MARSHFIELD SCHOOL FOREST
AMERICAN TREE FARM SYSTEM STEWARDSHIP FORESTRY PLAN

Name(s) and Address of Landowner(s):

MARSHFIELD PUBLIC SCHOOL DISTRICT
1010 EAST FOURTH STREET
MARSHFIELD, WI 54449

SCHOOL FOREST DIRECTOR: MARK ZEE
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Plan Timeframe: 25 years Starting January 1, 2012 and ending December 31, 2036

County: **Wood** Municipality Name: **TOWN OF ROCK**

Town: 24 N; Range 2E Section(s) 16 (SWNW, SENW, NWSW, NESW)

Town: 24 N; Range 2E Section(s) 17 (SENE, NESE, NWSE, SWSE)

Total Plan Acreage: **320**

Attached maps show the location of Managed Forest Lands and the areas open or closed to public access.

Purpose and Expectations of the American Tree Farm System (ATFS) Plan:

The purpose of the American Tree Farm System is to encourage the management of private forest lands 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. Under this plan, *"sound forestry practices"* means timber cutting, transporting and forest cultural methods recommended or approved by the Wisconsin Department of Natural Resources for the effective propagation and improvement of the various timber types common to Wisconsin along with the management of forest resources other than trees including wildlife habitat, watersheds, aesthetics and endangered and threatened plant and animal species. The ATFS certification prohibits the use of these lands for industry, grazing of domestic livestock or other uses deemed incompatible with the practice of forestry under the Sustainable Forest Initiative.

This plan is just one component of Wisconsin's strategy to promote, support and monitor sustainable forestry practices. Management plans under the MFL program are adaptive and will need amendments over time. Changing stand conditions and current science will dictate the forestry practices needed at the time a scheduled management practice becomes due. Management plans can also be changed due to changing land management goals. All changes in management must be consistent with generally accepted silvicultural practices and site capabilities.

Monitoring of management plan will be done throughout the length of the plan timeframe. Foresters from the forest products industry (NewPage Corporation) and DNR Foresters will work with you to implement management practices and to insure that your lands continue to qualify for certification under the American Tree Farm System. Please work diligently to implement the practices that are prescribed for your property. Also, please inform your local Forester of changes in address, land sales and other information regarding your ATFS lands.

Landowner Goals or Objectives:

- Manage the forestlands to provide outdoor environmental education opportunities for the students of the Marshfield Public School District.
- Practice sound forestry for the promotion of healthy vigorous forests and growth of high value forest products.
- Create and maintain diverse wildlife habitats through sustainable forestry practices on the property for the benefit of resident wildlife populations.
- Provide diverse outdoor recreation opportunities in conjunction with the ongoing forest management of the school forest: cross country skiing, hiking, bird watching, berry picking, hunting, etc.

Property History

The Marshfield School Forest property was purchased in 1956 as a school forest for the Marshfield Public School District. The first forest management plan was prepared in 1956 with the assistance of forester Robert J. Engelhard from Trees for Tomorrow. A lodge and indoor classroom were built on the site by the High School students in 1958. Forest management work began with tree planting in the late 1950's and early 1960's. Harvesting projects started in 1979 and the main access road was developed with revenues from the timber sales. Eleven separate timber sales have been conducted from 1979 through 2009 with assistance of foresters from Consolidated Papers, Stora Enso, and NewPage Corporation. Further consultation and assistance has been provided by forestry staff from the Wisconsin Dept. of Natural Resources.

In 1992 a system of cross country ski trails was developed on the school forest using woods roads and logging trails on the property. The trail is open to the public and is maintained by the local Marshfield Area Ski Touring Foundation (MASTF).

The property is used regularly during the school year as an outdoor education classroom for students from the Marshfield School District. Summer school programs use the property in June and July. In the fall of the year the property is available for recreational use by hunters under a permit system. The school forest is open year round for recreational visitors for hiking, berry picking, bird watching, etc.

General Property Overview:

The Wisconsin Department of Natural Resources (DNR) divides and classifies lands into 22 different Geographical Management Units (GMUs). This classification system identifies the watershed (river, steam, lake) in which surface water will drain. The classification system also identifies the general property characteristics of that watershed, including the amount of agricultural, forest, wetland, urban and other land uses. Information on the GMU also breaks down the amount of forest land into the common timber and habitat types. This information was used to develop management practices for your property.

Your land lies in the Central Wisconsin GMU. For more information on GMUs and their characteristics, please visit http://dnr.wi.gov/forestry/gmu/index.htm.

The Marshfield School Forest drains into two watersheds: The Upper Yellow River Watershed and the East Fork Black River watershed. The watersheds are divided by the east-west ridge that bisects the property. Water draining off the north slope of the ridge is in the Upper Yellow River watershed while the south slopes drain into the East Fork Black River watershed.

Concurrence with Statewide Management Objectives:

Wisconsin forests are quite diverse; they encompass and influence many issues and concerns. The Department of Natural Resources has set statewide objectives to maximize the environmental, social and economic benefits of sustainable forest management. These objectives are found at this website http://dnr.wi.gov/forestry/assessment/.

When you follow your stewardship forestry plan, you make significant contributions to the sustainability and health of Wisconsin forests in the following ways:

- Manage for healthy, vigorous forests that are more tolerant of insect outbreaks and disease and of human-related impacts.
- Encourage the maintenance of oak within forests, and the oak forest type.
- Provide the landscape a mix of forests that represent a full array of forest types, age classes and stages of succession.

Resource Protection:

Wisconsin Foresters consult special reports, records and inventories to make sure your forest management prescriptions benefit important natural, historical or archeological resources. Prior to starting management practices, these reports, records, and inventories will again be consulted. If new records are found, management prescriptions will be evaluated and, if necessary, modified to protect the resource from disturbance. Land management decisions balance the needs of the resource with landowner goals, MFL program requirements and legal status. Resources used to evaluate stand conditions and determine management practices can be found at these websites:

http://dnr.wi.gov/org/land/er/WWAP/ (Wildlife Action Plan)
http://dnr.wi.gov/org/land/er/wwap/explore/profiles.asp (Species Profiles)
http://dnr.wi.gov/org/land/er/communities/ (Natural Communities - Habitats)
http://dnr.wi.gov/landscapes/ (Ecological Landscapes)
http://dnr.wi.gov/org/land/er/wwap/explore/tool.asp (Ecological Priorities Tool, which links the preceding items)
http://dnr.wi.gov/org/land/wildlife/ (Wildlife Management)

Your lands lie within a landscape known as Forest Transition Landscape. An overview of the landscape, species of greatest conservation need, management opportunities and much more can be found at this website:
http://dnr.wi.gov/landscapes/

Natural Heritage Inventory searches are made to determine if endangered, threatened, or special concern animals, plants or plant communities exist.

The Natural Resources Heritage Inventory (NHI) lists no Endangered, Threatened or Special Concern Species or Natural Communities within your property.

This same NHI review showed that that there are no known Endangered, Threatened or Special Concerns Species or Natural Communities present within the surrounding area.

For additional information on rare plants, animals and natural plant communities, visit http://dnr.wi.gov/org/land/er.
The Archaeological Resources Inventory lists no archaeological resources within this MFL property

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

Contact your local DNR Forester for additional information on archaeological and historical sites.

Your plan defines similar vegetative groupings or areas of land that can be combined for management purposes. Foresters call such areas "stands." Prescriptions (also called "practices") are scheduled for each stand according to its age, condition and characteristic plant species.

