A Preliminary Natural Features Inventory of Henry Fine Park, East Lansing, Michigan

Prepared by:
Ryan P. O'Connor

Michigan Natural Features Inventory
P.O. Box 30444
Lansing, MI 48909-7944

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East Lansing Parks and Recreation Department

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Cover image: Looking north along a wet swale in Henry Fine Park.

Introduction

On March 14, 2008, a survey was conducted of Henry Fine Park to identify natural plant communities and to determine their relative quality. Preliminary plant lists were compiled for each community, but due to the early date of the survey they are not comprehensive and include mostly woody species. Several natural features of potential interest were located and mapped, and animals or evidence of animal activity was recorded.

Overview

On a broad scale, much of Ingham County lies on the Lansing Till Plain (sub-subsection VI.4.1, after Albert 1995), an expansive ground moraine deposited by glaciers. The landscape consists of gently rolling hills with relatively rich soil interspersed with shallow forested and non-forested wetlands. Henry Fire Park contains both of these upland and lowland features, with much of the forested area being a southern hardwood swamp dominated by silver maple (*Acer saccharinum*). Small pockets of mesic southern forest lie adjacent on slightly higher ground. A small but notable feature in the park is a pond, drained by a low swale running northward toward a large county drain, which forms the northern boundary of the park. Several other additional small wetlands, including an emergent marsh and an area of southern shrub-carr are also present. An extensive maintained lawn with scattered trees dominates the remainder of the park. All sites were assigned a letter code that corresponds to a map of the park (see page 9) and the description of the plant communities below. For a complete list of species found at each site, please refer to the tables on pages 5-8.

Plant Communities

A: Silver Maple Southern Swamp

The most prominent forest in the park is a southern swamp dominated by silver maple with lesser amounts of scattered eastern cottonwood (*Populus deltoides*). Trees range in size from 12 to 24 inches in diameter, often with large branching trunks comprised of several stems of impressive size. Soils of the swamp are seasonally wet, and standing water was present at the time of the survey. The forest understory (small trees and shrubs) is relatively sparse and is heavily dominated by common buckthorn (*Rhamnus cathartica*) and glossy buckthorn (*Rhamnus frangula*), both non-native invasive shrubs that displace native plants such as green ash (*Fraxinus pennsylvanica*), elderberry (*Sambucus canadensis*), and silky dogwood (*Cornus amomum*), which are present but occur in lesser amounts. Relatively few herbaceous plants were encountered due to the timing of the survey, but species such as false nettle (*Boehmeria cylindrica*) and sensitive fern (*Onoclea sensibilis*) appeared to dominate the groundcover, along with other less common species such as white avens (*Geum canadense*), poison ivy (*Toxicodendron radicans*), and fowl manna grass (*Glyceria striata*). Small patches of the non-native invasive species garlic mustard (*Alliaria petiolata*) and dame's rocket (*Hesperium matronalis*) were also found in the forest interior, and garlic mustard was very prevalent along the edges of the swamp at the transition to the upland. The primary management need in this community is controlling invasive species.

Large trees with multiple trunks are common in the silver maple southern swamp.

B: Red Oak Mesic Southern Forest

Bordering the silver maple southern swamp to the north and west is a mesic southern forest dominated by red oak (*Quercus rubra*) of impressive size, with several being 24 inches or more in diameter. Slightly higher in elevation, the soils of this portion of the forest are not seasonally inundated but rather are moderately well-drained, retaining sufficient water for plant growth without being too wet. Due to its close proximity to the swamp and relatively rich, moist soils, silver maple also comprises much of the forest canopy, especially along the western portion of the mesic forest. Several species of trees and shrubs were found that occurred only in this portion of the park. In the overstory, this included basswood (*Tilia americana*) in addition to the dominant red oak. The understory had similarly unique species, including shagbark hickory

Red oaks of impressive size occur in the mesic forest.

