FOREST STEWARDSHIP PLAN

DATE: 6/24/2002

THIS PLAN IS PREPARED FOR:
Some Landowner
10600 Hanks Henhouse Road
Somewhere, IA 55555
555-555-5555

Location: Sections 33 & 34 T89N, R10W, Some County

Total Forested Acreage of Plan: ~ 260

PLAN PREPARED BY:
District Forester
Iowa DNR, Forestry
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Forests Stewardship Plan

Site and Stand Descriptions

Section 33 & 34 T89N, R10, And Some County
~260 Acres

Owner's Objectives:

- To restore native woodland and prairie vegetation in areas heavily pastured in the past, and enjoy the forested area through hiking, ATV riding, bird watching, and mushroom hunting.
- To maintain and enhance biological diversity and wildlife habitat for game and non-game species.
- To build a large pond on a portion of the property.
- Salvage merchantable trees in areas that will be covered with the new pond.

General Description, Site History, and Adjacent Sites

This parcel of land is in western Some County, and is located east of the Cedar River. Otter creek runs through the southeast corner of this property, plus there are a number of wet meadows and drainage areas scattered throughout the property. The property has been owned by the Some Family for just a few years. In those few years this family has taken significant measures to reduce the grazing on the property, reconstruct prairie areas, and re-establish native forest cover in areas that were heavily pastured in the past. The area along the Cedar River and Otter Creek is a mixture of forested areas, pasture, cropland, and residential developments. This property is adjacent to a mixture of forest, crop, pasture, and some residential areas. Portions of the property including some forested areas were heavily grazed in the past. It also appears that there were some harvest activities on portions of the forested areas within the last 20 to 40 years.

There are approximately 260 acres of forest cover on this property, along with approximately 147 acres of pasture. The majority of the forest cover that is not currently being grazed is in the Forest Reserve Program. The terrain on this property is flat to rolling, becoming steep in some areas (ranging from 5 to 30% slope).

Soils Descriptions

The majority of the soils on the entire site are a Fayette silt loam which is generally well-drained, and good for growing a variety of tree species. The native vegetation found on this soil before settlement was most likely forest.

Stand Descriptions and Management Suggestions

This property has been divided into 14 different stands or areas for the purpose of describing the vegetation on the site. Each stand will be divided into three different layers: overstory (upper level of the forest), mid-story (middle layer), and understory (lower level) when those layers are present. The density of each layer will be defined three possible ways: dense, moderately dense, or scattered.

Scattered

Moderately Dense

Dense

Trees in each stand will be put into five possible size categories: seedling-sized (less than 1 inch in diameter), sapling sized (1 to 4 inches in diameter measured at breast height (DBH) 4.5 feet off the ground), pole-sized trees (5 to 12 inches DBH), small sawtimber-sized trees (13 to 18 inches DBH), and large-sized trees (> 20 inches DBH). Shrub and non-woody vegetation will also be listed when found in significant populations.

Stand 1

The overstory of this stand is scattered (see below) with pole-sized black walnut and elm, and the mid-story consists of scattered seedling and sapling-sized sugar maple, black cherry, and hackberry. On the forest floor of this stand, I also found a few pockets of a plant called garlic mustard (*Alliaria petiolata*).

This is a plant that was introduced to the United States, and has become a very invasive plant. If this population that is currently present is allowed to survive, it will continue to thrive and eventually overtake the vegetation layer along the forest floor. Most of the native flowers and non-woody vegetation will not be able to compete with this plant. The understory and portions of the overstory of this area (~ 14 Acres) were cleared during the winter of 2001-2002 of multi-flora rose and undesirable tree species such as honeylocust. In the spring of 2002, a forestry contractor replanted approximately 200 tree seedlings per acre using a mixture of species (black walnut, swamp white oak, bur oak, and red oak).

