



Stand Fast Farm Vegetation Survey

July 2019
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Introduction

Stand Fast Farm is a working farm operated by Tim Grant. This survey focuses on the farm's main property located at 4899 Van Buren Road in Dunkirk, NY, an area of approximately 114 acres of pasture, woodlot, operational space and a home site (a parcel fragment to the southeast isolated by construction of Rt. 90 was not included in this survey).

The farm's primary output is beef from cattle raised in a strictly grass-fed production model that emphasizes diligent grazing rotations in imitation of the natural grazing behaviors of wild herds of foraging ruminants. In addition to producing a very high-quality product, the farm's aim in adhering to this production model is to responsibly steward the land's natural communities and allow wildlife to thrive alongside agricultural production, while conserving and increasing the carbon content of its soils. This survey aims to facilitate fine-tuning of management practices in light of the specific plant species and communities present, as well as to highlight for customers the conservation values realized by their support of Mr. Grant's business.

Physical Context

Stand Fast Farm is situated within New York State's Lake Erie-Ontario Plain ecozone. At its closest point, Lake Erie lies just over one mile to the northwest of the farm. The farm is physically bracketed by NYS Route 90 to the east and a major railroad line that carries both freight and passenger trains to the west.

Soils mainly consist of silt loams typical of the area, formed from sediments deposited by glacial lakes during the retreat of the most recent ice age. As seen in Figure 1, a mosaic of poorly-drained Niagara Silt Loams and better-drained Canandaigua Silt Loams (classified as Farmland of Statewide Importance) occupy most of the site's surface area. Depth to bedrock is typically greater than 80 inches.

Excluding the artificially built-up roadbeds, the topography of the farm gently slopes from its highest areas to the southeast to its lowest areas in the northwest (Figure 2). Water enters from the east by way of two culverts passing beneath Route 90 and from the south by a drainage ditch crossing a vineyard. The path of these flows through the property has long been channelized, with drainage points to the north and east. The pastures have additional surface drainage in the form of old, regularly spaced parallel shallow ditches. Some of these form vernal pools that persist in the spring. Water exiting the property continues in two minor streams to discharge into Lake Erie.

Vegetation and Natural Communities

The farm can be divided into three major vegetation types: Open Pasture and Grassland, Successional Forest and Shrubland, and Mature Forest (Figure 3). Woody hedgerows following old fence lines can be considered an extension of the Successional Forest and Shrubland community. In the course of this site's prior history as a dairy farm, all of these habitats have been subject to considerable modification in the pursuit of agricultural productivity. The high water table and prevalence of poorly drained soils has biased the composition of all of these vegetation types towards species with more mesic (wet site) affinities- for example, Swamp Milkweed (*Asclepias incarnata*, pictured on the cover) is generally more abundant throughout than Common Milkweed (*Asclepias syriaca*).

The overall species diversity of the farm is very high, especially within the Open Pasture and Grassland areas, with a total species count of 200 derived from 8 hours of surveying in late July 2019. This count excludes species like spring ephemerals and fall-flowering asters that were not visible or not feasible to identify at the time of the survey, so the true species count is undoubtedly somewhat higher. This diversity does include a large number of introduced or invasive species associated with agriculture and the development of transportation infrastructure. In spite of that, native species indicative of high-quality habitat are also abundant, including several uncommon or rare and one NYS Endangered species, as well as a small number of trees of significant age, some of which may predate the region's settlement.

Open Pasture and Grassland: Most of the farm's acreage is kept in actively grazed pasture. With some variation dependent on soil drainage and topography, the graminoid (grasses and grass-like plants) composition of these pastures combines typical pasture grasses-- mostly introduced Eurasian species like Timothy-Grass (*Phleum pratense*) and Orchard Grass (*Dactylis glomerata*)-- with a diversity of native grasses, sedges, and rushes. These are mostly species typical of wet sites, like Fox Sedge (*Carex vulpinoidea*), Yellow Sedge (*Carex lurida*), Dark-Green Bulrush (*Scirpus atrovirens*) and Soft Rush (*Juncus effusus*).

These share the pastures with a variety of forbs (herbaceous plants) including common introduced species like White Clover (*Trifolium repens*), Low Cudweed (*Gnaphalium uliginosum*) and a large patch of the yellow blossoms of Elecampane (*Inula helenium*). Many of the native forbs present also reflect wet site conditions, especially in and around the main waterways, but not all. Common native species include Daisy Fleabane (*Erigeron annuus*) and Grass-Leaved Goldenrod (*Euthamia graminifolia*), and many others. The farm is home to several notable uncommon or rare species which are all included among the pasture forbs: Southern Agrimony (*Agrimonia parviflora*, NYS Rare S4), Ragged-Fringed Orchid (*Platanthera lacera*, S4), Bog Yellowcress (*Rorippa palustris*, S4), Water Pimpernel (*Samolus valerandi*, S4), and Winged Monkeyflower (*Mimulus alatus*, NYS Rare S3).

Invasive or potentially invasive species are also found throughout the farm's pastures. Reed Canarygrass (*Phalaris arundinacea*) is abundant, a bit of Common Reed (*Phragmites australis*) is found here and there, Eurasian Buckthorn (*Rhamnus cathartica*) and Multiflora Rose (*Rosa multiflora*) seed in from nearby shrubby areas, and Narrow-Leaf and Hybrid Cattails (*Typha angustifolia* and *x glauca*) appear in patches in the waterways. Bull Thistle (*Cirsium vulgare*) is fortunately not numerous, but Canada Thistle (*Cirsium arvense*) forms large patches. Interestingly, patches of Common Reed and Narrow-Leaf Cattail that I had made note of several years ago when the pasture fencing was being constructed were treated in the intervening time by cutting once and then grazing regularly. The Cattail patch in question is now entirely gone, and the Common Reed patch is reduced to a few stems protected by a cluster of Canada Thistle. Similarly, an area of low shrubland (including lots of Buckthorn) that was brushhogged and subsequently grazed has fully reverted to diverse pasture. Both of these situations speak to the potential of this farm's specific grazing practices as a conservation tool in this circumstance. Reed Canary Grass within the pastures is noticeably suppressed and fails to outcompete native sedges with which it grows, while immediately on the other side of the property-line fence Reed Canary Grass forms extensive monocultures. All of this has been achieved without application of chemical herbicides or soil disturbance with heavy equipment.