(*Carya ovata*), sugar maple (*Acer saccharum*), northern hackberry (*Celtis occidentalis*) and alternate-leaved dogwood (*Cornus alternifolia*), all indicators of high-quality mesic soils. White ash (*Fraxinus americana*) and box elder (*Acer negundo*) were also present. Unfortunately, common buckthorn was also abundant throughout the understory. Particularly large buckthorn were present along the forest edge and are a source of abundant fruit that furthers the spread of this invasive species to new areas of the park. The groundcover was again difficult to assess due to the early time of the survey, but appeared to be dominated by white avens, beggar's-lice (*Hackelia virginiana*), and garlic mustard. One notable plant found in the groundcover was running strawberry bush (*Euonymus obovata*), a low woody species also indicative of a high-quality site with rich mesic soils. It is named for the unique fruit, comprised of a bright pink capsule that opens in the fall to reveal a scarlet aril (a berry-like structure containing seeds). As mentioned above, garlic mustard was very prevalent, and periwinkle (*Vinca minor*), an invasive groundcover commonly used in landscaping was also found adjacent to some housing lots. As in the adjacent swamp, the primary management need in the mesic forest is controlling invasive species.

C. Hawthorn Pond and Willow Swale

A small pond lies nested along the northwest corner of the forest and is drained by a low swale running northward to the Remy-Chandler Drain. Topographic maps indicate that the pond may be man-made, although it is quite likely that a naturally occurring wetland was simply excavated to in an attempt to facilitate drainage or store rainwater runoff. The vegetation immediately surrounding the pond is largely comprised of grassy herbaceous vegetation, and is dominated by reed canary grass (*Phalaris arundinacea*). Several trees also line the margins of the pond and swale, including silver maple, American elm (*Ulmus americana*), and willow (*Salix* spp.). A small stand of hawthorns also lie along the western edge of the pond near a foot trail, the only place in the park this unique tree was found. The low swale running north from the pond was almost entirely dominated by herbaceous vegetation, including reed canary grass, Joe-pye-weed (*Eupatorium maculatum*), boneset (*Eupatorium perfoliatum*), asters (*Aster* spp.), and swamp milkweed (*Asclepias incarnata*). Several species of shrubs were also present, including elderberry, glossy buckthorn, common buckthorn, silky dogwood, and a single plant of firethorn (*Pyracantha coccinea*), an ornamental species likely planted or escaped from nearby landscaping. Management issues in this community include addressing a small area of erosion near the southwest corner of the pond where water from a municipal storm sewer appears to be overflowing the manhole cover and washing soil into the pond. Secondly, along the eastern portion of the swale, mowing equipment appeared to be causing compaction and potential erosion of the wet soil. An alternative approach might be to leave an additional 10 to 15 yard buffer zone of unmowed vegetation, similar to the western side of the swale. This minimizes erosion potential and facilitates better water quality by

Looking south along the wet swale, natural vegetation on the western slope allows rainwater runoff to be filtered and provides important habitat for wildlife.

allowing water to be filtered of excess nutrients prior to entering the drain, as well as providing more habitat for wildlife such as frogs, turtles and small mammals.

D: Gilcrest Cattail Marsh

A small cat-tail marsh is located in the southwest corner of the park near Gilcrest Drive. It is dominated by the non-native narrow-leaf cattail (*Typha angustifolia*), sandbar willow (*Salix exigua*), sedges, asters, and other wetland plants along the edges. The site appears to be relatively open in the middle, and likely is an important site for frogs and other semi-aquatic wildlife species. Other than the narrow-leaf cat-tail, there were no major management issues noted for this community.

E: Groton Way Shrub-Carr

Opposite the swale and across a narrow band of maintained lawn lies a small shrub-carr wetland. It is dominated by shrubs such as pussy willow (*Salix discolor*), silky dogwood, gray dogwood (*Cornus foemina*), elderberry, and glossy buckthorn. Riverbank grape (*Vitis riparia*) is also common. A handful of large trees (silver maple and American elm) border the wetland, and common buckthorn also dominates along the southern edge. Portions of the wetland are more open and are dominated by herbaceous plants including reed canary grass, lake sedge (*Carex lacustris*), nettle (*Urtica dioica*), Joe-pye-weed, and Indian-hemp (*Apocynum cannabinum*). Invasive species were the only major management issue in this area.