Stand 1

Management Suggestions:

The high priority in this stand and any other part of the forest should be to first eliminate or reduce any garlic mustard that is present if feasible. Currently, the best practice known for controlling small pockets of this pest is manual removal by pulling. It is best to pull and bag this plant before it produces seed, then destroy the pulled plants by burning (See enclosed publication on management of this plant). Another option to consider is spraying Roundup on these small pockets in late fall or early spring when they are still green and the native plants are not visible. Roundup is a contact herbicide, so caution must be taken to avoid desirable plants. Since this plant is present in the general area and the seed can often be spread by deer (seed gets attached to body parts) moving through the area, it will be a continual battle to keep this pest out. With the size and quality of your forested areas it is worth the time and effort to battle this problem as much as possible.

Some of the remaining black walnut are potentially good quality trees for the production of walnuts (wildlife food) and quality wood (lumber). Some of these trees still have existing vines growing up into their crowns. These vines can eventually fill the crowns and cause tree decline. To help these trees cut any vines beginning to compete with the crown of a tree.

Vine Cutting

The trees that were planted this spring (2002) may need some help over the next few years. Control competing weeds, shrubs, and trees around the tree seedlings for a minimum of three growing seasons if needed. Apply the herbicide Roundup around individual seedlings at the rate and time recommended on the product label if weed competition is significant. Circles of three (3) to five (5) feet should be applied around seedlings when using the herbicide treatment. Be sure when spraying Roundup that the chemical does not make contact with the trees you are protecting. Five to fifteen years after the planting, evaluate the site to see if a crop tree release thinning is needed. This will increase survival and growth of the better trees. Protect this stand from grazing, fire, and deer if possible.

Stand 2

The overstory of this stand is scattered to moderately dense with pole to small sawtimber-sized honeylocust, white ash, American elm, bitternut hickory and hackberry. The mid-story consists of scattered sapling to pole-sized sugar maple, while the understory consists of scattered to dense seedling to sapling-sized sugar maple. This area is thick with mult-flora rose (see picture on next page), and there is also garlic mustard present.


Stand 2

Management Suggestions:

Where possible attempt to reduce the amount of garlic mustard present in this stand as indicated in stand 1**.** To improve this stand consider killing as much of the honeylocust as possible. Kill these trees using the hack and squirt method or double girdle chainsaw method and an approved herbicides. The tree will be entirely girdled at any convenient height, and a herbicide squirted into the cuts. **Chemicals used in performing this practice must be applied according to authorized use, label direction, and other federal or state policies and requirements.**

Chainsaw Girdle **Hatchet Girdle**

At this point there is enough density of maple coming in that planting new trees would not be beneficial. Also, multi-flora rose will often begin to decrease in density as the canopies of the trees begin to increase in size and make the understory shadier. Once the undesirable tree species such as honeylocust are killed allow this stand to develop on its own. In Five to fifteen years re-evaluate the site to see if a crop tree release thinning is needed. This will increase survival and growth of the better trees.

Stand 3

The overstory of this stand is scattered with sapling to pole-sized honeylocust, sapling-sized hawthorn, and a few scattered sapling-sized sugar maple. The understory consists of dense pockets of multi-flora rose and honeysuckle. This area is approximately 9 acres in size.

Management Suggestions:

Stand 3 (~9 ac.): Remove multi-flora rose, honeylocust, and elm with chainsaws and heavy equipment and plant new seedlings as you did in stand 1. If undesirable trees are not completely removed, use the girdling technique or a hack and squirt technique with approved herbicides to kill these trees standing. Hacks are made using an ax or similar cutting tool, at a convenient height and should completely girdle the tree. The cuts should leave flaps that will help retain the applied herbicide. **Chemicals used in performing this practice must be applied according to authorized use, label direction, and other federal or state policies and requirements.**

CARE OF SEEDLINGS: After the site preparation work is finished, then the trees are ready to plant. For spring, tree planting must be done between March 15th and May 5th. All trees must be stored in refrigeration at 34 to 40 degrees Fahrenheit until the day they are planted. On planting day, store trees in full shade and keep roots moist until they are planted.