These pastures are also home to Frank's Sedge (*Carex frankii*), a NYS Endangered species (S2). This newly recorded population may be the largest and healthiest in NY state, with thousands of individual plants observed. All indications are that the grazing rotations of these pastures are favoring the persistence and proliferation of this endangered species, which can be seen to be colonizing the areas

where invasive Reeds and shrubs have been grazed away. Its numbers are most concentrated in the waterway that runs along the east side of the woodlot, but it's also widespread in the pastures on both the east and west sides of the woodlot. It is evident that cattle do browse this species but it does not appear to be a preferred browse. Recently browsed specimens can be seen to have gone on to flower and set fruit. This species does not appear in the northern portion of the farm property, perhaps suggesting that that area was previously subject to cultivation or other land use practices that did not favor the persistence of this species.

Since surveying this population, a smaller population of Frank's Sedge was located at another site about a mile away. At this second site, open field conditions are maintained by annual brushhogging. While soil and topography are similarly appropriate for Frank's Sedge, this difference in management has produced a situation in which Buckthorn, Multiflora Rose and Reed Canary Grass dominate vegetation that spends most of the year waist- to chest-high. Taller native sedges and grasses persist in competition with this vegetation, but the small population of Frank's Sedge is restricted to the corridor of a path that both humans and deer disturb regularly enough to limit the height of surrounding vegetation. This supports the assertion that the pasture management practices at Stand Fast Farm benefit the population of Frank's Sedge found there.

Persistently wet depressions display concentrations of native wet-site species that include Spike-Rush (*Eleocharis obtusa*), Dwarf St. John's Wort (*Hypericum mutilum*) and Water-Plantain (*Alisma subcordatum*).

Successional Forest and Shrubland: This category covers a variety of different cover types, lumped together more by the structure of standing vegetation and relatively disturbed nature than by any sort of ecological uniformity. Higher canopies along the waterways are typically dominated by nonnative White Willow (*Salix alba*) while the young canopy just north of the Mature Forest area consists of native species like Red Maple (*Acer Rubrum*), American Sycamore (*Platanus occidentalis*) and Green Ash (*Fraxinus pennsylvanica*).

Distributed throughout the shrublands and hedgerows are occasional Domestic Apple (*Malus domestica*) and Crabapple (*Malus sp*) varieties. Eurasian Buckthorn (*Rhamnus cathartica*) is the main invasive woody shrub of concern. Multiflora Rose (*Rosa multiflora*) is present, but it is pleasing to note that native Swamp Rose (*Rosa palustris*) outnumbers it by far and is the most abundant shrub in some sections. Silky Dogwood (*Cornus amomum*) and Smooth Arrowwood (*Viburnum dentatum*) are also abundant, while Nannyberry (*Viburnum lentago*) is present but scarce. Smooth Arrowwood is suffering throughout the northeast from the effects of Viburnum Leaf Beetle, and their impact can be seen here, but the presence of many healthy specimens setting seed is good to see.

Ground vegetation mostly consists of the more shade-tolerant members of the broader pasture community, along with some common weedy species like Upright Wood-Sorrel (*Oxalis stricta*) and White Avens (*Geum canadense*).

These areas are currently laced with trails used by both deer and cattle. Compared to the Mature Forest areas, the vegetation here is less vulnerable to impacts by heavy hoof traffic.

Mature Forest: The farm's Mature Forest area shows clear signs of history as a working woodlot. A small core of Beech-Hemlock forest contains the farm's oldest trees, thick columnar Beech (*Fagus grandifolia*) trunks. Based on coring of similar Beech specimens in old farm woodlots of similar characteristics nearby, it's likely that at least a couple of these are trees that began growing prior to the

arrival of settlers in the area. This is not to say that the woodlot is an old-growth forest; the subsequent growth of those Beech trees has been influenced by removal of many of the surrounding trees for timber and firewood in the two centuries or so that followed.

This most mature portion of the woodlot is a Hemlock-Northern Hardwoods community in its basic composition, and displays minor development of hummock-and-hollow microtopography (with shallow seasonally wet areas interlaced with the higher areas surrounding tree bases) typical of somewhat wet sites. The woodlot is currently included in grazing rotations, and it is becoming apparent that this Hemlock-Hardwoods area is particularly vulnerable to hoof traffic. Regular disturbance of the surface soil in this section, over time, is likely to extirpate spring ephemeral ground flora and impact tree health, as most trees maintain a network of fine roots in the upper soil layer in this type of forest. Sugar Maple is particularly vulnerable in this way.

While photos from several years ago indicate that there was little mid-summer ground flora under the deep canopy even before grazing was introduced, there are some small patches where cattle were excluded by debris from the recent timber sale, and within these patches Wild Ramps (*Allium tricoccum*) were observed flowering. This species has recently become trendy as a gourmet cooking ingredient. In parts of the woodlot where it may be desirable to set up intentional exclusion areas to protect sensitive tree roots, propagation of this species may present an opportunity for an economic return from those areas otherwise taken out of production.

It does not appear that previous management of this woodlot adhered to any particular forestry practice or design; with a relatively mixed age structure and low density of stems of high timber value. Recently a timber sale was conducted in which large Ash and some other timber were removed. Many mature and ecologically valuable trees remain.

The southernmost portion of the woodlot is a near-monoculture of American Basswood (*Tilia americana*) and is probably the most resilient to cattle impacts. Near the edge of the neighboring vineyard, some shrubs of invasive Japanese Barberry (*Berberis thunbergii*) are present- this species can form dense thickets in forest understories, and has been associated with higher levels of deer ticks and higher prevalence of Lyme Disease carried by those ticks. This shrub's sharp spines may deter grazing, so manually removing these plants would be advisable.

An intermediate area is also dominated by Basswood but includes notable trees like a mature Elm (*Ulmus americana*) and a large Tuliptree (*Liriodendron tulipifera*). This intermediate area is fairly wet and at the time of the survey had been recently visited by cattle, which had left much of the soil surface as churned mud. Limiting cattle impacts in this section is also worth considering, though it is less vulnerable than the Hemlock-Hardwoods area.

