WOODLAND STEWARDSHIP PLAN

Cook County School District 166 School Forest
Attn. April Wahlstrom
101West 5th St.
Grand Marais, MN 55604
(218) 370-8846

Section 21, T61N-R1E
Cook County, Minnesota

Total Parcel Acres: 27
Stewardship Acres: 27

Prepared by:
Thor Pakosz – PFM Program Forester
MN DNR – Forestry
4805 Rice Lake Rd
Duluth, MN 55603
(218) 723-4791

30 May 2018

Your Forest Stewardship goals for this School Forest property:

1. Provide an outdoor learning environment for students in the Cook County School District.
2. Improve student recreational opportunities.
3. Enhance wildlife habitat and plant and animal species diversity.
4. Create a setting that provides opportunities to learn about and protect watersheds, wetlands and riparian environments.
5. Prevent soil erosion and improve water quality.
6. Enhance opportunities for cultivating and collecting wild edibles such as berries, roots, syrup, and other non-timber forest products.
7. Develop pollinator habitat for possible future beekeeping.

Landscape Setting

NORTH SHORE HIGHLANDS SUBSECTION

DISCUSSION
The appended map on page 17 shows the approximate boundaries of the ecological subsections (regions) in Minnesota, which are based on a combination of climate, topography, hydrology and vegetation. Your School Forest falls within the North Shore Highlands Subsection, which parallels the western edge of Lake Superior, extending about 20-30 miles inland on the Highland Moraine. The land is gently rolling to steep, typically with either shallow or very rocky soils. The area is marked by a number of short streams that rush toward Lake Superior, where they often end in a waterfall near the shoreline.

Information about your landscape region is provided to help you assemble a picture of how your land and your activities fit into the larger landscape context, and attendant conservation issues.

LANDFORM AND GEOLOGY
Lake Superior began as a continental rift zone, but it has been sculpted by glaciers. This subsection is composed largely of glacial moraines (till) left behind by the most recent glacial advance, the Wisconsin Glaciation, which retreated about 10,000 years ago. Ancient Precambrian bedrock is exposed at or near the surface in large areas, and accounts for much of the rugged topography that dominates the North Shore.

The soils have mostly developed from the rocky, red tills left behind by the Superior Lobe of the last glaciation, and are predominantly loams and sandy loams (especially in the eastern reaches).

CLIMATE
Lake Superior moderates the climate throughout the year, acting as an air conditioner in the summer and a heat sink in the winter. Total annual precipitation is about 29 inches. Growing season ranges from approximately 121 to 135 days, with the longest growing season along the shore of Lake Superior. The growing season on Lake Superior is about 10 days longer, compared to 6 miles inland.

HYDROLOGY
Lakes make up about 2-3 percent of the subsection – there are 20 lakes larger than 160 acres in size. 117 of these are located on the Highland Moraine. Numerous short streams,
10-15 miles long, lead directly from the highland to the shore of Lake Superior. The abundance of lakes and scenic streams has made the North Shore a focus for the establishment of state parks and recreation areas.

WATERSHEDS

The School Forest is located in the Major watershed of Lake Superior North (draining eastward through the St Lawrence Seaway to the Atlantic) with the minor watershed being the unnamed creek (or drainage ditch), which flows east into a stream that drains into Lake Superior.

PRE-SETTLEMENT VEGETATION

Regionally, white pine-red pine forest was most common on thin soil over bedrock, concentrated on the ridges. In the northern half of the subsection, aspen-birch was dominant, with very little white-red pine forest or mixed hardwood-pine forest. Mixed hardwood-conifer forest persisted in area within 6-10 miles of the shoreline on the ridge tops. Along the shore of Lake Superior, local climate favors forests dominated by sugar maple, with smaller components of white pine, white cedar and yellow birch.

PRESENT VEGETATION AND LAND USE

Following logging, the extensive white pine-red pine forests have been replaced by forests of trembling aspen-paper birch, although federal Civilian Conservation Corps planting programs in the 1930s established thousands of acres of pine and spruce that are now mature.

