



WOODLAND STEWARDSHIP PLAN

Marlene Myers Nature Gardens School Forest

Prepared for:

MTS Elementary School (K-6)
and
Turnquist Childcare Center
1800 NE 2nd St.
Minneapolis, MN 55418

Site Coordinators:

Elizabeth Burrows, MTS Elementary School
Leihla Wachlin and Elizabeth Ruzek, Turnquist Childcare Center

Property Location:

T29N, R24W, S10
Hennepin County, MN

Stewardship Acres: .275

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Your stewardship goals for this School Forest:

1. To improve and maintain the ecological health of the School Forest.
2. To utilize the School Forest for environmental education and enhance outdoor learning opportunities.
3. To improve the School Forest experience for students, staff and other visitors.

OVERVIEW OF THE PLAN

Forest management, in general, is providing a forest or woodland the proper care so that it remains healthy and vigorous to provide the amenities (wildlife habitat, clean air and water, recreation) and products (timber, firewood, non-timber) that you want for your school and community. Forest management involves developing a stewardship plan that includes your long-term vision that is achieved through short-term and long-term goals, an inventory and assessment of your forest (what's there and what condition is it in), action plan (remove buckthorn, plant trees), and a monitoring schedule to make sure things are progressing towards your long-term vision. The primary purposes of a stewardship plan for a School Forest are to provide guidance for maintaining a healthy landscape and creating safe and effective outdoor education opportunities.

LANDOWNER MANAGEMENT GOALS AND OBJECTIVES:

Long-term vision (50-100 years): Create and maintain a safe landscape that serves the needs of the school to provide opportunities for outdoor learning and is recognized by the community as an important amenity that contributes to local ecosystems and future generations.

Short-term goals (5-10 years):



- Create a healthy and diverse outdoor classroom through planting native trees and shrubs, removing unhealthy or undesirable species, and promoting wildlife habitat and the health of existing native trees, shrubs and other desirable species.
- Create and maintain unique outdoor learning features throughout the School Forest such as shade trees, fruit trees, native prairie, rain and pollinator-friendly gardens, berry patch and vegetable gardens, and fence vines.
- Maintain and improve the seating, handicapped accessible trail system and observation deck/learning platform in the School Forest.

GENERAL PROPERTY DESCRIPTION:

Marlene Myers Nature Gardens - DNR "Smallest School Forest"

With just 33 trees, the Marlene Myers Nature Gardens make up the smallest School Forest in the State of Minnesota. The City of Minneapolis donated this forest area to A Chance To Grow and certified it for children's education. The space may be small, but it allows the children at Turnquist Childcare Center to learn about a variety of eco systems. The Marlene Myers Nature Gardens feature an outdoor classroom with granite pillars and limestone seats, a rain garden surrounding a deck, fruit trees, native prairie grass, a perennial flower garden, a berry patch and a vegetable garden. Children enter the magical space through a vine-covered trellis. We want to thank Marlene and Jerry Myers for their gift and the individuals, companies, foundations and the City of Minneapolis who helped make this possible for A Chance To Grow and all of the children we serve.

– A Chance To Grow webpage/honorary spaces.

The Marlene Myers Nature Gardens School Forest is located in Northeast Minneapolis in the Bottineau neighborhood of the Northeast Minneapolis Arts District. The School Forest is handicapped accessible with a well-maintained gravel walkway leading through an outdoor classroom with several features (see italicized paragraph above) to a large observation deck enclosed by railing and featuring a picnic table.

The northern boundary of the school property is bounded by 19th Avenue NE, a street that dead ends and becomes a driveway access to the back of the school. Bottineau Field Park, a 7-acre complex, popular as a gathering place for people of all ages, is just north of the school property. The domed Bottineau Fieldhouse is the first of its kind in the Minneapolis Park System. A small pocket of residential homes is nestled next to the school building at the corner of southwest corner 19th Avenue NE and 2nd Street NE.

To the east, the school property is bounded by 2nd Street NE with a residential neighborhood just beyond. The southern boundary is a paved bike trail with a Nice Ride Station with parking and light commercial buildings just beyond. The parking lot for the school follows the south and west sides of the school building. To the west is a Burlington Northern Railroad track that runs adjacent to the school property and also includes a broad greenspace corridor on the west side of the tracks. The School Forest is located between the railroad track and the western parking lot of the school.