Recommended Forest Practices Summary				
YEAR	STAND(S)	ACRES	TIMBER TYPE	PRACTICE
2015 – 2036	1,3,5,7,10, 12,16,18,22	N/A	N/A	BUCKTHORN CONTROL
2015	4	4	RED PINE PLANTATION	THINNING
2015	13	62	OAK & MIXED HWD SAWTIMBER	GROUP SELECTION HARVEST
2015	17	7	RED MAPLE POLETIMBER	SINGLE TREE SELECTION
2020	7	20	OAK & MIXED HWD SAWTIMBER	CONVERSION, EVEN AGED TO UNEVEN AGED
2020	10	38	OAK & MIXED HWD SMALLSAWTIMBER	GROUP SELECTION HARVEST
2020	12	30	MIXED HWD, ASPEN, & WHITE PINE	SINGLE TREE SELECTION HARVEST
2020	16	8	WHITE PINE SAWTIMBER	THINNING
2020	22	7	RED MAPLE & RED OAK SAWTIMBER	SINGLE TREE SELECTION HARVEST
2024	9	50	OAK & ASPEN SAWTIMBER	GROUP SELECTION HARVEST
2030	8	3	BIGTOOTH ASPEN	COPPICE REGENERATION HARVEST
2030	4	4	RED PINE PLANTATION	THINNING
2031	11	6	ASPEN POLETIMBER	COPPICE REGENERATION HARVEST
2032	1	22	MIXED PINE & RED MAPLE	SINGLE TREE SELECTION HARVEST
2032	3	3	OAK & MIXED HARDWOODS	SINGLE TREE SELECTION HARVEST
2033	20	3	ASPEN POLETIMBER	COPPICE REGENERATION HARVEST
2035	18	5	RED MAPLE & OAK POLETIMBER	THINNING
2035	17	7	RED MAPLE POLETIMBER	SINGLE TREE SELECTION HARVEST
2035	7	20	OAK & MIXED HWD SAWTIMBER	CONVERSION, EVEN AGED TO UNEVEN AGED
2035	10	38	OAK & MIXED HWD SAWTIMBER	GROUP SELECTION HARVEST
2035	13	62	OAK & MIXED HWD SAWTIMBER	GROUP SELECTION HARVEST
2035	16	8	WHITE PINE SAWTIMBER	THINNING
2035	22	7	RED MAPLE & RED OAK SAWTIMBER	SINGLE TREE SELECTION HARVEST

STAND DESCRIPTIONS AND MANAGEMENT RECOMMENDATIONS.

STAND NUMBER 1	
MIXED PINE & RED MAPLE (MR)PW 5-11 ^{2} / UB	**Acreage: 22**

This area of land is a Red Maple Forest. Red Maple Forests are composed of over 50% red maple. Trees commonly growing with red maple can be ash, elm, aspen, white birch, white pine, balsam fir, white cedar, and oak as well as other native trees.

Over the last century red maple has increased dramatically in abundance throughout the state. Red maple can produce abundant seed and readily stump sprouts. It tolerates shade, and occurs on a wide range of soils from sands to loams, and dry to wet. It grows best on well-drained loamy soils.

These trees make up an uneven-aged stand with a variety of tree ages, ranging from young trees (seedlings) through trees that are older (pulpwood and sawlogs).

The most abundant tree species in this stand include Red Maple, White Pine, and Aspen. White Spruce and Red Pine were planted in this stand area in the early 1960's and some of those trees are still present. Also represented are Red Oak and White Birch as minor components of the stand.

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 that can be sustained over time. It also affects other forest attributes, such as wildlife habitat and biodiversity. This stand has a silt loam soil. Loam soils are made up of 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. Care must be taken to prevent compaction and rutting when using equipment on these soils.

Invasive Plants

During the forest inventory process invasive plants were discovered in this stand. The most abundant invasive plant species found in the stand was European Buckthorn].

Stand Conditions, Special Features or Characteristics

This is a moderately stocked stand of mixed white pine, red maple, and aspen. Associated plantings of red pine and spruce were established in this stand in the early 1960's. Current stocking levels are at 80 square feet per acre of basal area with 15 cords per acre of pulpwood and 0.8 Mbf per acre of sawtimber. A dense understory of European Buckthorn has developed in this stand and has hindered the establishment of native tree seedlings in the understory. Timber harvesting in this stand should be delayed until a long term plan for the control of buckthorn can be implemented on the property. Any harvesting or stand disturbance at this time will only stimulate growth and spread of the buckthorn.

Silvicultural System

This stand will be managed and regenerated within generally accepted silvicultural guidelines for the timber type according to the following management system:

NATURAL UNEVEN-AGED REGENERATION OF TIMBER TYPE – UNEVEN-AGED. The tree species present in your forest will be managed and regenerated following generally accepted silvicultural guidelines for the timber type. The stand will be managed 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	Stand 1 Recommended Forestry Practice
2032	SINGLE TREE SELECTION HARVEST. Naturally regenerate this stand using the single tree selection regeneration method. This involves harvesting individual trees of various size and age classes to provide space for regeneration and promote the growth of 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 Implement a long term program of buckthorn control prior to any tree harvesting in this stand.

STAND NUMBER 2	
LOWLAND BRUSH – TAG ALDER WETLAND LBA	**Acreage: 25**

This area of lowland brush (alder) land is wet and is more than 50% alder.

Alder swamps usually grow in peat and muck soils

The most abundant tree species in this stand include scattered red maple and aspen.

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 that can be sustained over time. It also affects other forest attributes, such as wildlife habitat and biodiversity. This area of land has a poorly drained mineral soil – Veedum Silt Loam. The soil has impermeable layers of clay or rock that cause water to pond and stand at or near the soil surface. The high water table limits the rate of tree growth, and some sites may not support trees. 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.

Invasive Plants

During the forest inventory process invasive plants were discovered in this stand. The most abundant invasive plant species found stand were European Buckthorn.

Stand Conditions, Special Features or Characteristics

This stand consists of non productive lowland areas stocked with tag alder and scattered red maple or aspen.

Silvicultural System

Not Applicable

Year Scheduled	Recommended Forestry Practice
N/A	NONE.

STAND NUMBER 3	
OAK AND MIXED HARDWOODS CH 11 - 15 ^{2} / UB	Acreage: 3

This area of land is a Central Hardwood Forest. Central Hardwood Forests consist of mixtures of upland hardwood species, predominantly oaks, hickory, elms, black cherry, red maple, ash, basswood, hackberry, or sugar maple. Depending upon site conditions and history, the relative abundance of these tree species can vary greatly, but these stands are not dominated by oak or maple. Many central hardwood forests are in the process of succession from oak forests.

Central hardwoods grow best on well drained loamy soils.

These trees make up an even age stand that originated about 1960. Tree ages in even-aged stands may vary slightly, but the trees began growing in relatively the same period of time.

The most abundant tree species in this stand include White Oak, Red Maple, and White Pine.

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 that can be sustained over time. It also affects other forest attributes, such as wildlife habitat and biodiversity. This stand has a silt loam soil. Loam soils are made up of 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. Care must be taken to prevent compaction and rutting when using equipment on these soils.

Invasive Plants

During the forest inventory process invasive plants were discovered in this stand. The most abundant invasive plant species found stand were European Buckthorn.

Stand Conditions, Special Features or Characteristics

This is a moderately stocked stand of mixed oak, maple, and white pine poletimber and small sawtimber of fair to good quality. Growing stock volumes currently are at 12 cords per acre of pulpwood and 1.7 Mbf per acre of sawtimber. Basal area stocking levels are moderate at 80 square feet per acre. As in Stand 1, a dense understory of European Buckthorn has developed in this stand and has hindered the establishment of native tree seedlings in the understory. Timber harvesting in this stand should be delayed until a long term plan for the control of buckthorn can be implemented on the property. Any harvesting or stand disturbance at this time will only stimulate growth and spread of the buckthorn. Manage this stand in conjunction with stand 1.

Silvicultural System

This stand will be managed and regenerated within generally accepted silvicultural guidelines for the timber type according to the following management system:

NATURAL UNEVEN-AGED REGENERATION OF TIMBER TYPE – UNEVEN-AGED. The tree species present in your forest will be managed and regenerated following generally accepted silvicultural guidelines for the timber type. The stand will be managed 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	Stand 3 Recommended Forestry Practices
2032	SINGLE TREE SELECTION HARVEST. Naturally regenerate this stand using the single tree selection regeneration method. This involves harvesting individual trees of various size and age classes to provide space for regeneration and promote the growth of 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. Implement a long term program of buckthorn control prior to any tree harvesting in this stand.
2015 – 2032	Implement a long term program of buckthorn control prior to any tree harvesting in this stand.

STAND NUMBER 4	
RED PINE PLANTATION **PR 9 - 15** [4]	**Acreage: 4**

This area of land is a Red Pine Forest. Red Pine Forests are composed of more than 50% red pine. Trees commonly growing with red pine can be white and jack pine, aspen, or oak as well as other native trees. Red pine is a common tree in plantations.

Red pine grows best in well drained loamy sands and sandy loams within its range in northern and central Wisconsin. It can grow well on a wide range of other soil conditions if introduced by planting.

These trees make up an even age stand that originated about 1960. The red pines on the west side of the access road were planted in the early 1970's. Tree ages in even-aged stands may vary slightly, but the trees began growing in relatively the same period of time.

The most abundant tree species in this stand include Red Pine (80%) and associated Red Maple, Cherry, and Oak.

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 that can be sustained 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 made up of 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.