Forestry, recreation and tourism dominate land use in this region, which remains largely forested. Its position between the Mesabi Iron Range and the Shore has also influenced its economic development. While there are no mines within the subsection, ports were built in Duluth, Two Harbors, Silver Bay and Taconite Harbor to transport iron ore from the Iron Range to steel mills in Indiana and Ohio.

NATURAL DISTURBANCE

Fire was historically an important disturbance that controlled the composition of upland conifer forest types in this region. It is thought that severe (stand-destroying) fires occurred approximately every 260 years in this zone. The prevalence of pioneer aspen-birch stands is likely a response to fire, as well as to the removal of conifer seed sources.

CONSERVATION CONCERNS

The transitional boreal forest and lakeshore environments unique to the Northern Superior Uplands are threatened by forest fragmentation, invasive species, and climate change, with its concomitant increases in diseases and pests. Creating and maintaining a resilient and productive forest that continues to provide a full range of economic, ecological, hydrological and spiritual benefits is an important challenge of our time.

The Minnesota DNR has documented 84 species in Greatest Conservation Need (SGCN) in the North Shore Highlands. Of these, 25 are classified as endangered, threatened or of special concern at either the state or federal level. Some of those species are discussed in more detail in the next section (Property Description).

Table 1. SGCN by Taxonomic group (Source: MN DNR, 2006. *Tomorrow's Habitat for the Wild and Rare: an Action Plan for Minnesota Wildlife: Minnesota's Comprehensive Wildlife Conservation Strategy*.)

Taxon	Num SGCN	Percentage of all SGCN	Example species
Amphibians	2	33	Eastern red-backed salamander
Birds	50	51	Black-throated blue warbler
Fish	8	17	Lake chub
Insects	9	16	Extra-striped snaketail dragonfly
Mammals	10	45	Canada lynx
Mollusks	2	5	Black sandshell
Reptiles	3	18	Wood turtle

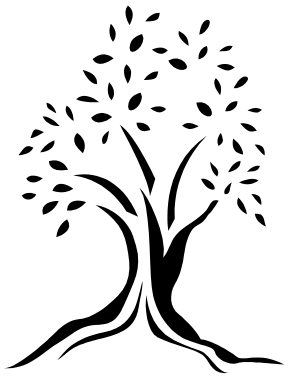
RIPARIAN ZONES
The nature of the land immediately adjacent a lake or stream determines the characteristics of its water body. Lake Superior stays clear and clean to the extent that the many steep and rapid streams that pour into it remain free of sediment and pollution. As stewards of a lake-connected drainage, it is an important responsibility to keep your stream reach clean and healthy.

ARCHAEOLOGICAL, CULTURAL AND HISTORIC SITES
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).

According to DNR Archeologist Mike Magner: The legal description has been compared with the state archaeological site database maintained by the Office of the State Archaeologist. No cultural heritage sites have been documented within the parcel.

Property Description

STEWARDSHIP ACRES: 27
TOTAL ACRES: 27



GENERAL PROPERTY DESCRIPTION:
The School Forest acreage, owned by the Independent School District 166, is sandwiched between the Cook County School campus on the south and the Gunflint Trail (Cook County CSAH 12) on the north, with some sparse residential and business development along the Gunflint. Land immediately to the west and east of the school is largely owned by the City of Grand Marais or the County. A map of the School Forest property is located on page 18.

The North Shore Snowmobile trail skirts the eastern edge of the School Forest before turning northward, providing easy access to a parcel of State forest land, which is traversed by the Superior Hiking Trail, and may provide outdoor education opportunities in addition to those discussed below.

The School Forest property itself comprises two main forest types: a maturing conifer/hardwood mix on the east half, and a young brushy stand on the west half. Limited or compromised drainage will be a dominant factor in making management decisions.

A small creek or channel, which was likely dug to drain the surrounding area, runs eastward along half of the School Forest, connecting to a small unnamed stream which drains directly into Lake Superior. This connection to the Lake highlights the importance of good management to protect water quality in your stream.