The School Forest site is small and is entirely enclosed with a chain-linked fence except for a single access point, a beautiful vine-covered arbor, through which people are transported to this “magical” space. This access point is directly across the parking lot from the back of the school building and from the greenhouse facing the School Forest. This helps control access and may reduce problems such as trash, dog waste, vandalism, and inappropriate use of the School Forest.

INTERACTION WITH NEARBY PROPERTIES:

Adjacent land ownership and the current management practices on those lands should be considered when developing a long-term management plan for the School Forest, including how the public might use the School Forest.

Bottineau Field Park to the north creates a more natural buffer to the school, but is not connected to the actual School Forest except by a very narrow band of greenspace along the railroad track. There are trees and shrubs along this narrow band that help promote connectivity for wildlife but may also serve as a seed source for undesirable trees and shrubs. The park also attracts the public, but this may have little effect on the School Forest.

The residential areas can be a source of lawn chemicals or other pollutants, but the distance is great enough that this should not be of concern. These areas are tree-covered which is good for wildlife, especially birds that may also use the School Forest.

The greater area surrounding the School Forest is primarily residential with light commercial and rail, primarily to the south and west. The Mississippi River is a quarter mile to the west, but not accessible due to the train tracks. The greatest threat to the School Forest from adjacent properties is the potential for run-off from the parking lots that may contain pollutants followed by uninvited use by the public and people jumping the fence along the train tracks.

LANDSCAPE REGION: ANOKA SAND PLAIN

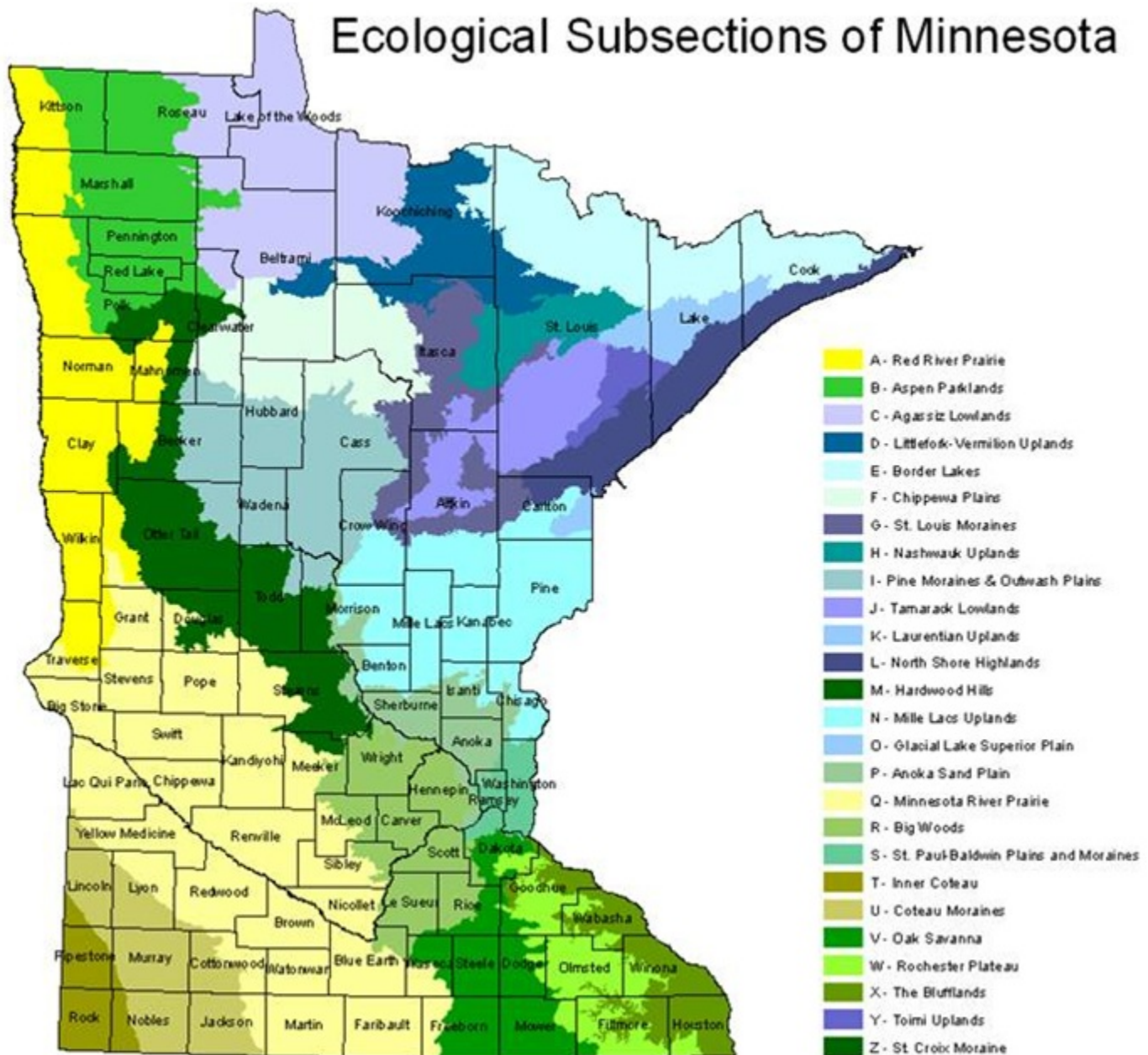
The enclosed Minnesota map shows our ecological landscape regions (or subsections). However, the actual boundaries are not as sharp as the lines might imply. In fact, islands of one landscape region can exist inside another, but the units have basic ecological differences between them. The purpose of providing information about the landscape region and the interaction with nearby properties is to help you assemble a picture of how your land and your activities fit into the larger landscape. Furthermore, the conservation issues of concern are of particular note. It is likely that at least some of your activities will affect these larger-scale issues.