TREE REGENERATION (Planting): Plant 250 trees per acre or 2,250 total trees (~9 acres) at a 13 X 13 foot spacing. **Stand 3 (~ 9 Acres):** On each acre plant 50 black walnut, 50 swamp white oak, 50 bur oak, 50 red oak , and 50 white oak. This would be a total of 450 black walnut, 450 red oak, 450 swamp white oak, 450 white oak, and 450 bur oak. The trees will be larger stock (17- 24 inches tall), and will be planted by hand in a vertical position. Tamp seedlings in thoroughly to eliminate air pockets around the roots. Place a red or orange flag by each planted tree, so each location can be identified during future management activities. After planting (while trees are still dormant), spray 3 to 5 foot circles with pre-emergent herbicides such as Princep and Pendulum . **Follow Chemical Label Directions At All Times!**

FOLLOW UP PLANTING MAINTENANCE: After the trees are planted they may require some help. Control competing weeds, shrubs, and trees around the tree seedlings for a minimum of three growing seasons if needed. Apply the herbicide Roundup around individual seedlings at the rate and time recommended on the product label if weed competition is significant. Circles of three (3) to five (5) feet should be applied around seedlings when using the herbicide treatment. Be sure when spraying Roundup that the chemical does not make contact with the trees you are protecting. Five to fifteen years after the planting, evaluate the site to see if a crop tree release thinning is needed. This will increase survival and growth of the better trees.

PROTECTION: The area should be protected from grazing, fire, and deer if possible.

Note on herbicides: The label is the law! You must follow the label exactly. If any instructions in this plan are contrary to the label that is in your possession, then contact the DNR Forester for consultation. Herbicides must be used in accordance with their labels.

Stand 4

The overstory of this stand consists of scattered large-sized sugar maple, honeylocust, elm, and white oak. The mid-story consists of a few scattered sapling and pole-sized sugar maple, hackberry, and honeylocust. The understory consists of scattered seedling to sapling-sized sugar maple, elm, and a few ironwood. There is also garlic mustard, multi-flora rose, and honeysuckle in spots.

Management Suggestions:

Where possible attempt to reduce the amount of garlic mustard present in this stand as indicated in stand 1**.** To improve this stand consider killing as much of the honeylocust as possible. Kill these trees using the hack and squirt method or double girdle chainsaw method and an approved herbicides. The tree will be entirely girdled at any convenient height, and a herbicide squirted into the cuts. **Chemicals used in performing this practice must be applied according to authorized use, label direction, and other federal or state policies and requirements.** Also, where possible remove honeysuckle and treat stumps with a herbicide such as Roundup. Follow label directions at all times.

Stand 5

Portions of this stand have stakes indicating that it could possibly be covered with water if the new pond is built. The overstory of this stand consists of scattered small sawtimber and large-sized sugar maple, white ash, red elm, shagbark hickory, and hackberry. The mid-story consists of scattered pole-sized sugar maple and sapling-sized ironwood. The understory is pretty open with a few pockets of multi-flora rose, along with some garlic mustard.

Management Suggestions:

Where possible attempt to reduce the amount of garlic mustard present in this stand as indicated in stand 1**.** If the pond is built, consider harvesting any merchantable trees that will be impacted by water. If needed, I can mark all merchantable trees for you, estimate the volume, and give you the information needed to send out a request for bids to local log buyers.

Stand 6

The overstory of this stand consists of scattered to dense groups of seedling to sapling-sized sugar maple, and one pocket of large-sized sugar maple. The understory consists of scattered seedling sized sugar maple, and some pockets of multi-flora rose. There was also garlic mustard found in this area.

Management Suggestions:

Where possible attempt to reduce the amount of garlic mustard present in this stand as indicated in stand 1. As the stand begins to thicken with maple the multi-flora rose should begin to decline. Re-evaluate the condition of this stand in five years.