INTERACTION WITH NEARBY PROPERTIES:
This land adjoins the Cook County School campus, with the Gunflint Trail and additional vacant school district property to the north. Its proximity to the school makes it ideal for student access and activity scheduling. There are few adjacent private residences to cause concern with respect to management activities.

NATURAL HERITAGE
The Northern Superior Uplands provide habitat for a large number of rare species due to their unique climatic and geologic features (see Table 1, page 4).

Rare animals include the Canada Lynx, the Black-throated blue warbler, the Wood turtle, and the Eastern Red-backed salamander.

Rare plants of the area are numerous, especially near and on the shores of Lake Superior, and include the Beach Grass, Arnica, Marsh Reedgrass, Michaux's Sedge, Black Hawthorn, Norwegian Draba, Neat Spike-rush, Small-flowered Woodrush, Braun's Holly Fern, Knotty Pearlwort, Encrusted Saxifrage, Northern Spikemoss, Clustered Bur weed, Small False Asphodel, Alpine Nilberry, Smooth Woodsia, Rocky Mountain Woodsia, and several species of lichens. See the MN DNR Rare Species Guide (http://www.dnr.state.mn.us/rsg/index.html) for further information.

Plant species of particular concern that might be observed in or near the School Forest area include:

- Hudson Bay Eyebright (Euphrasia hudsoniana *var* ramosior): a small flower of bedrock shores, cliffs and cliff tops.

- Shortleaf Chalk Moss (Tortella inclinata): an endangered moss endemic to the Great Lakes.

- Elegant groundsel (Packera indecora): a perennial herb related to ragwort, listed as endangered in MN. Only one population is thought to still occur, along a North Shore stream.

- Cuckoo flower (Cardamine pratensis): a weak-stemmed flower of heavily shaded, wet woodlands. It was observed in 2017 in the road right of way along the north edge of the School Forest.

LOCAL CONSERVATION CONCERNS

Because this School Forest is located in an urban area, disturbance and invasive species are major concerns. These can be addressed through careful management of the area to channel foot traffic along defined trails, prevent ATV access, and educate users about how invasive species spread in order to avoid further introduction of invasive plants. An active invasive species removal program, combined with native species planting, will help to gradually restore the disturbed portions of the School Forest.

SOILS

The School Forest and the Cook County School campus are located in an area of fairly subdued topography, dropping gently through town toward the Lake. Just to the north, the land rises quite steeply.

The relatively level topography determines the alluvial (depositional) nature of the local soils. The two stands delineated in the Forest are also defined by their soils. Stand 1 (to the east) is largely underlain by Pequaywan fine sandy loams, which occur over gravelly outwash. The permanent water table is at least 2' deep, and the soils are classified as moderately well drained. Stand 2 is underlain by the Eldes colluvial complex, which forms on flat moraine areas. The texture is fine sandy loam over loams, and the permanent water table is at about 4 inches. This area is poorly drained.

Soil erosion is a potential problem along the steep banks bordering the stream that drains the south edge of the Forest. Avoiding overuse and restoring the riparian zone with native shrubs will help to ensure long-term stability and keep sediment out of the stream.

When considering vegetation management and tree planting, it is important to keep the soil conditions in mind. While Stand 1 can support a wide range of tree species, the high water table in Stand 2 limits planting choices to flood-tolerant species, such as yellow birch, balsam poplar or willows.

DESCRIPTION OF STANDS

In this section of your Woodland Stewardship Plan, each stand (cover type) will be described in more detail. Information for each stand includes: a stand objective(s) and activities to achieve the objective(s); at least one alternative objective and activity. On page 12 there is a suggested timeline for completing specific projects.

Stand	Type	Acres	Approx. Age
1	Upland White Cedar	18	50+
2	Lowland brush	9	10-20

The table below refers to the chapters in the *Woodland Stewardship: A Practical Guide for Midwestern Landowners* book included in your Woodland Stewardship Plan 3-ring binder. This is an excellent resource to be used for managing your School Forest and teaching students about forest management and related concepts.