Your School Forest is located in the Anoka Sand Plain Ecological Subsection, but is only .8 miles from the Big Woods and 1.3 miles from the St. Paul Baldwin Plains subsections.

General Description:

The Mississippi River forms the western boundary of the Anoka Sand Plain Subsection. A broad, flat, sandy lake plain dominates the majority of this area and forms the eastern and northern boundaries. Historically, the predominant vegetation was oak savanna and upland prairies surrounded by varied wetland complexes.

This subsection stretches across the northern Twin Cities metropolitan area, including St. Cloud to the west and North Branch to the east, and has the second fastest-growing population in the state. Urban development and agriculture (primarily sod and vegetable crops), which occurs in about one-third of the subsection, has resulted in the loss of prairie and savanna and drainage of peatlands.



Landform:

The major landform is a broad sandy lake plain, which contains small dunes, kettle lakes, and tunnel valleys. Topography is level to gently rolling. There are small inclusions of ground moraine and end moraine (Wright 1972). The other important landform is a series of sandy terraces associated with historic levels of the Mississippi River. Terraces are also associated with major tributaries of the Mississippi.

Bedrock Geology:

Bedrock is locally exposed in the St. Cloud area. Surface glacial deposits are usually less than 200 feet thick (Olsen and Mossler 1982). The subsection is underlain by Cambrian and Ordovician dolomite, sandstone, and shale (Morey 1976).

Soils:

Soils are derived primarily from fine the sands of the sandy plain. Most of these sandy soils are droughty, upland soils (Psammments), but there are organic soils (Hemists) in the ice block depressions and tunnel valleys, and poorly drained prairie soils (Aquolls) along the Mississippi River (Cummins and Grigal 1981). Seventy to eighty% of the soils are excessively well drained sands and another 20% are very poorly drained (Dept. of Soil Science, Univ. of Minnesota 1980b).

Climate:

Total annual precipitation ranges from 27 inches in the west to 29 inches in the east, with growing-season precipitation ranging from 12 to 13 inches. The growing season length ranges from approximately 136 to 156 days, with the longest growing season in the south.

Hydrology:

Terraces associated with the Mississippi River form part of the western boundary of the subsection. Most rivers and streams are tributaries of the Mississippi, although some flow east to the St. Croix River, which eventually flows into the Mississippi. Many rivers, streams, and lakes are located in old glacial tunnel valleys. There are 38 lakes larger than 160 acres in area; about 3% of the subsection's surface is covered by water. Peatlands occupy linear depressions of many tunnel valleys (Albert 1993).