Invasive Plants

During the forest inventory process invasive plants were discovered in this stand. The most abundant invasive plant species found in the stand was European Buckthorn.

Stand Conditions, Special Features or Characteristics

This stand of Red Pine is approaching the upper limits of full stocking. It has been previously thinned twice in the past, with the most recent thinning in 1997. Current stocking levels are very good at 150 square feet of basal area per acre. Growing stock volumes are currently at 23 cords of pulpwood and 10 Mbf of small sawtimber per acre. A small area of what appears to be Red Pine Pocket Decline disease is located in the northern edge of the stand next to the parking lot by the lodge. Future management should address both the buckthorn issue as well as treatment of the diseased red pine area.

Silvicultural System

This stand will be managed and regenerated within generally accepted silvicultural guidelines for the timber type according to the following management system:

NATURAL CONVERSION This stand will naturally convert to red maple after harvesting or completing your prescribed management treatments. Natural conversion is expected because these tree species are already present as younger trees or will be able to seed in and become established once the proper seedbed, light and crown canopy conditions exist. Periodic thinning will be applied 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 naturally convert your stand.

OR ……
FORCED REGENERATION OF TIMBER TYPE. The tree species present in your forest will be managed and regenerated after harvesting or completing your prescribed management treatments through a combination of seeding, planting, site preparation, prescribed burning, etc. Natural conversion is not expected because desired tree seedlings are not present or will not become established without developing the proper seedbed, light and crown canopy conditions, or by planting trees.

The best method to regenerate new trees is prescribed in your management plan. Forced maintenance of your timber type may take time or extra expenses. The success of your practice will take diligence and monitoring on your part.

Year Scheduled	Recommended Forestry Practices
2015 **2030**	THINNING. Remove trees to reduce stand density to improve tree growth, enhance forest health or utilize trees that are at risk of mortality. Thinning is done to reduce stocking and concentrate growth on more desirable trees by following the order of removal and tree retention guidelines.

STAND NUMBER 5	
SPECIAL USE AREA – LODGE & POND SU	**Acreage: 8**

This Special Use Area consists of the Lodge, the Pond, and the wooded areas immediately around them. The management objective for this area is to maintain it in its natural condition for school groups and other users to enjoy. Important values to address in this area are aesthetics, accessibility for woodland walks with children, and protection of the pond shoreline from disturbance.

No forest management activities are scheduled for this area.

Invasive Plants

During the forest inventory process invasive plants were discovered in this stand. The most abundant invasive plant species found stand were European Buckthorn, especially in the area south of the Pond and Lodge.

Stand Conditions, Special Features or Characteristics - N/A

STAND NUMBER 6	
BIGTOOTH ASPEN SPROUTS A 0 – 5 [3]	**Acreage: 6**

This area of land is an Aspen Forest. Aspen Forests are dominated by trembling aspen (also known as quaking aspen and white popple) and bigtooth aspen (also known as yellow popple). Balsam poplar can be found in Aspen Forests in the northern parts of the state. Trees commonly growing with aspen can be red maple, paper birch, balsam fir, red oak and white pine as well as other native trees. Aspen is a relatively short lived tree that generally regenerates all at once following a major disturbance such as wind, fire or cutting. Aspen requires full sunlight and does not grow well in 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.

These trees make up an even age stand that originated from a clearcut of mature aspen in 2009.

The most abundant tree species in this stand include Bigtooth Aspen sprouts and scattered overstory oak trees that were left uncut for wildlife and biodiversity values.

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 that can be sustained 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 made up of 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.

Invasive Plants

During the forest inventory process invasive plants were not found in this stand. Not finding invasive plants at this time does not mean that you may not find invasive plants in the future. Please remain diligent in searching for and eliminating invasive plants before they become a serious problem.

Stand Conditions, Special Features or Characteristics

The parent stand of aspen that was clearcut in 2009 was 70 to 80 years old and in a state of serious decline due to old age – many of the aspen trees were dead or dying. The clearcut has successfully regenerated the aspen type on this site. There are thousands of young aspen sprouts per acre established on the site.

Silvicultural System

This stand will be managed and regenerated within generally accepted silvicultural guidelines for the timber type according to the following management system:

NATURAL EVEN-AGED REGENERATION OF TIMBER TYPE WITHOUT FUTURE THINNING. The tree species present in your forest will be managed and regenerated following generally accepted silvicultural guidelines for the timber type. The stand will be managed 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 naturally regenerate the stand.

Year Scheduled	Recommended Forestry Practice
N/A	NONE NEEDED DURING THE PLAN TIMEFRAME

STAND NUMBER 7	
OAK & MIXED HARDWOOD SAWTIMBER (O) NH 15+ [3]	Acreage: 20

This area of land is an Oak Forest. Oak Forests are composed of over 50% oak. In Wisconsin, common kinds of oak trees are red oak, black oak, pin oak, white oak, bur oak. Trees commonly growing in oak forests can be aspen, red maple, hickory, white pine, white birch, basswood, black cherry, sugar maple, elm, or jack pine.

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 may include black oak, white oak, northern pin oak, and bur oak. Trees commonly growing with oak on dry sites can be hickories, black cherry, aspen, red maple, and paper birch. In northern Wisconsin, pines may also occur with 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, trees growing with oak may be basswood, hickories, ironwood, black cherry, elms, red maple, or white pine. On the richest sites, sugar maple or white ash may also occur. 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. Mechanical and chemical techniques are commonly utilized to mimic the effects of fire to regenerate oak.

These trees make up an even age stand that originated about 1926. Tree ages in even-aged stands may vary slightly, but the trees began growing in relatively the same period of time.

The most abundant tree species in this stand include Red & White Oak (67%) and Red & Sugar Maple (24%). Minor associated species include Basswood and Yellow Birch.

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 that can be sustained over time. It also affects other forest attributes, such as wildlife habitat and biodiversity. This stand has a Kert silt loam soil. Loam soils are made up of 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. Care must be taken to prevent compaction and rutting when using equipment on these soils.

Invasive Plants

During the forest inventory process invasive plants were discovered in this stand. The most abundant invasive plant species found in the stand was European Buckthorn near the south edge of the stand adjacent to stand 1.

Stand Conditions, Special Features or Characteristics

This stand is a fully stocked mixed forest of good quality oak sawtimber and mixed hardwood sawtimber and poletimber of various age classes. The stand supports 6 Mbf per acre of sawtimber and about 18 cords per acre of pulpwood. Basal area stocking is good at 118 square feet per acre. While the dominant overstory trees are essentially even aged, the associated poletimber and sapling maple trees are of various ages. Several species associated with the Northern Hardwood forest type, such as sugar maple, basswood and yellow birch are minor components of this stand. A selective improvement thinning was carried out in this stand in 2004. At that time a small area of mature aspen within the stand was clearcut to encourage aspen regeneration and maintain the aspen component and biodiversity within the school forest. Manage this stand to favor the development of the northern hardwood species over time for both educational and biodiversity purposes. This can be accomplished through a series of selective harvests designed to favor the establishment of the more shade tolerant northern hardwoods rather than the oaks.

Silvicultural System

This stand will be managed and regenerated within generally accepted silvicultural guidelines for the timber type according to the following management system:

NATURAL UNEVEN-AGED REGENERATION OF TIMBER TYPE – UNEVEN-AGED. The tree species present in your forest will be managed and regenerated following generally accepted silvicultural guidelines for the timber type. The stand will be managed 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	Recommended Forestry Practices
2020 **2035**	CONVERSION, EVEN-AGE TO UNEVEN-AGED: Develop uneven-aged stand conditions and naturally regenerate this stand using a combination of thinning and canopy gap formation techniques. Thin the stand and release the crowns of 40-60 crop trees per acre. Thin to achieve desired residual density levels by following the order of removal and tree retention guidelines. Create canopy regeneration gaps (30 to 60 feet in diameter) on approximately 10% of the stand to provide adequate sunlight required to establish vigorous tree seedlings.

STAND NUMBER 8	
BIGTOOTH ASPEN POLETIMBER A 5 – 11^3	**Acreage: 3**

This area of land is an Aspen Forest. Aspen Forests are dominated by trembling aspen (also known as quaking aspen and white popple) and bigtooth aspen (also known as yellow popple). Balsam poplar can be found in Aspen Forests in the northern parts of the state. Trees commonly growing with aspen can be red maple, paper birch, balsam fir, red oak and white pine as well as other native trees. Aspen is a relatively short lived tree that generally regenerates all at once following a major disturbance such as wind, fire or cutting. Aspen requires full sunlight and does not grow well in 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. These trees make up an even age stand that originated after clear cutting in 1980.