An opportunity to utilize the Basswood-dominated portions of the woodlot (Basswood can also be found in the Successional Forest/Shrubland areas, which may actually have greater potential for this possibility) revolves around the traditional practices of coppice or pollard management and "Tree-Hay." Prior to baled field hay becoming the main form of winter fodder for cattle, in many parts of Europe leafy branches of trees with high nutrients for cattle were stacked and dried as the main source of stored winter fodder. While this practice is no longer necessary due to the modern tools used to mow and bale hay, incorporating this practice into some of the wooded area may have potential to increase the nutrition and fodder diversity available to the herd, while also maintaining an area of sheltering canopy that's less likely to be harmed by hoof traffic. Historically, Basswood (and its European cousins,

the Lindens) is considered one of the better sources of tree-hay, and its biology is particularly resilient to coppice management. Most modern research on the benefits of these practices focus on drought-prone areas of the tropics, where deep-rooted trees can be more reliably productive than forbs and grasses, so it's hard to find an authoritative modern source discussing the application of this practice in temperate areas, but the practice is heavily discussed and seemingly popular in online communities for small farmers. A few information sources:

<https://www.agricology.co.uk/field/blog/tree-hay-forgotten-fodder>

<https://midwestpermaculture.com/2012/11/coppicingpollarding/>

A small fragment of mature forest can also be found near the southeastern corner of the farm. While this does contain a number of mature Eastern Hemlock (*Tsuga canadensis*), Beech, and a very substantial Bitternut Hickory (*Carya cordiformis*), as these trees senesce the fragmentary nature of this small patch makes it unlikely to persist. Instead, it will most likely revert to pasture, with perhaps a few of the most resilient young trees developing spreading crowns and acting as valuable shade and shelter. Additional Japanese Barberry shrubs can be found at the base of these trees.

A novelty at the western edge of the woodlot is a copper-leaved American Beech. Copper-leaved varieties of European Beech are popular as horticultural trees, but American Beech can display this variation in nature on occasion as well. In extensive examination of our region's forests, this is the only such specimen I have encountered.

Conservation Values Summary

- Extensive population of NYS Endangered Frank's Sedge (*Carex frankii*, S2), persisting and increasing under current management practices.
- Two NYS Rare plant species: Southern Agrimony (*Agrimonia parviflora*, S4) and Winged Monkeyflower (*Mimulus alatus*, S3). Southern Agrimony is regionally common in spite of its statewide ranking, but Winged Monkeyflower is genuinely scarce throughout.
- Approximately 18 contiguous acres of closed-canopy forest including probably pre-settlement trees.
- Approximately 37 acres of soils classified as Farmland of Statewide Importance.
- Demonstration of alternative approaches to control for notoriously difficult invasive species including Common Reed (*Phragmites australis*) and Eurasian Buckthorn (*Rhamnus cathartica*).

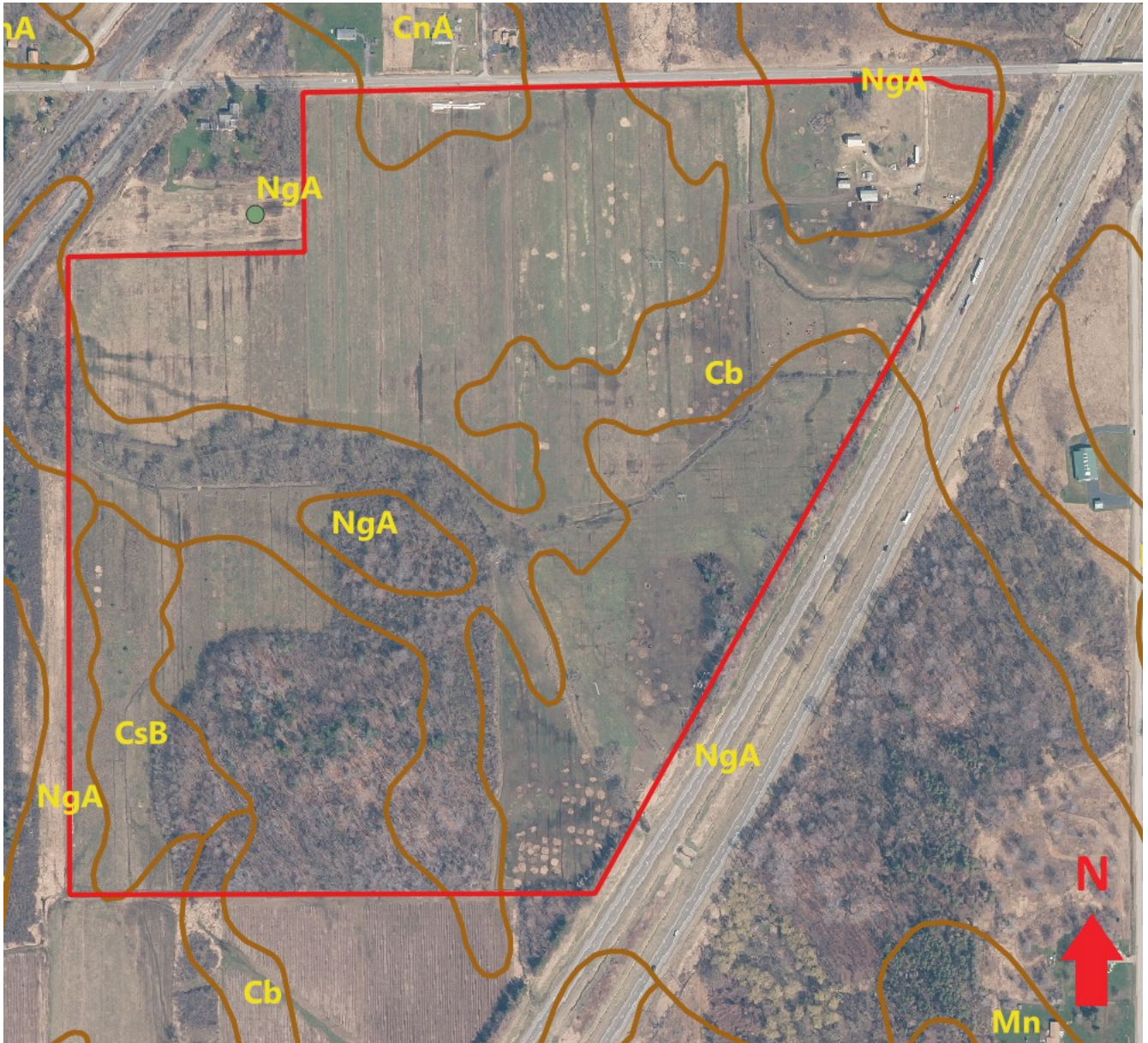


Figure 1: Soil Map. Property Boundary outlined in Red.
NgA= Niagara Silt Loam Cb= Canandaigua Silt Loam
CnA= Chenango Gravelly Loam CsB= Collamer Silt Loam