Pre-settlement Vegetation:

The predominant vegetation on the droughty uplands was oak barrens and openings. Characteristic trees included small and misformed bur oak and northern pin oak (Kratz and Jensen 1983). Jack pine was present locally along the northern edge of the subsection. Brushland characterized large areas of the sandplain. Upland prairie formed a narrow band along the Mississippi River, as did areas of floodplain forest (Marschner 1974).

Present Vegetation and Land Use:

Sod and vegetable crops are extensively grown on drained peat and muck areas (Dept. of Soil Science, Univ. of Minnesota 1980). Urban development is rapidly expanding into the subsection. Wheeler et al. (1985) found species associated with oak openings and oak barrens to be abundant in the sandplain although large areas of opening and barrens are uncommon.

Natural Disturbances:

Fire and drought were important factors impacting the vegetation of the sand plain. Drought was found to cause mortality for two of the dominant species of the oak barrens and savannas, northern pin oak and bur oak. During severe periods of drought, vegetation cover was greatly reduced on portions of the sand plain, resulting in eolian erosion and sand dune movement (Keen and Shane 1990).

Conservation Concerns:

Urban development is a major conservation concern throughout this subsection. It is located between the Twin Cities and St. Cloud, three large urban areas. There are many people building homes and businesses throughout the area due to easy access to all three cities.

Wetland conservation is another concern that is tied closely to urban development. Another concern is a problem with oak wilt, a fungal disease that attacks and kills oak trees. There are numerous pockets of trees killed by oak wilt. Federal, state, county, and local governments are working to eradicate or control this fungal disease.

Watershed & Water quality

Your School Forest property is located in the Mississippi River-Twin Cities watershed. The Mississippi River - Twin Cities watershed is 656,990 acres and lies almost entirely in the North Central Hardwoods Forest ecoregion in the Mississippi River Basin. The watershed contains 1,320 stream miles and 380 lakes. More than 1.8 million people live in this watershed, which contains portions of Hennepin, Anoka, Ramsey, Washington, Dakota, Carver, and Sherburne counties, 99 cities, and 14 watershed management organizations (WMOs).

Characteristics

The Mississippi River provides a home for more than 400 different species of wildlife and plays a vital role in the upper Mississippi River valley. The river is also home to more than 100 different species of freshwater fish, which allows for some of the best fishing around, and is a major drinking water supply for the Twin Cities.

The main factors affecting water quality are stormwater management, nutrient management on farmland and residential/commercial areas, sediment and erosion control, protection of shoreland/riparian areas, and invasive species (e.g., carp and curly-leaf pondweed). These land uses and other factors have contributed to the introduction of large amounts of phosphorus, sediment, and bacteria to surface waters and increased nutrient, contaminant, and sedimentation loading from stormwater runoff from development and other non-point sources.

CULTURAL AND NATURAL HERITAGE INFORMATION

The State of Minnesota maintains statewide inventories of documented cultural heritage resources (historic buildings, archaeological sites, cemeteries, and traditional use areas) and natural heritage resources (rare, endangered, or otherwise significant plant and animal species/communities).

An inquiry with the Office of the State Archeologist indicated no recorded cultural features on your property. According to DNR Archeologist Mike Magner: The legal description has been compared with the state archaeological site database maintained by the Minnesota State Historic Preservation Office. No cultural heritage sites have been documented within or adjacent to the parcel.

RARE PLANTS, ANIMALS, AND COMMUNITIES

There are 97 Species in Greatest Conservation Need (SGCN) known or predicted to occur within the Anoka Sand Plain. These SGCN include 39 species that are federal or state endangered, threatened, or of special concern.

A review of the DNR Natural Heritage Information System (NHIS) indicates that the Peregrin falcon (*Falco peregrinus*) and black sandshell mussel (*Ligumia recta*) have been recorded within one mile of the School Forest.

In the past, peregrine falcons in Minnesota nested on cliff ledges along rivers or lakes. Presently, they nest primarily on buildings and bridges in urban settings and use historic eyries on cliffs along Lake Superior and the Mississippi River in southeastern Minnesota. Because peregrine falcons specialize in direct aerial pursuit of avian prey, they prefer open, non-forested areas for hunting. The black sandshell is usually found in the riffle and run areas of medium to large rivers, such as the Mississippi River, in areas dominated by sand or gravel.