Stand 7

The overstory of this stand consists of scattered to dense areas of seedling to sapling-sized bitternut and shagbark hickory, sugar maple, aspen, elm, black cherry, and some pole-sized red oak. There is not a mid-story, and the understory consists of scattered pockets of dogwood and hawthorn. There is also garlic mustard present.

Management Suggestions:

Where possible attempt to reduce the amount of garlic mustard present in this stand as indicated in stand 1. Any action that improves the growing conditions in a stand of trees is called Timber Stand Improvement (TSI). The removal of crown competition from specific trees is a timber stand improvement activity called crop tree release. Use this method to release 20 to 40 quality trees per acre. Selected crop trees should have a healthy crown, and have the potential to be a dominant tree. The primary crop trees are oak, black cherry, and shagbark hickory in this stand.

- Mark all crop trees with red or orange paint at DBH (4.5 feet off the ground).
- Release crop trees on all 4 sides whenever possible.

The trees are considered released when the crop trees' crown or leaf area has "free to grow" room. This means that the crop tree should not have any other trees' crown area within 6-8 feet.

6 to 8 feet crown clearance

- Remove or kill undesirable species such as elm, bitternut hickory, aspen, and sugar maple in this stand using a double chainsaw girdle (no herbicides). Listed undesirable trees should only be killed when in direct competition with primary crop trees.

 **Double chainsaw girdle**

- If you have two quality crop trees close together, treat them as one tree and release any competing trees around both of them.
- Remove vines from any selected crop trees.

Stand 8

The overstory consists of a scattered to moderately dense stand of seedling to pole-sized bitternut and shagbark hickory, basswood, sugar maple, black cherry, white ash, and red oak. There is no mid-story, and the understory consists of scattered to moderately dense seedling-sized shagbark and bitternut hickory, and sugar maple. There is also garlic mustard present in this stand.

Management Suggestions:

Where possible attempt to reduce the amount of garlic mustard present in this stand as indicated in stand 1. Any action that improves the growing conditions in a stand of trees is called Timber Stand Improvement (TSI). The removal of crown competition from specific trees is a timber stand improvement activity called crop tree release. Use this method to release 20 to 40 quality trees per acre. Selected crop trees should have a healthy crown, and have the potential to be a dominant tree. The primary crop trees are oak, black cherry, and shagbark hickory in this stand.

- Mark all crop trees with red or orange paint at DBH (4.5 feet off the ground).
- Release crop trees on all 4 sides whenever possible.
- The trees are considered released when the crop trees' crown or leaf area has "free to grow" room. This means that the crop tree should not have any other trees' crown area within 6-8 feet.
- Remove or kill undesirable species such as elm, bitternut hickory, and sugar maple in this particular stand using a double chainsaw girdle (no herbicides). Listed undesirable trees should only be killed when in direct competition with primary crop trees.
- If you have two quality crop trees close together, treat them as one tree and release any competing trees around both of them.
- Remove vines from any selected crop trees.

Stand 9

The overstory of this stand consists of scattered to moderately dense pole to large-sized sugar maple, and a few pockets of pole to small sawtimber-sized red oak, pole-sized shagbark hickory, and pole-sized aspen. The mid-story consists of scattered to moderately dense groups of pole-sized basswood, bitternut and shagbark hickory, and sugar maple. The understory consists of scattered to moderately dense groups of seedling

to sapling-sized sugar maple. There is a good variety of non-woody understory plants in this stand, and there is also some garlic mustard present.

 **Trillium**

Management Suggestions:

Where possible attempt to reduce the amount of garlic mustard present in this stand as indicated in stand 1**.** If you have limited time and resources to battle garlic mustard this is one location where you should concentrate your efforts. Monitor the area for other invasive species such as exotic honeysuckle, and take the appropriate action to remove it if the plant is found.