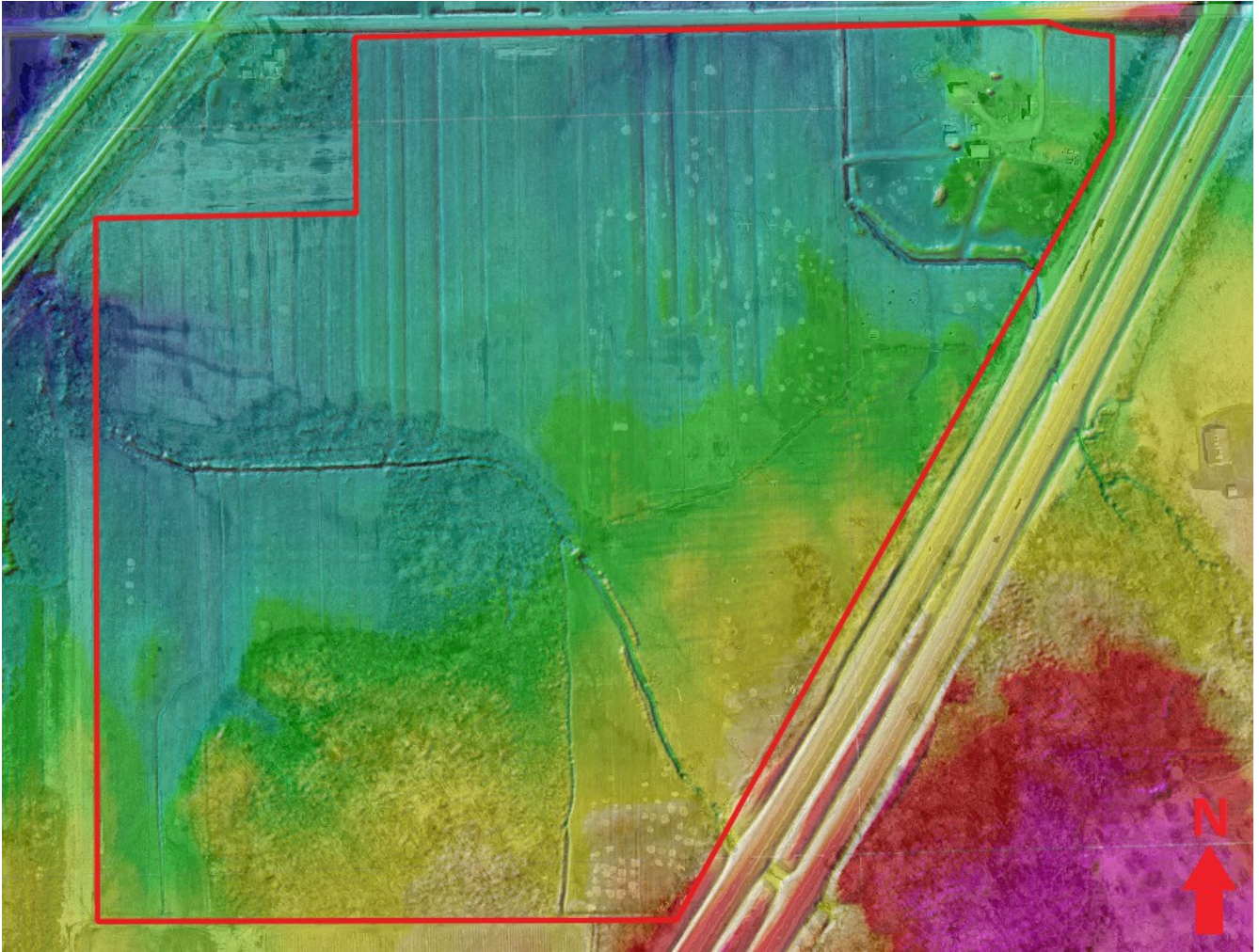


Figure 2: Landform Map. Property boundary outlined in red.
Deep Blue= 188' elevation Green= 191.5' elevation Red= 196' elevation