Because neither the DNR Natural Heritage Information System (NHIS) nor the databases of the state archeologist are the product of exhaustive inventories, lack of data does not necessarily mean no rare features are present on the School Forest. If you believe your property might have important natural or cultural features, please contact the DNR about a more thorough survey.

DESCRIPTIONS AND RECOMMENDATIONS OF COVER TYPE UNITS:

The following vegetation cover type is associated with the designated School Forest and provides specific recommendations to achieve the management objectives. A vegetation cover type describes the type of dominant vegetation (tree species, grass, shrub, etc.) growing together or other unique vegetation/features in a distinguishable unit. The recommendations listed are not in order of priority, but provide guidance on what might be done to achieve the management objectives that time and resources allow. Over time, additional actions might be needed or preferred to reach the management goals for the School Forest.

Cover Type: Mixed Conifers and Hardwoods

Acres: .275

Cover Type Description: This small School Forest has a good diversity of tree species with about 33 trees on the site. Tree species noted include birch, white pine, quaking aspen, apple, oak, spruce, and maple. Outside the School Forest fence, especially along the railroad, are a variety of trees that influence the School Forest and may or may not be desirable (such as ash due to Emerald as borer) and could seed into the School Forest. The trees appear healthy and will create a more enclosed canopy as they continue to grow which should be a consideration for prairie, edible fruit-bearing plants (apples and raspberries) and vegetable gardens that require sunlight.



Management Objectives:

- Maintain as a healthy mix of conifers and hardwood trees and shrubs to promote species diversity and improved wildlife habitat.
- Improve wildlife habitat.
- Create a safe and engaging outdoor learning environment.

Recommendations:

- Inventory and map the trees (and shrubs) for species, size, and health (includes safety concerns such as dead branches where students and others may gather or work). Your DNR Forester can assist with this.
- Plant (with students) native trees and shrubs to increase diversity and improve wildlife habitat. Consider small trees, such as junberry or mountain ash, in spaces to accent the larger trees. Utilize the DNR Arbor Month seedling program.
- Plant (with students) native trees, shrubs and vines (on the fence) strategically around the perimeter of the School Forest to help create a sound and visual screen. Utilize the DNR Arbor Month seedling program.
- Protect new plantings and natural seedlings from rabbits and mice, if needed.
- Monitor new plantings for survival. Remove competition such as grass.
- Look for, especially at the main entrance and along the fence, and remove invasive species such as buckthorn, garlic mustard, creeping Charlie, and honeysuckle before they become established. Visit the DNR invasive species webpage: <http://www.dnr.state.mn.us/invasives/terrestrial/id.html>.
- Monitor the fence for unintended trees and shrubs that may grow into the fence and cause damage.
- Look for and remove unintended “weed” tree species such as ash, elm and box elder throughout the School Forest.
- Monitor all trees and shrubs routinely for signs of insect and disease or damage (such as wind). Contact your DNR Forester with any concerns.
- Identify and remove hazard trees, branches and plants, as appropriate.
- Use proper pruning techniques and tools to routinely prune trees and shrubs to keep the trail, seating, garden and other areas clear of branches that may pose a safety hazard.
- Use proper pruning techniques and tools to routinely prune trees and shrubs to encourage proper growth, form and healthy branching as well as manage growth to reduce conflicts with other features of the School Forest.
- Evaluate the trail, deck, seating and other constructed features to assess maintenance and/or repair needs.
- Install additional wildlife features such as bird, bat and butterfly houses or place natural material, such as a log, small brush pile, or layered flat stones (with crevices) for a variety of wildlife species.