The most abundant tree species in this stand include Bigtooth Aspen (79%), and Red Maple (21%).

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 that can be sustained 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 made up of 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

Invasive Plants

During the forest inventory process invasive plants were not found in this stand. Not finding invasive plants at this time does not mean that you may not find invasive plants in the future. Please remain diligent in searching for and eliminating invasive plants before they become a serious problem.

Stand Conditions, Special Features or Characteristics

This stand of Bigtooth Aspen was the result of the first commercial timber harvest on the Marshfield School Forest. A mature aspen stand was clearcut in 1980 and the resulting stand of aspen sprouts is now 31 years old with 24 cords per acre of pulpwood. Basal area stocking levels are at 95 square feet per acre. The stand is growing well and provides an excellent educational stop for student groups learning about sustainable forestry.

Silvicultural System

This stand will be managed and regenerated within generally accepted silvicultural guidelines for the timber type according to the following management system:

NATURAL EVEN-AGED REGENERATION OF TIMBER TYPE WITHOUT FUTURE THINNING. The tree species present in your forest will be managed and regenerated following generally accepted silvicultural guidelines for the timber type. The stand will be managed 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 naturally regenerate the stand.

Year Scheduled	Recommended Forestry Practices
2030	COPPICE REGENERATION HARVEST. Naturally regenerate this stand to vegetatively reproduce new trees (root and/or stump sprouts) using the coppice regeneration method. This involves cutting all trees (except reserve trees – 5 to 15% crown cover) to allow the trees to regenerate vigorously after the harvest. Variations of coppice regeneration include: simple (non-Certified MFL Group land) and compound. If the stand is healthy the rotation age can be extended for sawlog production and/or educational purposes.

STAND NUMBER 9	
OAK / ASPEN SAWTIMBER STAND (OR) A 15+ [3]	**Acreage: 50**

This area of land is an Oak Forest. Oak Forests are composed of over 50% oak. In Wisconsin, common kinds of oak trees are red oak, black oak, pin oak, white oak, bur oak. Trees commonly growing in oak forests can be aspen, red maple, hickory, white pine, white birch, basswood, black cherry, sugar maple, elm, or jack pine.

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 may include black oak, white oak, northern pin oak, and bur oak. Trees commonly growing with oak on dry sites can be hickories, black cherry, aspen, red maple, and paper birch. In northern Wisconsin, pines may also occur with 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, trees growing with oak may be basswood, hickories, ironwood, black cherry, elms, red maple, or white pine. On the richest sites, sugar maple or white ash may also occur. 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. Mechanical and chemical techniques are commonly utilized to mimic the effects of fire to regenerate oak.

These trees make up an even age stand that originated about 1926. Tree ages in even-aged stands may vary slightly, but the trees began growing in relatively the same period of time.

The most abundant tree species in this stand include Red & White Oak (58%), Bigtooth Aspen (18%), and Red Maple (10%).

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 that can be sustained 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 made up of 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.

Invasive Plants

During the forest inventory process invasive plants were not found in this stand. Not finding invasive plants at this time does not mean that you may not find invasive plants in the future. Please remain diligent in searching for and eliminating invasive plants before they become a serious problem.

Stand Conditions, Special Features or Characteristics

This is a fully stocked stand of Red Oak sawtimber and a secondary component of Bigtooth Aspen clones growing on the ridge that bisects the school forest property from east to west. The western end of the stand has been selectively cut in 2004 (south side of the ridge) and 2009 (north side of the ridge). Aspen areas were patch clearcut to regenerate the aspen type for wildlife and biodiversity purposes. The overall stand currently averages 6 Mbf per acre of sawtimber and 19 cords per acre of pulpwood. Basal area stocking is at 115 square feet per acre. The cross country ski trail runs down the top of the ridge through the middle of this stand. Manage the stand through continued group selection harvests designed to regenerate oak and aspen and maintain the aesthetic values of the forested ridge.

Silvicultural System

This stand will be managed and regenerated within generally accepted silvicultural guidelines for the timber type according to the following management system:

NATURAL EVEN-AGED REGENERATION OF TIMBER TYPE WITH FUTURE THINNING The tree species present in your forest will be managed and regenerated following generally accepted silvicultural guidelines for the timber type. The stand will be managed through its rotation (the period between initial regeneration and the stand's final cutting) as a single aged forest. Periodic thinnings will be applied 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 naturally regenerate the stand.

Year Scheduled	Recommended Forestry Practices
2024	GROUP SELECTION HARVEST. Naturally regenerate this stand using the group selection regeneration method. This involves harvesting to create canopy group openings from 75 feet (1/10 acre) to 160 feet (1/2 acre) in diameter. Smaller openings will benefit more shade tolerant species, and larger openings encourage more mid-tolerant species. Site preparation may be required. Thin the remainder of the stand to reduce stocking and concentrate growth on more desirable trees by following the order of removal and tree retention guidelines.

STAND NUMBER 10	
OAK & MIXED HARDWOOD SMALL SAWTIMBER (OR)MR 11 – 15 [3]	**Acreage: 38**

This area of land is an Oak Forest. Oak Forests are composed of over 50% oak. In Wisconsin, common kinds of oak trees are red oak, black oak, pin oak, white oak, bur oak. Trees commonly growing in oak forests can be aspen, red maple, hickory, white pine, white birch, basswood, black cherry, sugar maple, elm, or jack pine.

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 may include black oak, white oak, northern pin oak, and bur oak. Trees commonly growing with oak on dry sites can be hickories, black cherry, aspen, red maple, and paper birch. In northern Wisconsin, pines may also occur with 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, trees growing with oak may be basswood, hickories, ironwood, black cherry, elms, red maple, or white pine. On the richest sites, sugar maple or white ash may also occur. 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. Mechanical and chemical techniques are commonly utilized to mimic the effects of fire to regenerate oak.

These trees make up an even age stand that originated about 1940. Tree ages in even-aged stands may vary slightly, but the trees began growing in relatively the same period of time

The most abundant tree species in this stand include Red Oak (40%), White Oak (16%), and Red Maple (30%). White pine saplings are a common component of the understory.

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 that can be sustained 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 made up of 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.

Invasive Plants

During the forest inventory process invasive plants were discovered in this stand. The most abundant invasive plant species found in the stand was European Buckthorn. Please remain diligent in searching for and eliminating invasive plants before they become a serious problem.

Stand Conditions, Special Features or Characteristics

This mixed oak and hardwood stand is fully stocked with oak sawtimber and associated red maple poletimber. Stocking levels are good with 104 square feet of basal area per acre. Growing stock volumes are at 4 Mbf per acre of sawtimber and 18 cords per acre of pulpwood. The stand was previously thinned in 1997 to remove mature aspen and poor quality growing stock. Openings created by the thinning have seeded in with white pine seedlings and saplings. The cross country ski trail winds throughout this stand.

Silvicultural System

This stand will be managed and regenerated within generally accepted silvicultural guidelines for the timber type according to the following management system:

NATURAL CONVERSION This stand will naturally convert to white pine and red maple after harvesting or completing

your prescribed management treatments. Natural conversion is expected because these tree species are already present as younger trees or will be able to seed in and become established once the proper seedbed, light and crown canopy conditions exist. Periodic thinning will be applied 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 naturally convert your stand.

To respect aesthetic preferences, this stand will be converted to an all aged stand by retaining long-lived, shade tolerant trees as a seed source until a fully stocked understory is created.

Year Scheduled	Recommended Forestry Practices
2020 **2035**	GROUP SELECTION HARVEST. Naturally regenerate this stand using the group selection regeneration method. This involves harvesting to create canopy group openings from 75 feet (1/10 acre) to 160 feet (1/2 acre) in diameter. Smaller openings will benefit more shade tolerant species, and larger openings encourage more mid-tolerant species. Site preparation may be required. Thin the remainder of the stand to reduce stocking and concentrate growth on more desirable trees by following the order of removal and tree retention guidelines.

STAND NUMBER 11	
ASPEN POLETIMBER **A 5 – 11** [1]	**Acreage: 6**

This area of land is an Aspen Forest. Aspen Forests are dominated by trembling aspen (also known as quaking aspen and white popple) and bigtooth aspen (also known as yellow popple). Balsam poplar can be found in Aspen Forests in the northern parts of the state. Trees commonly growing with aspen can be red maple, paper birch, balsam fir, red oak and white pine as well as other native trees. Aspen is a relatively short lived tree that generally regenerates all at once following a major disturbance such as wind, fire or cutting. Aspen requires full sunlight and does not grow well in 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.