To support a variety of wildlife species, improve the growing conditions for the small pockets of oak by removing or girdling species such as sugar maple, elm, aspen, and bitternut hickory that are in direct competition with these stands. For the rest of this stand allow it to develop at this time and re-evaluate it in 5 to 10 years

Stand 10

This is a small stand that has an overstory that consists of moderately dense pole-sized basswood, and scattered pole-sized white ash and aspen. The mid-story consists of scattered sapling-sized ironwood, while the understory consists of scattered seedling-sized sugar maple.

Management Suggestions:

Monitor the stand for invasive species such as garlic mustard and exotic honeysuckle, and take the appropriate action to remove it if the plants are found. For the rest of this stand allow it to develop at this time and re-evaluate it in 5 to 10 years

Stand 11

This area appears it has been heavily grazed. The largest infestation of garlic mustard that I found during my visit is located along the forest floor of this stand. The overstory in this stand consists of a few scattered small sawtimber and large-sized sugar maple and scattered pole to small sawtimber-sized bitternut and shagbark hickory, and red oak. The mid-story consists of scattered pole-sized elm and boxelder, while the understory consist of scattered to moderately dense groups of sapling-sized hawthorn, boxedler, honeylocust, and seedling-sized sugar maple. There is also some multi-flora rose found in the understory of this stand.

Management Suggestions:

This is a hot spot for garlic mustard, so attempt to reduce the amount of garlic mustard present in this stand as indicated in stand 1**.** The best thing that can be done for this stand is to no longer allow the livestock to graze in this area. If the livestock can be eliminated consider removing or killing undesirable species such as honeylocust, boxelder, and multi-flora rose. This will allow more room for species such as sugar maple, red oak, and shagbark hickory to become established.

Area 11A

This is the area is southeast of stand 11 and runs east toward the road. This area is north of the drainage area that runs to the road. There is a program call the Conservation Reserve Riparian Buffer Program. This program is designed to help landowners establish vegetative buffers (trees and shrubs) along perennial streams to protect water quality and provide an array of other benefits. This area adjacent to the drainage (~ 180 feet wide) would be considered marginal pasture, and you could receive an annual payment for maintaining a new planting for the length of the contract (minimum 10 years). There is also cost-share available for tree and shrub establishment. You would have to eliminate the cattle from this specific area with temporary or permanent fencing. Call John Gallagher, Linn County NRCS (319-377-5960), to see when he can visit your property to determine if a portion of this area would qualify for the program. If you sign-up for this program, I will then develop a specific planting plan for this project.

Field 12

The overstory of this stand consists of scattered small sawtimber and large-sized sugar maple, and a very small pocket of pole-sized red oak. There are also a few scattered large-sized white oak and red oak. The mid-story consists of scattered to moderately dense groups of sapling to pole-sized sugar maple and scattered shagbark hickory. The understory consists of scattered to moderately dense seedling and sapling-sized sugar maple, bitternut hickory, and ironwood. There is also some garlic mustard present in this stand.

Management Suggestions:

Where possible attempt to reduce the amount of garlic mustard present in this stand as indicated in stand 1**.** The best thing that can be done for this stand is to no longer allow the livestock to graze in this area. If the livestock are eliminated from this area use crop tree release method to increase the growing potential for as many of the nut producing trees in this stand as possible. Selected crop trees should have a healthy crown, and have the potential to be a dominant tree. The primary crop trees are oak and shagbark hickory. Sugar maple can be a secondary crop tree.

- Mark all crop trees with red or orange paint at DBH (4.5 feet off the ground).
- Release crop trees on all 4 sides whenever possible.

- The trees are considered released when the crop trees' crown or leaf area has “free to grow” room. This means that the crop tree should not have any other trees’ crown area within 6-8 feet.
- Remove or kill undesirable species such as elm, bitternut hickory, in this stand using a double chainsaw girdle (no herbicides). Listed undesirable trees should only be killed when in direct competition with primary crop trees.
- If you have two quality crop trees close together, treat them as one tree and release any competing trees around both of them.
- Remove vines from any selected crop trees.