Education:

- Teachers, assistants, administrators, grounds staff, parents, or volunteers participate in a free “[Teaching in Your School Forest](#)” site-specific workshop brought to you by the DNR School Forest Program. This training may include Project Learning Tree activities that:
 - involve students in inventorying and mapping the tree species. Project Learning Tree Activities #64 (Looking at Leaves) and #68 (Name that Tree).
 - use the 5 senses to explore and respond to the natural and built features of the School Forest. Project Learning Tree activities #1, #2, #3, and #4.
 - teach how your School Forest fits in the greater community. Project Learning Tree Activity #74 (People, Places, Things).
- Involve students in caring for the School Forest such as pulling weeds, clearing branches and leaves, planting trees/plants, watering new plantings, spreading mulch, cleaning bird houses, creating habitat (stick pile, lint for bird nests), etc.
- Tag or sign all trees and shrubs with species identification and include additional characteristics such as leaf shape, bark color, evergreen or deciduous - as appropriate for the age of the students.
- Teach about the different kinds of trees in your School Forest and what benefits they provide.
- Identify the wildlife (in the soil, under rocks/logs, in the grass, in the trees) that use the School Forest.

Woodland Stewardship Book References:

Chapter	Title	Page
Chapter 2	Conducting a Woodland Inventory	9
Chapter 3	How Trees and Woodlands Grow	25

Chapter	Title	Page
Chapter 4	Regenerating Woodland Stands - Planting	38
Chapter 5	Woodland Improvement Practices - Pruning	51
Chapter 6	Managing Important Forest Types	55
Chapter 7	Forest Health	91
Chapter 11	Wildlife and Forest Management	127
Chapter 12	Noise and Visual Quality	139
Chapter 13	Recreational Trail Design	147

GENERAL WILDLIFE HABITAT RECOMMENDATIONS

Objective: Improve and maximize habitat for a variety of wildlife species throughout the School Forest.

- Install bat boxes in appropriate locations. to promote beneficial mosquito-eating bats on the School Forest and school property.
- Mast-producing (fruits, nuts, seeds) trees and shrubs attract many different species of wildlife. Plant only native species that are locally adapted to the soils and climate (as opposed to exotic, non-native species). Birds particularly favor shrubs and small trees like highbush cranberry (*Viburnum trilobum*), juneberry (*Amelanchier* sp.), elderberry (*Sambucus canadensis*), cherries (*Prunus* sp.), dogwood (*Cornus* sp.), hazelnut (*Corylus americana*), mountain ash (*Sorbus americana*), American plum (*Prunus americana*), hawthorn (*Crateagus* sp.) and nannyberry (*Viburnum lentago*). Desirable hardwood trees include oaks (*Quercus* sp.), hickories (*Carya* sp.), and basswood (*Tilia americana*). Plant species appropriate for your landscape area.
- A diversity of forest types and age classes benefits a wide variety of species of wildlife. Thinning crowded trees creates more structural diversity (tree heights) by having a variety of ages in the forest. Greater structural diversity provides habitat for more species of wildlife. Retain old or over-mature trees (in groups or individuals) that are utilized by certain species of wildlife. Older trees contain cavities that are utilized by a myriad of wildlife. Also preserve younger, brushy areas, especially at the edge of the forest, that provide habitat for a different suite of species, like common yellowthroat, flycatchers, and American woodcock.
- Create brush piles and coarse woody debris (such as logs and large branches) when possible. Logs and rotting material on the forest floor provide important micro-habitat for mosses, lichens, fungi, and insects, as well as cover for small mammals, reptiles, and amphibians. Many species of wildlife utilize brush piles for cover, including rabbits, chipmunks, woodchucks, coyotes, and songbirds. Brush piles can be an easy way to improve a stand's structural diversity.
- Snags and Den Trees - Dead and dying trees are very important for woodpeckers, chickadees, nuthatches, bluebirds, squirrels, bats, wood ducks, furbearers, and many other animals. Leave most dead trees or cavity trees standing in situations where there is no threat to human safety or spread of insects or diseases. Also, consider reserving some live large-diameter trees for future snags (cottonwood, for example). You can create snags by girdling (cutting through the bark all the way around the tree) undesirable trees.
- Install nest and shelter boxes for bats, terrestrial birds, waterfowl, butterflies and pollinators. Maintain them annually.

SCHOOL FOREST COMMITTEE OBJECTIVES

The preceding current conditions and management objectives sections of the Woodland Stewardship Plan provide a current picture, as well as a vision for the future, of the Marlene Myers Nature Gardens School Forest. This section outlines the steps necessary to bring the School Forest from the current picture to the desired future state of the site.

- Annually appoint a School Forest Management Committee to guide the development and continued visioning of the School Forest.