Woodland Stewardship Book References:

Chapter	Title	Page
Chapter 1	Preparing a Woodland Stewardship Plan	1
Chapter 2	Conducting a Woodland Inventory	9
Chapter 3	How Trees and Woodlands Grow	25
Chapter 4	Regenerating Woodland Stands	33
Chapter 5	Woodland Improvement Practices	45
Chapter 6	Managing Important Forest Types	55
Chapter 7	Forest Health	91
Chapter 8	Marketing Timber	103
Chapter 9	Harvesting Timber	115
Chapter 10	Management and Marketing Non-timber Forest Products	123
Chapter 11	Wildlife and Forest Management	127
Chapter 12	Noise and Visual Quality	139
Chapter 13	Recreational Trail Design	147
Chapter 14	Financial Considerations	175

Upland White Cedar

Northern white cedar leaves and cones
Photo © Mel Baughman

Stand Number: 1
Stand Acres: 18

Species	Ave. Diameter	Approx. Cords/Ac.	Basal Area/Ac
Balsam fir	7	7.2	56
Aspen	11	4.6	32
White spruce	9	2.2	12
Paper birch	13	3.6	18
Red pine	11	2	8
White cedar	12	0.8	6
Balm of Gilead	n/a	0	8
Total		**20.4**	**140**

Stand Description
This mixed stand was classified as Upland White Cedar forest type even though it is not currently dominated by cedar. This forest type can include "sites dominated by quaking aspen, paper birch, and balsam fir that have (or had) white cedar as a component"[1]. This stand includes paper birch, white spruce and red pine (likely planted) and a significant amount of young trees in the understory, particularly balsam fir, balsam poplar (Balm of Gilead), aspen and (some) white cedar. The shrub layer includes tag alder, chokecherry, and mountain maple (caveat: not all shrubs were identified due to leafless condition). The topography slopes gently to the southeast.

Stand Objectives
1. Enhance features that provide outdoor learning and recreation opportunities.
2. Improve stand diversity and quality through planting.
3. Improve stream bank stability and vegetation quality along the creek.

Recommended Activities to Achieve Stand Objective:
1. Mark existing trails and use signage &/or barriers to discourage informal trail creation.
2. Create interpretive signage to highlight ecological and botanical features of the forest.

[1] MN, Dept Natural Resources. 2003. Field Guide to the Native Plant Communities of Minnesota: the Laurentian Mixed Forest Province. Ecological Land Classification Program, MN County Biological Survey, and Natural Heritage and Nongame Research Program. MNDNR St Paul, MN.

3. Create an experimental forest, for example, in the red pine area to explore selective removal of the pines (which aren't really thriving) and replacement with more site-appropriate species such as white pine, white spruce, or paper birch.
4. Protect cedar saplings from deer browse.
5. Treat invasive plants encroaching along the drainage ditch/creek.
6. Consider planting native shrubs to stabilize the banks.
7. Contact the Cook County Soil and Water Conservation District for stream bank stabilization assistance.

Alternative Stand Objectives:

1. Leave as-is, protecting existing features but not engaging in planting or active management.
2. Set up a more comprehensive timber sale concentrated in the mature timber on the south half of the stand. Plan natural regeneration and supplemental planting.

Lowland Brush

Photo: http://michiganflora.net

Stand Number: 2
Stand Acres: 9

Species	Ave. Diameter	Approx. Cords/Ac.	Basal Area/Ac
Balsam fir	5	1	10
Paper birch	6	0.7	10
Black ash	3	0	3
TOTAL		**1.7**	**23**

Stand Description

The stand is dominated by tall clumps of tag alder, mountain maple, and willow, as well as scattered chokecherry, highbush cranberry and red-osier dogwood. There is some regeneration of young balsam fir, paper birch and black ash, but heavy shading from the alder may be inhibiting new seedling establishment. Poor drainage is also a factor.

Many bird and small mammal species thrive in shrub cover types like this with no large trees. Some forest restoration may be possible and even desirable here, however, extensive site preparation would be required to knock down the alder, probably involving (at minimum) cutting and stump treatments to

prevent resprout or suckering. Alternatively, planting patches of yellow birch and white cedar in existing openings (with fencing) may be feasible and less labor-intensive.