These trees make up an even age stand that originated following aspen clearcut harvests in 1985 on the south portion of the stand and 1986 on the north. Tree ages in even-aged stands may vary slightly, but the trees began growing in relatively the same period of time.

The most abundant tree species in this stand include Aspen (71%), Red Maple (14%) and Red Oak (15%).
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 that can be sustained 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 made up of 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.

Invasive Plants

During the forest inventory process invasive plants were not found in this stand. Not finding invasive plants at this time does not mean that you may not find invasive plants in the future. Please remain diligent in searching for and eliminating invasive plants before they become a serious problem.

Stand Conditions, Special Features or Characteristics

This stand is a fully stocked young aspen stand about 25 years old. It originated following clearcutting in 1985-86 that was done in conjunction with construction of the access road around the north side of the oak ridge. Timber sale revenues helped pay for the roadwork. Current stocking levels of merchantable timber are low due to the young age of the stand with 35 square feet of basal area per acre in stems >4" diameter, and 6 cords per acre of pulpwood.

Silvicultural System

This stand will be managed and regenerated within generally accepted silvicultural guidelines for the timber type according to the following management system:

NATURAL EVEN-AGED REGENERATION OF TIMBER TYPE WITHOUT FUTURE THINNING. The tree species present in your forest will be managed and regenerated following generally accepted silvicultural guidelines for the timber type. The stand will be managed 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 naturally regenerate the stand.

Year Scheduled	Recommended Forestry Practices
2031	COPPICE REGENERATION HARVEST. Naturally regenerate this stand to vegetatively reproduce new trees (root and/or stump sprouts) using the coppice regeneration method. This involves cutting all trees (except reserve trees – 5 to 15% crown cover) to allow the trees to regenerate vigorously after the harvest. Variations of coppice regeneration include: simple (non-Certified MFL Group land) and compound.

STAND NUMBER 12	
Mixed Hardwoods, Aspen, & White Pine Poletimber & Sawtimber (MR)A 5 – 11 [3]/ PW 0 – 5 [2]	**Acreage: 30**

This area of land is a Red Maple Forest. Red Maple Forests are composed of over 50% red maple. Trees commonly growing with red maple can be ash, elm, aspen, white birch, white pine, balsam fir, white cedar, and oak as well as other native trees.

Over the last century red maple has increased dramatically in abundance throughout the state. Red maple can produce abundant seed and readily stump sprouts. It tolerates shade, and occurs on a wide range of soils from sands to loams, and dry to wet. It grows best on well-drained loamy soils.

These trees make up an uneven-aged stand with a variety of tree ages, ranging from young trees (seedlings) through trees that are older (pulpwood and sawlogs).

The most abundant tree species in this stand include Red Maple (44%), Quaking Aspen (20%), Oak (18%) and White Pine 12%.

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 that can be sustained over time. It also affects other forest attributes, such as wildlife habitat and biodiversity. This stand has a somewhat poorly drained silt loam soil. Loam soils are made up of 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. Care must be taken to prevent compaction and rutting when using equipment on these soils – harvest only during dry summer conditions, or in winter on frozen ground.

Invasive Plants

During the forest inventory process invasive plants were discovered in this stand. The most abundant invasive plant species found in the stand was European Buckthorn. Please remain diligent in searching for and eliminating invasive plants before they become a serious problem.

Stand Conditions, Special Features or Characteristics

This stand is a diverse mixture of red maple, oak, aspen, and white pine poletimber, sawtimber, saplings, and seedlings. The stand has not been harvested in the past 50 years due to the wet site and poor stocking levels. Current stocking levels are moderate with 89 square feet of basal area per acre on average. Timber inventory levels are 16 cords per acre of pulpwood and 1.4 Mbf per acre of sawtimber. All age classes are represented in this stand as the aspen drops out due to natural mortality and and young maple, oak and white pine seeds into the open understory areas. There are abundant oak seedlings and saplings that have become established at the edge of the higher ground along the south end of the stand. Future management should be directed towards favoring the development of the established oak and white pine seedlings and saplings in the understory through periodic selective harvests to remove mature aspen and poorer quality overstory maple trees. Due to the wet site there are no woods roads or trails developed in this stand.

Silvicultural System

This stand will be managed and regenerated within generally accepted silvicultural guidelines for the timber type according to the following management system:

NATURAL UNEVEN-AGED REGENERATION OF TIMBER TYPE – UNEVEN-AGED. The tree species present in your forest will be managed and regenerated following generally accepted silvicultural guidelines for the timber type. The stand will be managed 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	Recommended Forestry Practices
2020	SINGLE TREE SELECTION HARVEST. Naturally regenerate this stand using the single tree selection regeneration method. This involves harvesting individual trees of various size and age classes to provide space for regeneration and promote the growth of 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.

STAND NUMBER 13	
OAK & MIXED HARDWOOD SAWTIMBER (O)MR 15+ [4]	**Acreage: 62**

This area of land is an Oak Forest. Oak Forests are composed of over 50% oak. In Wisconsin, common kinds of oak trees are red oak, black oak, pin oak, white oak, bur oak. Trees commonly growing in oak forests can be aspen, red maple, hickory, white pine, white birch, basswood, black cherry, sugar maple, elm, or jack pine.

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 may include black oak, white oak, northern pin oak, and bur oak. Trees commonly growing with oak on dry sites can be hickories, black cherry, aspen, red maple, and paper birch. In northern Wisconsin, pines may also occur with 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, trees growing with oak may be basswood, hickories, ironwood, black cherry, elms, red maple, or white pine. On the richest sites, sugar maple or white ash may also occur. 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. Mechanical and chemical techniques are commonly utilized to mimic the effects of fire to regenerate oak.

These trees make up an even age stand that originated about 1911. Tree ages in even-aged stands may vary slightly, but the trees began growing in relatively the same period of time

The most abundant tree species in this stand include Red & White Oak (56%) Red Maple (27%) and Bigtooth Aspen (9%). Scattered large diameter white pines are present throughout the stand.

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 that can be sustained 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 made up of 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. The lower slopes of this stand are typically silt loam soils.

Invasive Plants

During the forest inventory process invasive plants were not found in this stand. Not finding invasive plants at this time does not mean that you may not find invasive plants in the future. Please remain diligent in searching for and eliminating invasive plants before they become a serious problem.

Stand Conditions, Special Features or Characteristics

This stand became established following early logging and fires in the early 1900's. It is presently well stocked with excellent quality oak sawtimber and the dominant crop trees are about 100 years old. Current stocking levels are high with 140 square feet per acre of basal area in sawtimber and poletimber. Inventory volumes average about 8 Mbf of sawtimber per acre and 23 cords of pulpwood per acre. Much of this stand has been selectively thinned, part in 1980 and part in 1984. There have been no thinnings in the stand since that time. Future management will be directed towards creating conditions appropriate to encourage natural regeneration of the oak and mixed hardwoods as they mature and are gradually removed from the stand in a series of group selection harvests about 15-20 years apart. Aesthetics are important and large oak and white pine trees should be maintained in the stand for as long as possible – some may never be cut. The skiing and hiking trails wind throughout this stand as it is mostly upland open forest and truly impressive tall timber.

Silvicultural System

This stand will be managed and regenerated within generally accepted silvicultural guidelines for the timber type according to the following management system:

NATURAL CONVERSION This stand will naturally convert to central hardwood & white pine after harvesting or completing your prescribed management treatments. Natural conversion is expected because these tree species are already present as younger trees or will be able to seed in and become established once the proper seedbed, light and crown canopy conditions exist. Periodic thinning will be applied 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 naturally convert your stand.

Year Scheduled	Recommended Forestry Practices
2015 **2035**	GROUP SELECTION HARVEST. Naturally regenerate this stand using the group selection regeneration method. This involves harvesting to create canopy group openings from 75 feet (1/10 acre) to 160 feet (1/2 acre) in diameter. Smaller openings will benefit more shade tolerant species, and larger openings encourage more mid-tolerant species. Site preparation may be required. Thin the remainder of the stand to reduce stocking and concentrate growth on more desirable trees by following the order of removal and tree retention guidelines.

STAND NUMBER 15	
OVERMATURE ASPEN TYPE **(A) MR 11 – 15** [2]	**Acreage: 2**

This area of land is an Aspen Forest. Aspen Forests are dominated by trembling aspen (also known as quaking aspen and white popple) and bigtooth aspen (also known as yellow popple). Balsam poplar can be found in Aspen Forests in the northern parts of the state. Trees commonly growing with aspen can be red maple, paper birch, balsam fir, red oak and white pine as well as other native trees. Aspen is a relatively short lived tree that generally regenerates all at once following a major disturbance such as wind, fire or cutting. Aspen requires full sunlight and does not grow well in 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.