- Review the goals of the Woodland Stewardship Plan annually to update completed activities, current conditions, redefine goals and objectives, identify new opportunities and activities, and review and update the “Future Stewardship Projects” timeline as needed.
- Using the management timeline, develop an annual plan of work for the School Forest, which outlines the steps that will be taken during the current year to meet one or more of the objectives outlined in the Woodland Stewardship Plan.
- At the completion of the year, submit the requested annual report to the School Forest staff that highlights the activities, the steps taken, and objectives addressed during the year. This report should also document any unexpected outcomes or difficulties in meeting the stated objectives.

ADDITIONAL INFORMATION

Below is additional information for some of the recommendations in your plan. This is not all inclusive but provides some things to consider as you proceed to implement your management plan and outdoor education activities.

ADA Requirements:

Consider ADA requirements when developing trails or other areas to be accessed for outdoor learning purposes.

BioBlitz:

A BioBlitz is an activity in which teams of volunteer experts, families, students, teachers, and other community members work together to find and identify as many species of plants, animals, microbes, fungi, and other organisms as possible in your School Forest. Consider hosting a BioBlitz to learn more about what is there and record changes over time if you do this on an annual basis.



Hawthorn Rust

A fungal disease was observed on the hawthorn. According to the University of MN: “Gymnosporangium rust fungi cause unique and fascinating diseases that require two different living plant hosts in order to complete their life cycle. Although the bright red and orange leaf spots and orange gelatinous galls symptomatic of these diseases are quick to draw attention, the disease rarely causes serious damage to its hosts and often does not require management in a home landscape. A few highly susceptible plants may suffer shoot death or defoliation from leaf spots.” This is not something to be concerned about, but may be a fascinating topic to discuss with students and staff.

Hazard Trees:

Reference the USDA Forest Service publication “How to Recognize Hazardous Defects in Trees” at <http://www.treesaregood.com/treecare/hazards.aspx>. A “hazard tree” is a tree with structural defects likely to cause failure of all or part of the, which could strike a “target” that can be a place where people (students) gather such as an interpretive sign along a trail, designated learning area, garden or a structure such as a building, deck or fence for example. Monitor your trees and ask for assistance from your DNR Forester if you have any concerns.

Invasive Species Management:

Below is a list of invasive species to keep an eye out for. Visit the MN DNR “Guide to Terrestrial Invasives” webpage for information on identification and management of these and other possible species:

<http://www.dnr.state.mn.us/invasives/terrestrial/id.html>.

Amur Maple:

Amur maple is a small tree up to 20' high with a broad crown. The leaves are opposite, longer than wide and have three shallow lobes and double toothed edges, turning a brilliant red in fall making it easy to identify. It displaces native shrubs and understory trees in open woods, and shades out native grasses and herbaceous plants in savanna habitat. It is a prolific seed producer and resprouts easily from the cut stump.

For more information on Amur maple, reference the MN DNR webpage:

<http://www.dnr.state.mn.us/invasives/terrestrialplants/woody/amurmaple.html>.

Buckthorn:

Buckthorn removal projects have occurred in the School Forest and should continue to be implemented as time and resources allow. The first priority is to identify and remove female seed-producing plants. The second priority is to monitor previous removal sites for sprouting and/or seeding and continue to remove any regeneration. When removing buckthorn, make sure that no other invasive species are overlooked and left to further invade the area once the buckthorn is removed.

Reference the MN DNR publication “Buckthorn: What You Should Know. What You Should Do” at

<http://www.dnr.state.mn.us/invasives/terrestrialplants/woody/buckthorn/index.html> for more information on best methods to control and manage buckthorn as well as planting native replacement species. Hard copies can be obtained through the DNR School Forest Program.

NOTE: Buckthorn is the only green-leafed deciduous shrub/tree in the forest in November. Late-fall into early winter is an easy time to identify and treat/remove.

Emerald Ash Borer (EAB):

Emerald ash borer is a fairly new and serious pest to Minnesota’s ash trees having been found in St. Paul in 2009 and has been continually spreading since then. Ash is a very common species planted on school grounds and in residential areas and is also common in native habitats.

Garlic Mustard:

Garlic mustard is becoming more common throughout Minnesota. Identifying and removing garlic mustard is important to contain its spread. One pathway the tiny seeds take is through soil attached to footwear.