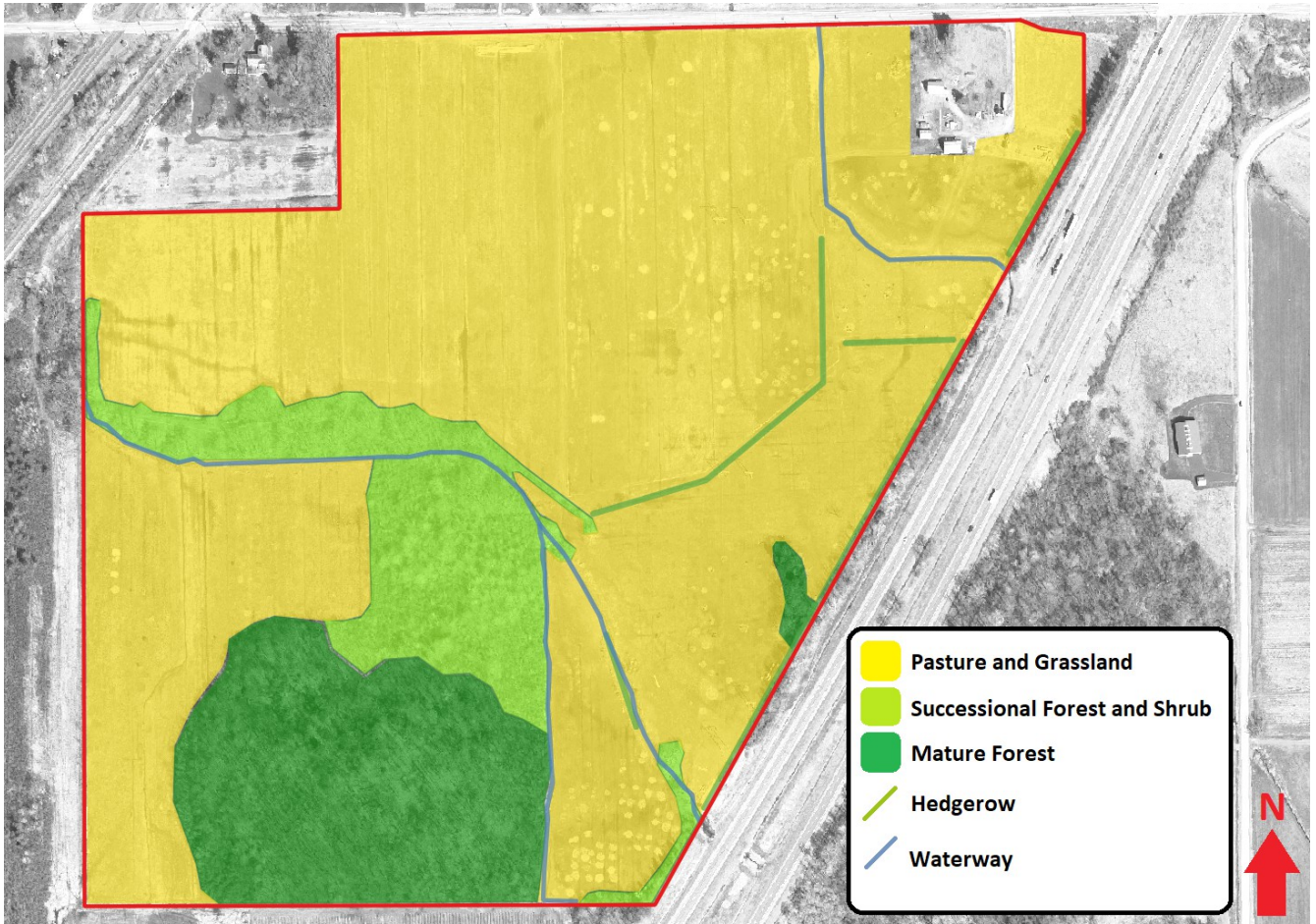


Figure 3: Vegetation Communities and Associated Features



Figure 4: Lush Vegetation fills the waterways, including Rice Cutgrass (*Leersia oryzoides*) and Blue Vervain (*Verbena hastata*).

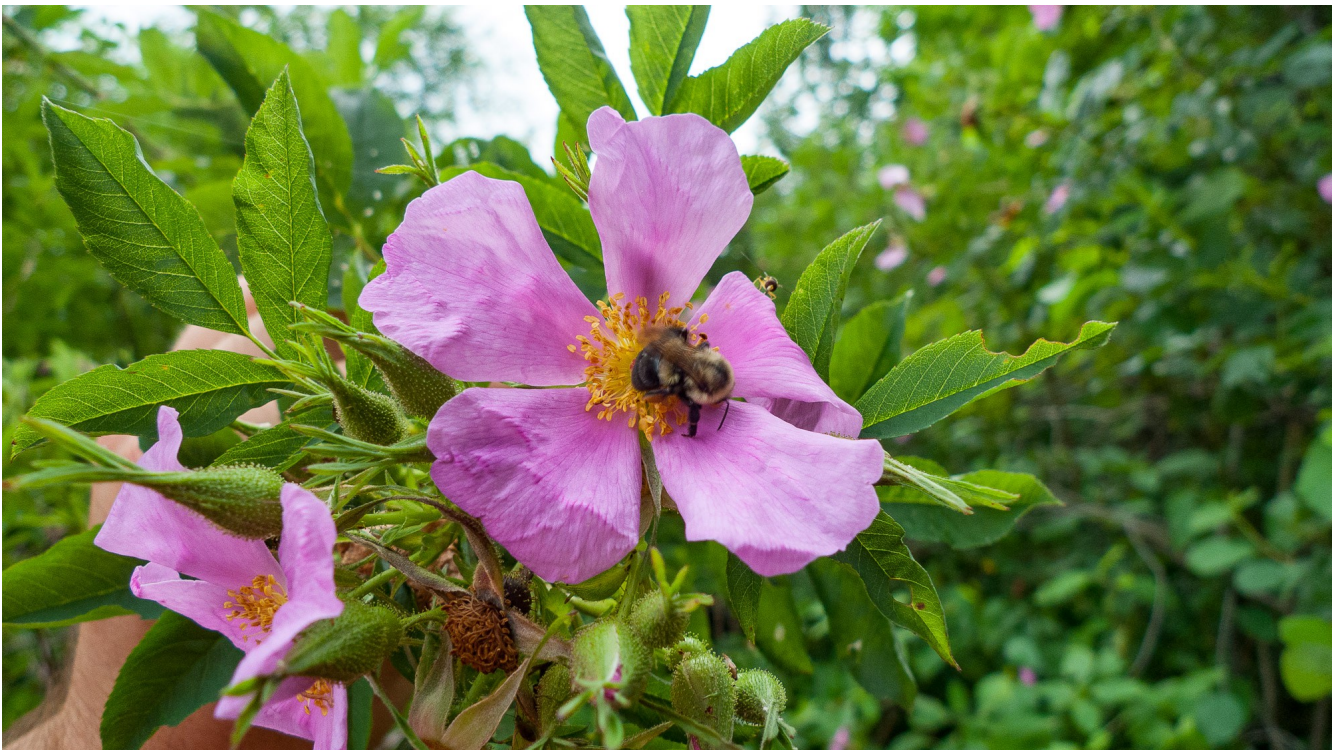


Figure 5: Swamp Rose (*Rosa palustris*) is a beneficial native species abundant in the hedgerows and shrublands. This species provides wildlife cover as well as food for our wild pollinators like this Bumblebee (*Bombus impatiens*).



Figure 6: Southern Agrimony (*Agrimonia parviflora*), a listed Rare Species in NY State, grows mainly along the pasture edges.



Figure 7: NYS Endangered Frank's Sedge (*Carex frankii*).



Figure 8: Ragged Fringed Orchid (*Platanthera lacera*).



Figure 9: Cattle enjoying the shade beneath a large White Willow (*Salix alba*).