These trees make up an even age stand that originated about 1936. Tree ages in even-aged stands may vary slightly, but the trees began growing in relatively the same period of time.

The most abundant tree species in this stand include Bigtooth Aspen (45%), Red Maple (27%), and Red Oak (18%). .

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 that can be sustained 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 made up of 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.

Invasive Plants

During the forest inventory process invasive plants were not found in this stand. Not finding invasive plants at this time does not mean that you may not find invasive plants in the future. Please remain diligent in searching for and eliminating invasive plants before they become a serious problem.

Stand Conditions, Special Features or Characteristics

This is a small stand of overmature aspen along the main access road that has been left uncut for educational purposes. It is a living example of natural succession demonstrating what happens to unmanaged stands of aspen as they gradually decline and die and are replaced by more shade tolerant trees. It is located right across the road from the 1980 aspen clearcut area fully stocked with young aspen trees. Stocking levels in this stand are moderate with about 70 square feet per acre of basal area. Timber inventory levels are 15 cords of pulpwood per acre and 0.8 Mbf of sawtimber per acre. Future management of this stand will be to not harvest it and just allow natural succession to run its' course over the next 25 years.

Silvicultural System

This stand will be managed and regenerated within generally accepted silvicultural guidelines for the timber type according to the following management system:

NATURAL CONVERSION This stand will naturally convert to Red Maple after no harvesting for many years. Natural conversion is expected because these tree species are already present as younger trees or will be able to seed in and become established once the proper seedbed, light and crown canopy conditions exist.

Year Scheduled	Recommended Forestry Practices
N/A	**NONE – ALLOW NATURAL SUCCESSION TO RUN ITS COURSE.**

STAND NUMBER 16	
WHITE PINE SMALL SAWTIMBER PW 9 – 15 [4]	**Acreage: 8**

This area of land is a White Pine Forest. White Pine Forests consist of more than 50% white pine. Trees commonly growing with white pine can be red and jack pine, aspen, paper birch, red maple, oak, balsam fir, white spruce, or eastern hemlock as well as other native trees. White pine is a long lived tree species that was common in Wisconsin's historic forests. It was heavily logged during the Cutover and was scarce for a time, but is now increasing as trees become old enough to be good seed producers.

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

These trees make up an even age stand that originated about 1946. Tree ages in even-aged stands may vary slightly, but the trees began growing in relatively the same period of time.

The most abundant tree species in this stand include White Pine (60%), Red Maple (14%), and Quaking Aspen (14%). Other minor species include tamarack (11%), and a few scattered oak 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 that can be sustained over time. It also affects other forest attributes, such as wildlife habitat and biodiversity. This stand has a somewhat poorly drained silt loam soil. Loam soils are made up of 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. Care must be taken to prevent compaction and rutting when using equipment on these soils

Invasive Plants

During the forest inventory process invasive plants were discovered in this stand. The most abundant invasive plant species found in the stand was European Buckthorn. Please remain diligent in searching for and eliminating invasive plants before they become a serious problem.

Stand Conditions, Special Features or Characteristics

This stand consists of several lowland areas dominated by white pine poletimber and small sawtimber about 65 years old. Stocking levels are high with an average of 160 square feet of basal area per acre. Inventory timber volumes are 32 cords per acre of pulpwood, and 6 Mbf per acre of sawtimber. Future management should be directed towards developing good quality white pine sawtimber through periodic thinnings about 15 years apart. The stand can be regenerated at maturity (100 to 120 years) with a series of shelterwood harvests or group selection harvests.

Silvicultural System

This stand will be managed and regenerated within generally accepted silvicultural guidelines for the timber type according to the following management system:

NATURAL EVEN-AGED REGENERATION OF TIMBER TYPE WITH FUTURE THINNING The tree species present in your forest will be managed and regenerated following generally accepted silvicultural guidelines for the timber type. The stand will be managed through its rotation (the period between initial regeneration and the stand's final cutting) as a single aged forest. Periodic thinnings will be applied 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 naturally regenerate the stand.

Year Scheduled	Recommended Forestry Practices
2020 2035	THINNING. Remove trees to reduce stand density to improve tree growth, enhance forest health or utilize trees that are at risk of mortality. Thinning is done to reduce stocking and concentrate growth on more desirable trees by following the order of removal and tree retention guidelines.

STAND NUMBER 17	
RED MAPLE POLETIMBER (MR) O 5 – 11 [3] / PW 0-5 [2]	**Acreage: 7**

This area of land is a Red Maple Forest. Red Maple Forests are composed of over 50% red maple. Trees commonly growing with red maple can be ash, elm, aspen, white birch, white pine, balsam fir, white cedar, and oak as well as other native trees.

Over the last century red maple has increased dramatically in abundance throughout the state. Red maple can produce abundant seed and readily stump sprouts. It tolerates shade, and occurs on a wide range of soils from sands to loams, and dry to wet. It grows best on well-drained loamy soils.

These trees make up an uneven-aged stand with a variety of tree ages, ranging from young trees (seedlings) through trees that are older (pulpwood and sawlogs).

The most abundant tree species in this stand include Red Maple (50%), Red & White Oak (24%), and White Pine (12%). 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 that can be sustained over time. It also affects other forest attributes, such as wildlife habitat and biodiversity. This stand has a silt loam soil. Loam soils are made up of 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. Care must be taken to prevent compaction and rutting when using equipment on these soils.

Invasive Plants

During the forest inventory process invasive plants were not found in this stand. Not finding invasive plants at this time does not mean that you may not find invasive plants in the future. Please remain diligent in searching for and eliminating invasive plants before they become a serious problem.

Stand Conditions, Special Features or Characteristics

This stand occupies a low, wet drainage that comes off of the oak ridge and drains to the Southwest corner of the property. It flows into Rocky Run and eventually into the East Fork Black River. The stand consists of various age classes of Red Maple and White Pine with associated oak sawtimber trees on the edges of the drainage. There is no history of forest management in this stand because most of it is low and wet and only accessible during very dry weather or on frozen ground. Future management should be directed towards developing an all aged mix of maple, white pine, and oak by removing overstory maple where they are shading out white pine saplings. Avoid crossing the drainage at the south end where it is the wettest.

Silvicultural System

This stand will be managed and regenerated within generally accepted silvicultural guidelines for the timber type according to the following management system:
NATURAL UNEVEN-AGED REGENERATION OF TIMBER TYPE – UNEVEN-AGED. The tree species present in your forest will be managed and regenerated following generally accepted silvicultural guidelines for the timber type. The stand will be managed 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	Recommended Forestry Practices
2015 **2030**	SINGLE TREE SELECTION HARVEST. Naturally regenerate this stand using the single tree selection regeneration method. This involves harvesting individual trees of various size and age classes to provide space for regeneration and promote the growth of 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**.**

STAND NUMBER 18	
RED MAPLE & OAK POLETIMBER & SAPLINGS (MR) O 5 – 11 ^{2} / UB	**Acreage: 5**

This area of land is a Red Maple Forest. Red Maple Forests are composed of over 50% red maple. Trees commonly growing with red maple can be ash, elm, aspen, white birch, white pine, balsam fir, white cedar, and oak as well as other native trees.

Over the last century red maple has increased dramatically in abundance throughout the state. Red maple can produce abundant seed and readily stump sprouts. It tolerates shade, and occurs on a wide range of soils from sands to loams, and dry to wet. It grows best on well-drained loamy soils.

These trees make up an even age stand that originated about 1985. Tree ages in even-aged stands may vary slightly, but the trees began growing in relatively the same period of time.

The most abundant tree species in this stand include Red Maple, Red Oak, and White Birch.

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 that can be sustained over time. It also affects other forest attributes, such as wildlife habitat and biodiversity. This stand has a loam soil. Loam soils are made up of 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. Care must be taken to prevent compaction and rutting when using equipment on these soils.

Invasive Plants

During the forest inventory process invasive plants were discovered in this stand. The most abundant invasive plant species found in the stand was European Buckthorn, in the south portion of this stand.