Stand Objectives

1. Make this stand more user-friendly and available as an outdoor learning environment.
2. Improve the long-term vigor and resilience of the stand through treatments and planting. Use as an ecological laboratory.
3. Improve the diversity and aesthetic qualities of the stand by introducing longer-lived trees or creating openings.

Recommended Activities to Achieve Stand Objective

1. Treat this as a learning environment. Construct trails, boardwalks, benches or platforms through the stand to improve access (see: *Possible CCM Projects* addendum). Have students map and create a plan to protect the wettest parts of the area to avoid damaging them.
2. Conduct a bird survey or BioBlitz to increase awareness of how wildlife uses this type of environment as compared to the mature forest.
3. Undertake limited site prep followed by tree planting to assess how trees will fare in the absence of competition. Release existing seedlings (by removing brush) to achieve the same objective (see *Possible CCM Projects* addendum).

Alternative Stand Objectives:

1. Shear the entire stand and restart it with planting (the economics of such an approach are unfavorable unless it is done in cooperation with a wildlife organization such as the American Bird Conservancy, which seeks to create young habitat for specific species.)
2. Leave it to develop "as is."

Summary

RECOMMENDED ACTIVITIES TO ACHIEVE OBJECTIVES

1. Formalize the trail system for the property to avoid developing a network of informal, unmonitored trails which can be abused and cause damage to vegetation and create soil erosion. Trail reinforcement and even boardwalks may be needed in wet areas. Avoid developing areas of excessive use around the creek.
2. Continue to pursue an active program of invasive plant identification, removal and prevention including a program of education in invasive species recognition. Adopt the concepts of the Play.Clean.Go initiative to prevent the spread of invasive species as you enter and use this School Forest. Consider installing a boot brush station at entrance points.
3. Consider whether limited or partial timber harvesting can improve the long-term condition of your forest, in particular the removal and replacement of planted red pine. Contact your DNR Forester for assistance to prepare and supervise a timber sale.

ACTIVITY SCHEDULE/PLAN SUMMARY

Year	Cover Type # and Map Label	Acres	Project Prescription
2018	All	27	Improve existing trail system, improve access to unique features, and create classroom areas where needed and appropriate for outdoor learning. Apply for the DNR CCM grant.
2018	1	1	Arbor Month Planting
2018	1	1	Invasive species treatment
2019	2	1	Arbor Month Planting
2020	1	1	Arbor Month Planting
2020	1	1	Create or install wildlife habitat features such as bird, bat, and butterfly houses as desired.
2020	1	4	Red pine removal, consult your DNR Forester.
On-going / Annual	All	2018-2028	Monitor for regeneration and planting success, especially following a harvest.
On-going / Annual	All, especially along the edges	2018-2028	Monitor for buckthorn and other invasive species, plan control as appropriate. Consider installing a boot brush station at entrance points.
On-going / Annual	All	2018-2028	Monitor for forest insect and disease problems. Contact your DNR Forester with concerns.
On-going / Annual	Outdoor Learning Areas and Trail System	2018-2028	General monitoring & maintenance: clearing & leveling, hazard trees, hazardous plants, tree pruning, etc.

Additional Information

EDUCATIONAL OPPORTUNITIES

- Learn about natural succession in forests.
- Plant native shrubs in the understory to provide wildlife food, such as high-bush cranberry, chokecherry, nannyberry, etc.
- Increase awareness of the problems stemming from invasive species, and the difference between native and non-native invasive species by visiting the MN DNR *Invasive Species* webpage (http://www.dnr.state.mn.us/invasives/index.html).
- Establish inventory plots in a few spots throughout your School Forest and identify what trees, shrubs and plants are there. Discuss how each plot is similar or different from the other. Keep records for future classes to compare.
- Look for snag (hollow) trees used by wildlife for food and shelter and monitor for wildlife use.
- Identify and label trees and discuss their key characteristics. Visit the MN DNR *Minnesota Native Trees* webpage: http://www.dnr.state.mn.us/trees_shrubs/index.html).
- Plant identification.
- Increase awareness of everyday uses of trees, tree fiber, and other forest products ("Teachers Guide to Arbor Month", Project Learning Tree, etc.).
- Discuss the role of Minnesota's forest industry in forest land management.
- See attached list of educational resources (Appendix A on page 22).