Field 13

The overstory of this stand consists of pole to small sawtimber-sized white ash and a few large-sized white oak and pole to small sawtimber-sized red oak. There is honeylocust and hawthorn along the edges of this stand. The mid-story consists scattered to moderately dense areas of sapling to pole-sized bitternut and shagbark hickory, white ash, sugar maple, and basswood. There are some where it is very dense with sugar maple and basswood. The understory consists of scattered to moderately dense seedling-size bitternut hickory and sugar maple. There is a descent amount of woodland understory plants in this stand in spots (i.e. phlox, wild geranium, and Jack-in-the-pulpit), but there is also some garlic mustard present.

Management Suggestions:

Where possible attempt to reduce the amount of garlic mustard present in this stand as indicated in stand 1**.** Monitor the stand for other invasive species such as exotic honeysuckle, and take the appropriate action to remove it if the plants are found. The best thing that can be done for this stand is to no longer allow the livestock to graze in this area or along the edges. If the livestock can be eliminated consider removing or killing undesirable species such as honeylocust in the stand.

Field 14

The overstory consists of moderately dense to dense sapling to pole-sized sugar maple, basswood,bitternut and shagbark hickory. In some areas there are pure pockets of single species such as sugar maple and shagbark hickory. There are also a few scattered small sawtimber to large-sized sugar maple, white oak, and red oak. The mid-story in places consists of scattered sapling to pole-sized honeylocust, elm, and ironwood. The understory consists of scattered seedling-sized sugar maple and bitternut hickory. There was some garlic mustard found in this stand. On the east edge and up in the northwest corner of this stand there are small open sedge meadows that had flowing water moving through them this spring.

Management Suggestions:

Where possible attempt to reduce the amount of garlic mustard present in this stand as indicated in stand 1**.** Monitor the stand plus the meadow areas for other invasive species, and take the appropriate action to remove it if the plants are found. The best thing that can be done for this stand and the meadow areas is to no longer allow the livestock to graze in this area or along the edges. If the livestock can be eliminated consider removing or killing undesirable species such as honeylocust in the stand.

Archeological Sites/ Rare and Endangered Species

During site visits no specific archeological sites (i.e. Native American burial mounds) and/or rare, endangered, or special concern plant and/or animal species were observed, but this does not mean that they are not present. If there are any significant sites or species found on the site, they should be protected during any site activities. Also, if something significant is found, notify my office and we can assists with suggestions for protection of critical areas or plant and/or animal species.

Drainage Areas

There are many drainage areas running through this site that feed into Otter Creek. With the steeper slopes surrounding this area it is critical that forestry best management practices are utilized during any type of harvest operations to protect the water resource moving off and through your property (See enclosed information on Best Management Practices).

TREE HARVESTING

If any trees are harvested on the site during the pond development process, sell them through a sealed bid process (See publication on marketing Iowa timber). If you decide to go ahead with the pond, give me a call and I can help you mark any saleable trees that will be covered or negatively impacted by the changing water level. Since the property is rolling and susceptible to erosion when heavily exposed, allow harvest activities to only occur when the ground is frozen. This will also protect any remaining oak from being potentially exposed to the fungus that causes oak wilt. If oak trees are wounded between March 15th and July 15th, they are susceptible to infection by the fungus that causes this disease.

AVAILABLE COST-SHARE FOR MANAGEMENT ACTIVITIES

Due to state budget challenges, cost-share funding through the Resource Enhancement and Protection fund (REAP) as been discontinued at this time. Check with Some County NRCS, 555-555-5555, to see if there will be any funding available for tree planting or timber stand improvement activities through a program called EQIP. Also, in the next few months a new program through the Federal Government maybe available to assist with different forestry-related activities such as tree planting. As soon as any information is available for this program you will be notified.