Stand Conditions, Special Features or Characteristics

This stand originated following disturbance. The south portion is natural seeding that came in on an old field, and the north part of the stand is natural reproduction following logging around 1990. The south portion on the old field site is heavily infested with buckthorn in the understory of the stand. Long term management in this stand will be to encourage growth and development of the better quality oak and maple through periodic thinnings until the stand is mature at 90-100 years. Control of the buckthorn understory is recommended before any commercial harvests in this stand.

Silvicultural System

This stand will be managed and regenerated within generally accepted silvicultural guidelines for the timber type according to the following management system:

NATURAL EVEN-AGED REGENERATION OF TIMBER TYPE WITH FUTURE THINNING The tree species present in your forest will be managed and regenerated following generally accepted silvicultural guidelines for the timber type. The stand will be managed through its rotation (the period between initial regeneration and the stand's final cutting) as a single aged forest. Periodic thinnings will be applied 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 naturally regenerate the stand.

Year Scheduled	Recommended Forestry Practices
2035	THINNING. Remove trees to reduce stand density to improve tree growth, enhance forest health or utilize trees that are at risk of mortality. Thinning is done to reduce stocking and concentrate growth on more desirable trees by following the order of removal and tree retention guidelines. Schedule the thinning to coincide with harvesting in the adjacent stand 13.
2015 - 2036	Implement a long term program of buckthorn control prior to any tree harvesting in this stand.

STAND NUMBER 19	
ASPEN & OAK POLETIMBER (A) O 5 – 11 [3]	**Acreage: 4**

This area of land is an Aspen Forest. Aspen Forests are dominated by trembling aspen (also known as quaking aspen and white popple) and bigtooth aspen (also known as yellow popple). Balsam poplar can be found in Aspen Forests in the northern parts of the state. Trees commonly growing with aspen can be red maple, paper birch, balsam fir, red oak and white pine as well as other native trees. Aspen is a relatively short lived tree that generally regenerates all at once following a major disturbance such as wind, fire or cutting. Aspen requires full sunlight and does not grow well in 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.

These trees make up an even age stand that originated following a clearcut in 1988. Tree ages in even-aged stands may vary slightly, but the trees began growing in relatively the same period of time

The most abundant tree species in this stand include Bigtooth Aspen (42%), Red Oak (26%), and Red Maple (32%).

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 that can be sustained over time. It also affects other forest attributes, such as wildlife habitat and biodiversity. This stand is on the steep south facing slope at the east end of the oak ridge (stand 9). It has a sandy loam soil. Sandy loam soils are made up of 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.

Invasive Plants

During the forest inventory process invasive plants were not found in this stand. Not finding invasive plants at this time does not mean that you may not find invasive plants in the future. Please remain diligent in searching for and eliminating invasive plants before they become a serious problem.

Stand Conditions, Special Features or Characteristics

This stand originated following clear cutting of mature aspen on the steep south facing slope at the east end of the oak ridge (stand 9). It has regenerated to a nice mixture of aspen, oak, and maple trees. Future management will be to allow it to grow to maturity at age 50 – 60 years and then regenerate the stand with another clearcut.

Silvicultural System

This stand will be managed and regenerated within generally accepted silvicultural guidelines for the timber type according to the following management system:

NATURAL EVEN-AGED REGENERATION OF TIMBER TYPE WITHOUT FUTURE THINNING. The tree species present in your forest will be managed and regenerated following generally accepted silvicultural guidelines for the timber type. The stand will be managed 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 naturally regenerate the stand.

Year Scheduled	Recommended Forestry Practices
N/A	**NO PRACTICES NEEDED FOR THE NEXT 25 YEARS.**

STAND NUMBER 20	
ASPEN POLETIMBER **A 5 – 11 [2]**	**Acreage: 3**

This area of land is an Aspen Forest. Aspen Forests are dominated by trembling aspen (also known as quaking aspen and white popple) and bigtooth aspen (also known as yellow popple). Balsam poplar can be found in Aspen Forests in the northern parts of the state. Trees commonly growing with aspen can be red maple, paper birch, balsam fir, red oak and white pine as well as other native trees. Aspen is a relatively short lived tree that generally regenerates all at once following a major disturbance such as wind, fire or cutting. Aspen requires full sunlight and does not grow well in 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. These trees make up an even age stand that originated following a clearcut in 1983. Tree ages in even-aged stands may vary slightly, but the trees began growing in relatively the same period of time. The most abundant tree species in this stand include Bigtooth Aspen (75%), and Red Maple (25%).

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 that can be sustained 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 made up of 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.

Invasive Plants

During the forest inventory process invasive plants were not found in this stand. Not finding invasive plants at this time does not mean that you may not find invasive plants in the future. Please remain diligent in searching for and eliminating invasive plants before they become a serious problem.

Stand Conditions, Special Features or Characteristics

This stand originated following clear cutting of mature aspen on the north side of the east end of the oak ridge (stand 9). It has regenerated to a nice mixture of aspen, and red maple trees. Future management will be to allow it to grow to maturity at age 50 – 60 years and then regenerate the stand with another clearcut.

Silvicultural System

This stand will be managed and regenerated within generally accepted silvicultural guidelines for the timber type according to the following management system:

NATURAL EVEN-AGED REGENERATION OF TIMBER TYPE WITHOUT FUTURE THINNING. The tree species present in your forest will be managed and regenerated following generally accepted silvicultural guidelines for the timber type. The stand will be managed 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 naturally regenerate the stand.

Year Scheduled	Recommended Forestry Practices
2033	COPPICE REGENERATION HARVEST. Naturally regenerate this stand to vegetatively reproduce new trees (root and/or stump sprouts) using the coppice regeneration method. This involves cutting all trees (except reserve trees – 5 to 15% crown cover) to allow the trees to regenerate vigorously after the harvest. Variations of coppice regeneration include: simple (non-Certified MFL Group land) and compound. The stand should be inspected in 2033. If it is healthy and growing well, the final harvest can be delayed to allow the stand to grow to a larger size for sawbolt production, and aesthetic purposes.

STAND NUMBER 21	
BIGTOOTH ASPEN SPROUTS (A) O 0 – 5 [3]	**Acreage: 7**

This area of land is an Aspen Forest. Aspen Forests are dominated by trembling aspen (also known as quaking aspen and white popple) and bigtooth aspen (also known as yellow popple). Balsam poplar can be found in Aspen Forests in the northern parts of the state. Trees commonly growing with aspen can be red maple, paper birch, balsam fir, red oak and white pine as well as other native trees. Aspen is a relatively short lived tree that generally regenerates all at once following a major disturbance such as wind, fire or cutting. Aspen requires full sunlight and does not grow well in 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.

These trees make up an even age stand that originated from a clearcut of mature aspen in 1997.

The most abundant tree species in this stand include Bigtooth Aspen (68%), Red Oak (18%), and Red Maple (10%).

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 that can be sustained 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 made up of 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.

Invasive Plants

During the forest inventory process invasive plants were not found in this stand. Not finding invasive plants at this time does not mean that you may not find invasive plants in the future. Please remain diligent in searching for and eliminating invasive plants before they become a serious problem.

Stand Conditions, Special Features or Characteristics

This stand of aspen saplings originated following the final harvest of a mature aspen stand on this site in 1997. A well stocked mixture of aspen, oak, and maple saplings is on the site today, 15 years later. The cross country / hiking trail winds through this stand. Future management will be to allow the aspen to develop to full maturity at about age 60 and then regenerate the stand with another final clearcut harvest in about the year 2057.

Silvicultural System

This stand will be managed and regenerated within generally accepted silvicultural guidelines for the timber type according to the following management system:

NATURAL EVEN-AGED REGENERATION OF TIMBER TYPE WITHOUT FUTURE THINNING. The tree species present in your forest will be managed and regenerated following generally accepted silvicultural guidelines for the timber type. The stand will be managed 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 naturally regenerate the stand.

Year Scheduled	Recommended Forestry Practice
N/A	**NONE NEEDED DURING THE PLAN TIMEFRAME**

STAND NUMBER 22	
RED MAPLE AND RED OAK SAWTIMBER (MR) OR 15+ [3]	**Acreage: 7**

This area of land is a Red Maple Forest. Red Maple Forests are composed of over 50% red maple. Trees commonly growing with red maple can be ash, elm, aspen, white birch, white pine, balsam fir, white cedar, and oak as well as other native trees. Over the last century red maple has increased dramatically in abundance throughout the state. Red maple can produce abundant seed and readily stump sprouts. It tolerates shade, and occurs on a wide range of soils from sands to loams, and dry to wet. It grows best on well-drained loamy soils. These trees make up an uneven-aged stand with a variety of tree ages, ranging from young trees (seedlings) through trees that are older (pulpwood and sawlogs). The most abundant tree species in this stand include Red Maple (61%), Red Oak (15%), White Ash (8%), and Aspen (7%).