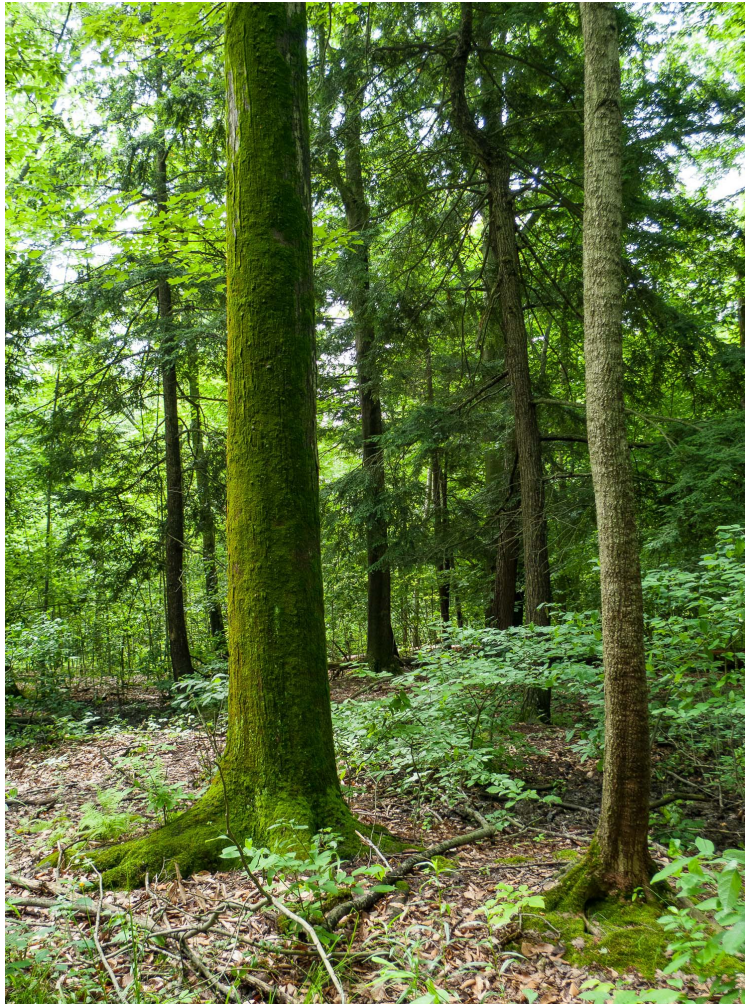


Figure 10: Mixed age structure in the Mature Forest.

Category	Family	N/EX/INV	Species	Common Name	Notes
Graminoid	Acoraceae	EX	<i>Acorus calamus</i>	Sweet Flag	
Shrub	Adoxaceae	N	<i>Sambucus canadensis</i>	Black Elderberry	
Monocot	Alismataceae	N	<i>Alisma subcordatum</i>	Water-Plantain	
Forb	Alliaceae	N	<i>Allium tricoccum</i>	Wild Ramps	
Forb	Amaranthaceae	N	<i>Amaranthus</i> sp	Pigweed	
Tree	Anacardiaceae	N	<i>Rhus typhina</i>	Staghorn Sumac	
Vine	Anacardiaceae	N	<i>Toxicodendron radicans</i>	Poison Ivy	
Forb	Apiaceae	N	<i>Cicuta maculata</i>	Water Hemlock	
Forb	Apiaceae	EX	<i>Daucus carota</i>	Queen Anne's Lace	
Forb	Apocynaceae	N	<i>Apocynum androsaefolium</i>	Spreading Dogbane	
Forb	Apocynaceae	N	<i>Apocynum cannabinum</i>	Indian-Hemp	
Forb	Apocynaceae	N	<i>Asclepias incarnata</i>	Swamp Milkweed	
Forb	Apocynaceae	N	<i>Asclepias syriaca</i>	Common Milkweed	
Forb	Araceae	N	<i>Arisaema triphyllum</i>	Jack-in-the-Pulpit	
Forb	Asteraceae	EX	<i>Ambrosia artemisiifolia</i>	Ragweed	
Forb	Asteraceae	EX	<i>Anthemis cotula</i>	Stinking Chamomile	
Forb	Asteraceae	EX	<i>Arctium</i> sp	Burdock	
Forb	Asteraceae	N	<i>Bidens cernua</i>	Nodding Beggar's Ticks	
Forb	Asteraceae	N	<i>Bidens frondosa</i>	Devil's Beggar's Ticks	
Forb	Asteraceae	EX	<i>Chicorium intybus</i>	Chicory	
Forb	Asteraceae	INV	<i>Cirsium arvense</i>	Creeping Thistle	
Forb	Asteraceae	INV	<i>Cirsium vulgare</i>	Bull Thistle	
Forb	Asteraceae	N	<i>Erigeron annuus</i>	Daisy Fleabane	
Forb	Asteraceae	N	<i>Eupatorium perfoliatum</i>	Boneset	
Forb	Asteraceae	N	<i>Eurybia</i> sp	Wood-Aster	
Forb	Asteraceae	N	<i>Euthamia graminifolia</i>	Grass-Leaved Goldenrod	
Forb	Asteraceae	EX	<i>Gnaphalium uliginosum</i>	Low Cudweed	
Forb	Asteraceae	EX	<i>Leucanthemum vulgare</i>	Oxeye Daisy	
Forb	Asteraceae	EX	<i>Hypochaeris radiata</i>	Common Cat's-Ear	
Forb	Asteraceae	EX	<i>Inula helenium</i>	Elecampane	
Forb	Asteraceae	N	<i>Rudbeckia hirta</i> var. <i>pulcherrima</i>	Black-Eyed Susan	
Forb	Asteraceae	N	<i>Solidago canadensis</i>	Canada Goldenrod	
Forb	Asteraceae	N	<i>Solidago rugosa</i>	Wrinkle-Leaved Goldenrod	
Forb	Asteraceae	N	<i>Solidago</i> sp	Goldenrod	
Forb	Asteraceae	N	<i>Symphiotrichum novae-angliae</i>	New England Aster	
Forb	Asteraceae	N	<i>Symphiotrichum</i> sp	American-Aster	
Forb	Asteraceae	EX	<i>Taraxacum officinale</i>	Common Dandelion	
Forb	Asteraceae	N	<i>Xanthium strumarium</i>	Rough Cocklebur	
Forb	Balsaminaceae	N	<i>Impatiens capensis</i>	Jewelweed	
Shrub	Berberidaceae	INV	<i>Berberis thunbergii</i>	Japanese Barberry	
Forb	Berberidaceae	N	<i>Podophyllum peltatum</i>	Mayapple	
Tree	Betulaceae	N	<i>Betula alleghaniensis</i>	Yellow Birch	
Tree	Betulaceae	N	<i>Betula populifolia</i>	Gray Birch	
Tree	Betulaceae	N	<i>Carpinus caroliniana</i>	American Hornbeam	
Tree	Betulaceae	N	<i>Ostrya virginiana</i>	Hophornbeam	
Forb	Brassicaceae	INV	<i>Alliaria petiolata</i>	Garlic Mustard	
Forb	Brassicaceae	EX	<i>Nasturtium officinale</i>	Watercress	
Forb	Brassicaceae	N	<i>Rorippa palustris</i>	Bog Yellowcress	S4
Forb	Campanulaceae	N	<i>Lobelia cardinalis</i>	Cardinal Flower	
Forb	Campanulaceae	N	<i>Lobelia inflata</i>	Indian Tobacco	
Shrub	Caprifoliaceae	INV	<i>Lonicera</i> sp	Eurasian Bush Honeysuckle Complex	
Shrub	Caprifoliaceae	N	<i>Viburnum lentago</i>	Nannyberry	
Shrub	Caprifoliaceae	N	<i>Viburnum dentatum</i>	Northern Arrowwood	
Forb	Caryophyllaceae	N	<i>Stellaria longifolia</i>	Long-leaved Stitchwort	
Vine	Convolvulaceae	INV	<i>Calystegia sepium</i>	Hedge Bindweed	
Shrub	Cornaceae	N	<i>Cornus amomum</i>	Silky Dogwood	
Graminoid	Cyperaceae	N	<i>Carex blanda</i>	Common Woodland Sedge	
Graminoid	Cyperaceae	N	<i>Carex crinita</i>	Fringed Sedge	
Graminoid	Cyperaceae	N	<i>Carex frankii</i>	Frank's Sedge	NYS Endangered, S2
Graminoid	Cyperaceae	N	<i>Carex gracilescens</i>	Graceful Sedge	
Graminoid	Cyperaceae	N	<i>Carex laxiculmis</i> ssp <i>laxiculmis</i>	Blue-Green Spreading Sedge	
Graminoid	Cyperaceae	N	<i>Carex laxiflora</i>	Loose-Flowered Sedge	
Graminoid	Cyperaceae	N	<i>Carex lupulina</i>	Hop Sedge	
Graminoid	Cyperaceae	N	<i>Carex lurida</i>	Sallow Sedge	
Graminoid	Cyperaceae	N	<i>Carex scoparia</i>	Broom Sedge	
Graminoid	Cyperaceae	N	<i>Carex swanii</i>	Swan's Sedge	
Graminoid	Cyperaceae	N	<i>Carex vulpinoides</i>	Fox Sedge	
Graminoid	Cyperaceae	N	<i>Cyperus esculentus</i>	Yellow Nut-Sedge	
Graminoid	Cyperaceae	N	<i>Eleocharis obtusa</i>	Spike-Rush	
Graminoid	Cyperaceae	N	<i>Schoenoplectus tabernaemontani</i>	Soft-Stemmed Bulrush	
Graminoid	Cyperaceae	N	<i>Scirpus atrovirens</i>	Dark Green Bulrush	
Forb	Fabaceae	EX	<i>Lotus corniculatus</i>	Bird's-Foot Trefoil	
Forb	Fabaceae	EX	<i>Trifolium arvense</i>	White Clover	
Forb	Fabaceae	EX	<i>Trifolium pratense</i>	Red Clover	
Forb	Fabaceae	EX	<i>Vicia villosa</i>	Winter Vetch	
Tree	Fagaceae	N	<i>Fagus grandifolia</i>	American Beech	
Shrub	Grossulariaceae	N	<i>Ribes americanus</i>	Currant	
Shrub	Hamamelidaceae	N	<i>Hamamelis virginiana</i>	Witch Hazel	
Forb	Hypericaceae	N	<i>Hypericum mutilum</i>	Dwarf St. John's Wort	
Forb	Hypericaceae	N	<i>Hypericum perforatum</i>	St. John's Wort	
Forb	Hypericaceae	N	<i>Hypericum punctatum</i>	Spotted St. John's Wort	

