usually 10-20 years. Even-age silvicultural systems include clearcut, seed-tree and shelterwood.

Girdle: To destroy the conductive tissue of a tree in a ring around the bole.

High-grading: A liquidation cut in which only the best quality, highest value trees are removed. Cuts of this nature are short sighted and exploitative and result in the degradation of the forest ecosystem.

Improvement cutting: A silvicultural treatment in which poor quality and low value trees are removed to give the best trees more room to grow.

Intermediate: Trees whose crowns reach the canopy level but receive little or no direct light from above and none from the sides.

Intermediate Treatments: Harvesting methods employed during even-aged management. The removal of trees from a stand between the time of establishment and the final harvest with the purpose of improving stand growth and/or species composition and/or health.

Intolerant Species: Trees unable to grow and develop in the shade of other species. Intolerant commercial species in Wisconsin include aspen, paper birch, and oak.

Landing: Any place where logs are assembled for further transport.

MBF: The abbreviation for one thousand board feet.

Overstory: Those trees making up the main canopy. Usually the primary cover type.

Pole or poletimber: A tree or trees greater than 5.0 inches DBH and less than 10.0 inches DBH.

Pre-Commercial Thinning: An intermediate harvesting operation in a young stand that does not generate income.

Prescription: A course of action to effect change in a forest stand (harvest, planting, TSI).

Regeneration: Renewal of a tree crop by natural or artificial means.

Release: The freeing of well-established seedlings or saplings from surrounding growth.

Residual: Trees that are left to grow in a stand after a silvicultural treatment.

Rotation: The length of time required to grow an even aged crop of trees to a desired age.

Rotation Age: The age at which an even aged stand is considered ready for harvest.

Sapling: Trees larger than 1.0 but less than 5.0 inches DBH.

Sawtimber: Trees that have obtained a minimum diameter at breast height that can be felled and processed into sawlogs. Typical minimum size limits for commercial species in Wisconsin are 9 inches dbh for softwoods and 11 inches dbh for hardwoods. Small sawtimber trees are 11-15 inches dbh and large sawtimber trees are 15 inches dbh or greater.

Seedlings: Trees that are less than 1.0 inches DBH.

Site Index: A measure of the relative productive capacity of an area. Site index is species specific and is based on a comparison of tree age and height.

Skid Trail: Any path in the woods over which multiple loads of logs are hauled, usually by a skidder or tractor. Primary skid trails are the main pathways that enter the landing.

Snag: A standing, dead tree.

Stand (Treatment Unit): A community of trees possessing sufficient uniformity in regards to composition, constitution, age, spatial arrangement or condition to be distinguishable from adjacent communities.

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FOREST MANAGEMENT PLAN ADDENDUM
ORDER #

Page 13 of 13

Stocking Level: Stocking levels are calculated by comparing either the basal area or the number of trees the site could support, if the growth potential of the land was fully utilized, to the basal area or number of trees actually on the site. Stocking categories include: understocked, adequately stocked, or overstocked

Stumpage: The value of timber as it stands in the woods just before harvest ("on the stump"). Loggers are usually bid on timber based on its stumpage value. Stumpage can also be used to refer to standing timber.

Succession: The orderly and predictable replacement of one plant community by another over time in the absence of disturbance.

Suppressed: Trees with crowns entirely below the general level of the forest canopy that receive no direct sunlight from above or the sides.

Timber Stand Improvement (TSI): A non-commercial timber harvest conducted in stands of timber to improve the health, growth rate, and form of the remaining trees.

Tolerant Species: Trees that can grow satisfactorily in the shade of other trees. Tolerant species of commercial importance in Vermont include sugar maple, beech, red spruce, and hemlock.

Understory: Those plants growing under the main canopy.

Uneven-aged: An age class description of a stand of trees that contains more than two distinct age classes and a variety of size classes.

Uneven-aged (All-aged) Management: Timber management that produces a stand composed of a variety of age classes. Harvesting methods used in uneven-aged management include individual tree and group selection.

Vigor: The health and vitality of a tree. Vigor can most accurately be assessed by observations of foliage (density, width and color) and percent live crown.

Windthrow: A tree or trees that have been toppled by high winds. A common phenomenon along the edge of forests.



Property
Town of, Co.,
Sec
101 acres total

See MFL plan for stand descriptions.
Map Scale: 1" = 400 feet (1:4800)
The MFL map is the official management plan map.
Dashed lines are truck roads.