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 that can be sustained over time. It also affects other forest attributes, such as wildlife habitat and biodiversity. This stand has a silt loam soil. Loam soils are made up of 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. Care must be taken to prevent compaction and rutting when using equipment on these soils.

Invasive Plants

During the forest inventory process invasive plants were discovered in this stand. The most abundant invasive plant species found in the stand was European Buckthorn. Please remain diligent in searching for and eliminating invasive plants before they become a serious problem.

Stand Conditions, Special Features or Characteristics

This is an unmanaged stand of mixed hardwood and oak sawtimber that is gradually moving towards an uneven aged stand structure. It is well stocked with 130 square feet of basal area per acre of growing stock. The inventory volumes are at 4 Mbf per acre of sawtimber and 18 cords per acre of pulpwood. Access to the stand is difficult because it is north of the low area in stands 12 & 16 and the tag alder areas in stand 2. There are no recreational hiking or skiing trails in this part of the property. It gets very little use. Future management will be to allow the stand to move to an all aged condition with periodic selective harvests to remove mature timber and thin out overcrowded or poor quality trees.

Silvicultural System

This stand will be managed and regenerated within generally accepted silvicultural guidelines for the timber type according to the following management system:

NATURAL UNEVEN-AGED REGENERATION OF TIMBER TYPE – UNEVEN-AGED. The tree species present in your forest will be managed and regenerated following generally accepted silvicultural guidelines for the timber type. The stand will be managed 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	Recommended Forestry Practices
2020 **2035**	SINGLE TREE SELECTION HARVEST. Naturally regenerate this stand using the single tree selection regeneration method. This involves harvesting individual trees of various size and age classes to provide space for regeneration and promote the growth of 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.

IMPORTANT PROGRAM REQUIREMENTS AND MANAGEMENT PRACTICES COMMON FOR THE ENTIRE PROPERTY

Best Management Practices for Water Quality (BMPs)
To protect the water quality in Wisconsin's lakes, streams and wetlands W*isconsin's Forestry Best Management Practices for Water Quality* must be employed during property management such as road building or timber harvest. To see these BMPs, go to http://dnr.wi.gov/forestry/Usesof/bmp/bmpfieldmanual.htm.

Forest Health
Forest health problems may develop from time to time. These problems may include, but are not limited to, insect damage, diseases, windstorms, fire, flooding, and drought. Forest health issues may alter generally accepted forest management guidelines. Please contact your local DNR Forester or Cooperating Forester if you are concerned about Forest Health or contact the DNR Website at: http://dnr.wi.gov/forestry/Fh/.

Cost Share on Forest Management or Tree Planting
Learn if you qualify for forest management or tree planting cost share; go to http://dnr.wi.gov/forestry/private/financial/. Seedlings can be purchased through the state nursery program. Get tree order information or create your own tree planting plan at http://dnr.wi.gov/forestry/nursery/.

Timber Harvesting Contracts
It is very important that a landowner and logging contractor have a written and signed contract to guide the harvesting process before any harvesting is started. For more information on timber sale contracts please visit http://dnr.wi.gov/forestry/private/harvest/ .

Natural Disturbances
Wind, ice, snow, insects, diseases, forest fire or other acts of nature can significantly impact forest stands. You may be able to take remedial steps to help your woodland recover and reduce your financial loss. For example, you may be able to:

1. Salvage commercially merchantable timber;
2. Release seedlings and saplings from damaged overstory timber;
3. Harvest damaged timber for sanitation purposes;
4. Re-establish tree seedlings through artificial or natural regeneration and follow-up treatments.

If your property has such damage, please contact your Cooperating Forester, or the local DNR Forester at http://dnr.wi.gov/forestry/ftax/county.asp.

Invasive Plant Species
Invasive plants may decrease productivity, regeneration, habitat, recreational value and quality of your property. Identifying and controlling small populations of invasive plants is essential to minimize the spread of these unwanted plants. For additional information on invasive plant control, follow the management practices as recommended in *Wisconsin's Forestry Best Management Practices for Invasive Species* booklet. This booklet is available at any DNR Forestry office or at the DNR Website at http://dnr.wi.gov/invasives/index.htm.

Wildlife Habitat and Recreation Management
Wildlife habitat and recreation can be managed along with timber management. Most of these practices can be done throughout your entire property and can include seeding and mowing of trails and openings, and maintaining snags, den trees, and "wolf" trees. To learn more wildlife friendly ideas, visit http://dnr.wi.gov/org/land/wildlife/.

Non-Timber Forest Products
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 may be harvested. Some of these non-timber products, such as ginseng, may be regulated by Wisconsin statutes. Others may be protected as threatened or endangered species. All applicable laws must be followed when harvesting non-timber products. Care must also be taken 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 forest land please contact your Cooperating Forester, or your local DNR Forester at http://dnr.wi.gov/forestry/ftax/county.asp.

Forest Certification

The Marshfield School Forest is certified under the American Tree Farm System (ATFS). As more and more wood-using industries and consumers demand proof they are buying wood from sustainably managed woodlands, ATFS landowners benefit from this certification.

Being certified by a third party 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 ATFS member duties include:

1. Agreeing to follow an ATFS-approved forest management plan
2. Conforming to ATFS certification standards, including any measures that might go beyond other state, federal or local laws. Some features that are emphasized in the ATFS include:
   a. Allowing access for ATFS Group forest certification field audits
   b. Using pesticides (when needed) that are not prohibited by the EPA. Landowners should self report pesticide use on their lands. A reporting system is available at http://dnr.wi.gov/forestry/certification/pesticideUse.htm.
   c. Endeavoring to adhere to Wisconsin Forestry Best Management Practices
   d. Striving to consider appropriate liability insurance and safety requirements in timber sales and other contracts
   e. Using the ATFS logos in conformance with their trademark policies

This certification is *voluntary*. If you depart, you will not be able to market forest products as third party certified under the auspices of the ATFS program. For additional forest certification information, visit http://dnr.wi.gov/forestry/certification/MFL.html

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 how to mitigate those dangers.

There are actions that can be taken that will reduce your home or property's exposure to fire such as using fire resistant building materials, incorporating fuel breaks in the landscape, and simply knowing the local burning restrictions.

For more information on fire danger and burning permit restrictions, visit: http://dnr.wi.gov/forestry/fire and click on "View Burning Permit Restrictions." For more information on making your home and property more survivable in the event of a wildfire, visit: http://dnr.wi.gov/forestry/fire/prevention/wui

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 impacting your participation in forest carbon markets at http://www.na.fs.fed.us/ecosystemservices/carbon/

Cooperating Forester Contact Information				
Name DAN L. PETERSON, FORESTER	Company NewPage Corporation			Phone Number 715-422-3450 (Office) 715-459-3649 (Cell)
Address NewPage Corp., Lake States Wood Supply PO Box 8050	City Wisconsin Rapids	State WI	Zip Code 54495-8050	E-mail Dan.Peterson@newpagecorp.com

DNR Forester Contact Information				
Name STEVE GRANT				Phone Number 715-421-7819
Address Wisconsin Dept. of Natural Resources 473 Griffith Ave.	City Wisconsin Rapids	State WI	Zip Code 54494	E-mail Steven.Grant@Wisconsin.gov

The owner hereby agrees to comply with the terms of this forest stewardship management plan and the conditions of subch. VI, Ch. 77, Wis. Stats., and Ch. NR 46, Wis. Adm. Code. The landowner understands that participation in the MFL program will automatically result in membership in the MFL Certified Group, unless an MFL Certified Group Departure Request (form 2450-191) is submitted. The landowner agrees to amendment of the Petition for Designation to conform with the landowner objectives and map as included in this plan.

Landowner Signatures. To be signed by the president of a corporation/company, partners of a partnership, members of a LLC, or by the individual landowners (including life estate holders) as listed on the deed or other instrument of title.		
Name (please print) Peg Geegan – Superintendent of Schools	Signature	Date Signed
Name (please print) Pat Saucermann – Asst. Supt. Of Schools	Signature	Date Signed
Name (please print) Ron Sturomski – Building and Grounds	Signature	Date Signed
Name (please print) Mark A. Zee – School Forest Director	Signature	Date Signed
Name (please print)	Signature	Date Signed
Name (please print)	Signature	Date Signed
Name (please print)	Signature	Date Signed
Name (please print)	Signature	Date Signed

(Attach additional signature pages if needed.)