PRIORITY TIMELINE FOR MANAGEMENT ACTIVITIES

1) Walk area and access garlic mustard presence. When pockets are found take appropriate management steps. Since this is an expanded problem on your property consider concentrating your control efforts in some of your higher quality stands such as 7, 8, and 9. As far as a diversity of wildflowers and understory plants stand 9 is probably the highest quality stand. Also, monitor all stands for other invasive species such as exotic honeysuckle (see enclosed information), and take appropriate action when the plants are found. **All Stands**.

2) Timber Harvest- **Stand 5**
Harvest merchantable trees that will be impacted by pond construction while the ground is frozen to reduce site impacts. Utilize best management practices during and after harvest operations to protect natural drainage areas.

3) Pasture Conversion- **Stand 3**
Convert this heavily grazed area back to native hardwoods.

4) Timber Stand Improvement- **Stand 7,8,9, and 12**
Use crop tree release and weed tree removal to promote desirable species.

Below is a listing of tree, shrub, and other interesting plant species found in your forested areas during my visit:

<u>Non-Woody Understory Plants</u>
May apple (*Podophyllum peltatum*)
wild violet (*Viola species*)
wild geranium (*Geranium maculatum*)
Jack-in-the-pulpit (*Arisaema triphyllum*)
bloodroot (*Sanguinaria canadensis*)
snakeroot (*Sanicula species*)
false Solomon's seal (*Smilacina racemosa*)
sweet cicely (*Osmorhiza longistylis*)
Jacob's ladder (*Polemonium reptans*)
enchanter's nightshade (Circaea quadrisulcata)
rattlesnake fern (*Botrychium virginianum*)
sweet william (*Phlox divaricata*)
Jack-in-the-pulpit (*Arisaema triphyllum*)
trillium species (*Trillium species*)
wild ginger (*Asarum canadense*)
Virginian waterleaf (*Hydrophyllum virginianum*)

Sharp-lobed hepatica (*Hepatica acutiloba*)
orchis species (*Orchis species*)
trout lily (*Erythronium species*)
jumpseed (*Tovara virginiana*)
jewelweed (*Impatiens species*)
Dutchman's breeches (*Dicentra cucullaria*)

Shrubs & Vines
gooseberry (*Ribes species*)
dogwood (*Cornus species*)
prickly-ash (*Xanthoxylum americanum*)
barberry (*Berberis species)*
multi-flora rose
exotic honeysuckle (*Lonicera species*)
raspberry (*Rubus species*)
poison ivy
Virginia creeper (*Parthenocissus quinquefolia*)
hazelnut (*Corylus americana*)
smooth sumac (*Rhus glabra*)
Russian olive (*Elaeagnus angustifolia*)
Wild plum (*Prunus americana*)

***Note:** The honeysuckle, Russian olive, and multi-flora rose present on your site are invasive species. Consider removing plants and treating any stumps of these species that are found on the site.

Trees
hawthorn (*Crataegus species*)
black cherry (*Prunus serotina*)
hackberry (*Celtis occidentalis*)
bur oak (*Quercus macrocarpa)*
red oak (*Quercus rubra)*
white oak (*Quercus alba)*
shagbark hickory (*Carya ovata*)
bitternut hickory (*Carya cordiformis*)
red elm (*Ulmus rubra)*
American elm (*Ulmus americana)*
basswood (*Tilia americana*)
honeylocust (*Gleditsia triacanthos*)
mulberry (*Morus species*)
boxelder (*Acer negundo*)
cottonwood (*Populus deltoides*)
aspen (*Populus species*)
silver maple (*Acer saccharinum*)
sugar maple (*Acer saccharum*)
black walnut (*Juglans nigra*)

ironwood (Ostrya virginiana)
catalpa (*Catalpa speciosa*)
Eastern redcedar (*Juniperus virginiana*)
Prairie crabapple (*Malus ioensis*)