Category	Family	N/EX/INV	Species	Common Name	Notes
Forb	Iridaceae	N	Sisyrinchium angustifolium	Blue-Eyed Grass	
Tree	Juglandaceae	N	Carya cordiformis	Bitternut Hickory	
Tree	Juglandaceae	N	Carya ovata	Shagbark Hickory	
Graminoid	Juncaceae	N	Juncus articulatus	Jointed Rush	
Graminoid	Juncaceae	N	Juncus bufonius	Toad Rush	
Graminoid	Juncaceae	N	Juncus dudleyi	Dudley's Rush	
Graminoid	Juncaceae	N	Juncus effusus	Soft Rush	
Graminoid	Juncaceae	N	Juncus tenuis	Path Rush	
Forb	Lamiaceae	N	Lycopus americanus	American Bugleweed	
Forb	Lamiaceae	N	Lycopus uniflorus	Northern Bugleweed	
Forb	Lamiaceae	EX	Mentha spicata	Spearmint	
Forb	Lamiaceae	N	Prunella vulgaris ssp lanceolata	Lance-Leaf Self Heal	
Forb	Lamiaceae	EX	Prunella vulgaris ssp vulgaris	Self-Heal	
Forb	Lamiaceae	N	Scutellaria lateriflora	Side-Flowering Skullcap	
Shrub	Lauraceae	N	Lindera benzoin	Spicebush	
Forb	Lythraceae	EX	Lysimachia nummularia	Creeping Jenny	
Forb	Lythraceae	INV	Lythrum salicaria	Purple Loosetrife	
Tree	Magnoliaceae	N	Liriodendron tulipifera	Tuliptree	
Tree	Malvaceae	N	Tilia americana	American Basswood	
Tree	Oleaceae	N	Fraxinus americana	White Ash	
Tree	Oleaceae	N	Fraxinus pennsylvanica	Green Ash	
Forb	Onagraceae	N	Circaea canadensis	Enchanter's Nightshade	
Forb	Onagraceae	EX	Epilobium hirsutum	Hairy Willow-Herb	
Forb	Onagraceae	EX	Epilobium parviflorum	Willow-Herb	
Forb	Onagraceae	N	Ludwigia palustris	Water-Purslane	
Monocot	Orchidaceae	INV	Epipactis helleborine	Bastard Hellebore	
Monocot	Orchidaceae	N	Platanthera lacera	Ragged-Fringed Orchid	S4
Forb	Oxalidaceae	N	Oxalis stricta	Upright Woodsorrel	
Forb	Phymaceae	N	Mimulus alatus	Winged Monkeyflower	NYS Rare, S3
Forb	Phymaceae	N	Mimulus ringens	Allegheny Monkeyflower	
Shrub	Phytolaccaceae	N	Phytolacca americana	Pokeberry	
Tree	Pinaceae	EX	Picea abies	Norway Spruce	
Tree	Pinaceae	EX	Pinus sylvestris	Scotch Pine	
Tree	Pinaceae	N	Tsuga canadensis	Eastern Hemlock	
Forb	Plantaginaceae	N	Chelone glabra	Turtlehead	
Forb	Plantaginaceae	EX	Plantago lanceolata	Lanceleaf Plantain	
Forb	Plantaginaceae	EX	Plantago major	Broadleaf Plantain	
Forb	Plantaginaceae	N	Plantago rugelii	Rugel's Plantain	
Forb	Plantaginaceae	N	Veronica anagallis-aquatica	Brook-Pimpernel	
Forb	Plantaginaceae	EX	Veronica officinalis	Heath Speedwell	
Forb	Plantaginaceae	EX	Veronica serpyllifolia	Thyme-Leaved Speedwell	
Tree	Platanaceae	N	Platanus occidentalis	American Sycamore	
Graminoid	Poaceae	EX	Agrostis gigantea	Redtop	
Graminoid	Poaceae	EX	Anthoxanthum odoratum	Sweet Vernal-Grass	
Graminoid	Poaceae	EX	Dactylis glomerata	Orchard Grass	
Graminoid	Poaceae	N	Danthonia spicata	Poverty-Grass	
Graminoid	Poaceae		Dichanthelium sp	Rosette Grass	
Graminoid	Poaceae	EX	Echinochloa crus-galli var. crusgalli	Cockspur	
Graminoid	Poaceae	EX	Elymus repens	Quack Grass	
Graminoid	Poaceae	EX	Glyceria maxima	Reed Mannagrass	
Graminoid	Poaceae	N	Glyceria striata	Fowl Mannagrass	
Graminoid	Poaceae	EX	Holcus lanatus	Velvet Grass	
Graminoid	Poaceae	N	Leersia oryzoides	Rice Cutgrass	
Graminoid	Poaceae	EX	Lolium perenne	Perennial ryegrass	
Graminoid	Poaceae	INV	Phalaris arundinacea	Reed Canary Grass	
Graminoid	Poaceae	EX	Phleum pratense	Timothy	
Graminoid	Poaceae	INV	Phragmites australis	Common Reed	
Forb	Polygonaceae	N	Persicaria hydropiper	Water-Pepper	
Forb	Polygonaceae	EX	Persicaria hydropiperoides	Swamp Smartweed	
Forb	Polygonaceae	N	Persicaria maculosa	Lady's Thumb	
Forb	Polygonaceae	N	Persicaria pennsylvanica	Pinkweed	
Vine	Polygonaceae	N	Persicaria sagittata	Arrow-Leaved Tearthumb	
Forb	Polygonaceae	N	Persicaria virginiana	Virginia Jumpseed	
Forb	Polygonaceae	EX	Polygonum aviculare	Common Knotweed	
Forb	Polygonaceae	EX	Rumex acetosella	Sheep Sorrell	
Forb	Polygonaceae		Rumex sp	Dock	
Fern	Polypodiaceae	N	Athyrium filix-femina	Lady Fern	
Fern	Polypodiaceae	N	Dryopteris carthusiana	Spinulose Wood Fern	
Fern	Polypodiaceae	N	Onoclea sensibilis	Sensitive Fern	
Forb	Ranunculaceae	EX	Ranunculus acris	Field Buttercup	
Forb	Ranunculaceae	EX	Ranunculus repens	Creeping Buttercup	
Forb	Ranunculaceae	N	Ranunculus scleratus	Cursed Crow's-Foot	
Shrub	Rhamnaceae	INV	Rhamnus cathartica	Eurasian Buckthorn	
Forb	Rosaceae	N	Agrimonia gryposepala	Agrimony	
Forb	Rosaceae	N	Agrimonia parviflora	Southern Agrimony	NYS Rare, S4
Shrub	Rosaceae	N	Amelanchier arborea/laevis	Serviceberry	
Shrub	Rosaceae	N	Crataegus sp	Hawthorn	
Forb	Rosaceae	N	Fragaria vesca	Wood Strawberry	
Forb	Rosaceae	N	Fragaria virginiana	Virginia Strawberry	