GENERAL WILDLIFE HABITAT RECOMMENDATIONS

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

- 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). Plant species appropriate for your landscape area.
- A diversity of forest types and age classes benefits a wide variety of wildlife species. 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 and 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.

SUPPLEMENTAL 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.

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.

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 major component of some areas

Minnesota's native forest habitats, especially the black ash swamps in the central and northern part of the state and is a very common species planted on school grounds, in communities and in residential areas.

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

SCHOOL FOREST COMMITTEE:

The preceding current conditions and management objectives sections of this Woodland Stewardship Plan provide a current picture, as well as a vision for the future, of the Cook County School District166 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 this Woodland Stewardship Plan annually to update completed steps, current conditions, redefine desired future conditions, address new opportunities and edit the management 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 the current year to meet one or more of the objectives outlined in the Woodland Stewardship Plan.
- At the completion of the year, submit a 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.

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. Specific contact information was not readily available for all, but can be found online.

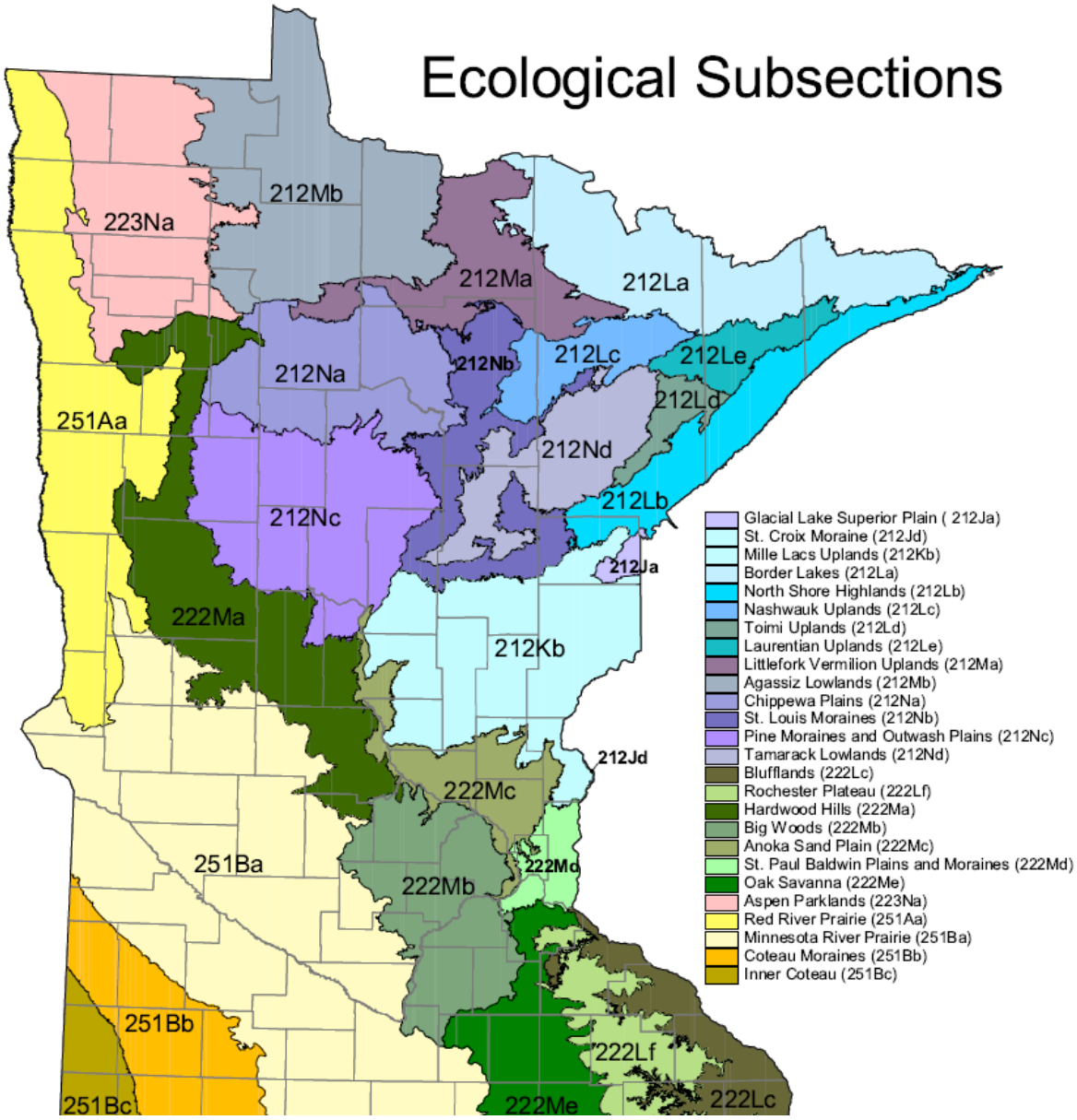
Primary:
Minnesota Department of Natural Resources (DNR):