Garlic mustard is a significant ecological threat by spreading into high quality forests and woodlands, upland and floodplain forests, not just into disturbed areas. Invaded sites undergo a decline in native herbaceous cover within 10 years. Garlic mustard alters habitat suitability for native insects and thereby birds and mammals.

For more information on garlic mustard, reference the MN DNR webpage:

<http://www.dnr.state.mn.us/invasives/terrestrialplants/herbaceous/garlicmustard.html> for information on best methods to control and manage garlic mustard as well as planting native replacement species.

Exotic Honeysuckles:

Exotic honeysuckles replace native forest shrubs and herbaceous plants by their invasive nature and early leaf-out. They shade out herbaceous ground cover and deplete soil moisture. The seeds are readily dispersed by birds, making them very invasive. Some research suggests that the plant inhibits the growth of other plants in its vicinity. These species were introduced to North America as ornamental shrubs and beneficial to wildlife.

For more information on exotic honeysuckles, reference the MN DNR webpage:

<http://www.dnr.state.mn.us/invasives/terrestrialplants/woody/exotichoneysuckles.html>

RESOURCES AND PARTNERS:

The following list is not all inclusive, but lists some of the many resources and partners that may be able to provide technical or financial assistance, volunteer assistance, or information to help you reach your management goals and educational needs.

Primary:

- Minnesota Department of Natural Resources (DNR): www.mndnr.gov
 - DNR School Forest Program
 - Karen Harrison, Karen.Harrison@state.mn.us, 651-259-5903
 - <http://www.dnr.state.mn.us/schoolforest/sfcontact.html>
 - DNR Forestry, Metro Region
 - Mike Reinikainen, Mike.Reinikainen@state.mn.us, 651-
 - <http://www.dnr.state.mn.us/forestry/index.html>
 - DNR Community Forestry: Information on tree care, proper pruning, planting, etc.
 - <http://www.dnr.state.mn.us/forestry/urban/index.html>

Additional:

Boy and Girl Scouts or other youth programs with a volunteer component

Civic organizations

City of Minneapolis

Conservation Corps of MN

Local businesses

Parents

Park Board

UMN Master Volunteer Programs: Master Gardener, Master Naturalist, Tree Care Advocate, Master Woodland Owner
University/Colleges

The table below is intended to serve as a helpful guide for your activities over the 10-year duration of this plan. Please be sure to track your accomplishments, whatever they are, so you can report them to us in your Annual School Forest Report at the end of the school year.

FUTURE FOREST STEWARDSHIP PROJECTS

Scheduled Year	Project	Month/Year Completed
Ongoing	Monitor for invasive species and remove.	
Ongoing	Monitor all trees for insect and disease problems. Contact your DNR Forester with concerns.	
Ongoing	Identify and remove hazard trees and plants, as appropriate.	
Ongoing	Maintain the trail.	
Ongoing	Monitor new plantings for survival. Remove competition.	
Ongoing	Water new plantings for 3 years to get established.	
Ongoing	Water all trees (starting with the smallest) if serious drought conditions.	
2018	Inventory and map the trees (and shrubs). Contact your DNR Forester for assistance. Note and remove trees growing into the fence.	
2018	Evaluate the trail, deck, seating, bird houses and other constructed features to assess maintenance and/or repair needs.	
2019	Plant trees and shrubs. Use DNR Arbor Month seedlings.	
2020	Check new plantings for survival.	
2020	Check fence perimeter for weed trees that might cause damage.	
2021	Evaluate the trail, deck, seating, bird houses and other constructed features to assess maintenance and/or repair needs.	
2022	Install additional wildlife features such as bird, bat and butterfly houses.	
2023	Check fence perimeter for weed trees that might cause damage.	
2024	Evaluate the trail, deck, seating, bird houses and other constructed features to assess maintenance and/or repair needs.	
2024	Check fence perimeter for weed trees that might cause damage.	
2025	Prune trees for health and form.	
2026	Check fence perimeter for weed trees that might cause damage.	
2026	Plant trees and shrubs. Use DNR Arbor Month seedlings.	
2027	Check new plantings for survival.	
2027	Evaluate the trail, deck, seating, bird houses and other constructed features to assess maintenance and/or repair needs.	