Category	Family	N/EX/INV	Species	Common Name	Notes
Forb	Rosaceae	N	Geum canadense	White Avens	
Tree	Rosaceae	EX	Malus domestica	Apple	
Tree	Rosaceae	EX	Malus sp	Crabapple	
Forb	Rosaceae	EX	Potentilla argentea	Silvery Cinquefoil	
Forb	Rosaceae	EX	Potentilla norvegica	Ternate Cinquefoil	
Forb	Rosaceae	EX	Potentilla simplex	Oldfield Cinquefoil	
Tree	Rosaceae	N	Prunus pensylvanica	Fire Cherry	
Tree	Rosaceae	N	Prunus serotina	Black Cherry	
Tree	Rosaceae	EX	Pyrus sp	Pear	
Shrub	Rosaceae	INV	Rosa multiflora	Multiflora Rose	
Shrub	Rosaceae	N	Rosa palustris	Swamp Rose	
Shrub	Rosaceae	N	Rubus allegheniensis	American Blackberry	
Shrub	Rosaceae	N	Sorbus sp	Mountain-Ash	
Forb	Rubiaceae	N	Galium aparine	Cleavers	
Forb	Rubiaceae	EX	Galium mollugo	Wild Madder	
Forb	Rubiaceae	N	Galium tinctorium	Three-Petaled Bedstraw	
Tree	Salicaceae	N	Populus deltoides	Eastern Cottonwood	
Tree	Salicaceae	N	Populus grandidentata	Bigtooth Aspen	
Tree	Salicaceae	N	Populus tremuloides	Quaking Aspen	
Tree	Salicaceae	N	Salix alba	White Willow	
Tree	Sapindaceae	N	Acer rubrum	Red Maple	
Tree	Sapindaceae	N	Acer saccharum	Sugar Maple	
Tree	Sapindaceae	N	Acer x freemanii	Freeman's Maple	
Forb	Scrophulariaceae		Verbascum blattaria	Moth Mullein	
Vine	Smilacaceae	N	Smilax rotundifolia	Greenbrier	
Forb	Solanaceae	N	Solanum carolinense	Horse Nettle	
Vine	Solanaceae	EX	Solanum dulcamara	Bittersweet Nightshade	
Forb	Solanaceae	N	Solanum ptychanthum	Eastern Black Nightshade	
Fern	Thelypteridaceae	N	Thelypteris noveboracensis	New York Fern	
Fern	Thelypteridaceae	N	Thelypteris palustris	Marsh Fern	
Forb	Theophrastaceae	N	Samolus valerandi (ssp parviflorus?)	Water Pimpernel	S4
Graminoid	Typhaceae	INV	Typha angustifolia	Narrow-Leaved Cattail	
Graminoid	Typhaceae	INV	Typha x glauca	Hybrid Cattail	
Tree	Ulmaceae	INV	Ulmus pumila	Siberian Elm	
Tree	Ulmaceae	N	Ulmus americana	American Elm	
Forb	Urticaceae	N	Pilea pumila	Canada Clearweed	
Forb	Verbenaceae	N	Verbena hastata	Blue Vervain	
Forb	Violaceae	N	Viola sororia	Common Blue Violet	
Vine	Vitaceae	N	Parthenocissus quinquefolius	Virginia Creeper	
Vine	Vitaceae	N	Vitis aestivalis	Summer Grape	
Forb	Dipsacaceae	EX	Dipsacus Sylvestris	Teasel	