- School Forest Program:
  - Karen Harrison, Coordinator, Karen.harrison@state.mn.us, 651-259-5903
  - http://www.dnr.state.mn.us/schoolforest/sfcontact.html
- MN DNR Forester assigned to your School Forest:
  - Thor Pakosz, thor.pakosz@state.mn.us, 218-723-4791.
- MN DNR Outreach and Education Program:
  - Laura Duffey, Project Learning Tree Coordinator, St. Paul, Laura.duffey@state.mn.us, 651-259-5263.
  - Karen Updegraff, Finland, Karen.updegraff@state.mn.us, 218-353-8843.
- MN DNR website at www.mndnr.gov.

School Staff

Cook County Soil and Water Conservation District (Cook SWCD), Cook County Courthouse, 411 W. 2nd Street, Grand Marais, 218-387-3647

Additional Support and Assistance:
Boy and Girl Scouts
Area University/Colleges
Natural Resource Conservation Service
Parents and Community Volunteers
Conservation Corps Minnesota
UMN Master Volunteer Programs
Other natural resource professionals or organizations in the area



Ecological Subsections of Minnesota (MN DNR, 1999. *Ecological Land Classification Program*)

School forest area with stands delineated.

Stand summary for School Forest

Stand	Cover Type	Acres
1	Upland White Cedar	18
2	Lowland Brush	9

Appendix A

MN DNR Natural Resources Education Programs and Websites:

- Becoming an Outdoors Woman (http://www.dnr.state.mn.us/education/bow/index.html): activities and events to provide women with outdoors and hunting skills.
- Fishing in the Neighborhood (http://www.dnr.state.mn.us/fishing/fin/index.html): a program aimed at increasing angling opportunities, public awareness and environmental stewardship within the 7-county metro region.
- Forestry Education (http://www.dnr.state.mn.us/forestry/education/index.html): the starting point for navigating through all of the DNR's forestry education programs and opportunities, such as:
    - Project Learning Tree (http://www.dnr.state.mn.us/plt/index.html), a national project to advance student understanding of forestry and natural resources.
    - School Forest Program (http://www.dnr.state.mn.us/schoolforest/index.html).
    - A clearinghouse of outdoor activity guides and resources (http://www.dnr.state.mn.us/forestry/education/activity_guides.html).
- MinnAqua (http://www.dnr.state.mn.us/minnaqua/index.html): the DNR's main fishing and aquatic education program.
- Project WET (Water Education for Teachers) (http://www.dnr.state.mn.us/projectwet/index.html): hands-on, interactive training focused on water and on critical thinking about water issues, for educators.
- Project WILD (http://www.dnr.state.mn.us/projectwild/index.html): an interdisciplinary conservation and environmental training program for educators that emphasizes wildlife.

Other resources:

- A Teacher's Resources website featuring a collection of downloadable activities, lessons and links (http://www.dnr.state.mn.us/education/teachers/index.html).
- Wildfire Prevention (http://www.dnr.state.mn.us/education/wildfire/index.html), educational resources for teachers.