F: Remy-Chandler Drain

Although not a high-quality natural area, the drain that forms the northern border of the park is a significant made-made feature of the park. The steep slopes of the drain are mostly dominated by herbaceous vegetation like reed canary grass. Numerous native trees and shrubs are also scattered along the edge drain including box elder, cottonwood, green ash, pussy willow, silky dogwood, and red-osier dogwood (*Cornus stolonifera*). Invasive shrubs were also common and included common buckthorn, Morrow's honeysuckle (*Lonicera morrowii*), autumn-olive (*Elaeagnus umbellata*), and burning bush (*Euonymus alata*), a popular landscaping species known to escape from cultivation.

G: Lawn

A large majority of the non-forested areas of the park are maintained as lawn with scattered trees. Most of these areas are slightly higher in elevation than the surrounding habitat and therefore have better drainage. Trees scattered throughout this area include both white ash and green ash, silver maple, Norway maple (*Acer platanoides*), a thornless cultivar of honey locust (*Gleditsia triacanthos* var. *inermis*), cottonwood, and various planted conifers near park entrances, including white spruce (*Picea glauca*), Norway spruce (*Picea abies*), and white pine (*Pinus strobus*). Although no obvious signs of emerald ash borer (EAB) were seen (such as plants sprouting from the base or D-shaped exit holes in the bark), EAB has been found in the Lansing area and ash trees in the park have a high likelihood of succumbing to the borer. Preventative chemical treatment is available for saving individual specimens. It should also be noted that the edges of the lawn contain several invasive species in addition to the native species representative of bordering habitat. These invasive species are of particular concern due to the fact that they receive abundant light on the forest edge and fruit prolifically. In addition, their location on the edge also facilitates dispersal to additional areas both by wildlife (e.g. birds eating abundant fruit and spreading the seeds to new areas), as well as by people (e.g. lawnmowers dragging seeds to new areas, sticky seeds getting stuck in the clothing of hikers, etc.). The most problematic of these edge invasive species include the shrubs common buckthorn and glossy buckthorn, and the herbaceous plant hedge parsley (*Torilis japonica*).

The maintained lawn is an important area for recreation and wildlife viewing.

Wildlife

A complete wildlife inventory was not conducted, but incidental observations were noted during the survey of the park. A large number of eastern gray squirrels (mostly of the black or melanistic phase) were observed in the red oak mesic forest. This area appears to provide particularly good habitat, having both large trees with cavities in which to raise young as well as a source of food from acorns and hickory nuts. The only other mammals observed were several eastern cottontails in thick brush along the edges of the lawn. Numerous birds were seen and heard, including downy woodpecker, black-capped chickadee, cardinal, robin, blue jay, goldfinch, and house sparrow. Two pairs of mallards were also seen in the Remy-Chandler Drain. A neighboring landowner also reported seeing several mammals over the fall and winter, including numerous white-tailed deer, a red fox, and a woodchuck. The park undoubtedly provides habitat for a much larger variety of animals, but no others were observed due in part to the late spring and cold weather on the day of the survey.

Natural Features

The highest quality area in the park is the forested swamp and adjacent upland mesic forest. Although invasive species are present, the overstory is healthy and the forest cover provides excellent habitat for a wide variety of wildlife. In particular, there are several very large trees of red oak and silver maple with multiple-stemmed trunks, forming exceptionally large bases. In coming months, the swamp and adjacent wet openings (such as the cat-tail marsh) will likely host a chorus of frogs calling in the evenings, and provide a roost for bats. It is estimated that a single bat can consume over one thousand insects each night, providing an important ecosystem service and benefiting local residents and park users. Overall, this forested area of the park is especially worth conserving.

Other significant areas of the park including the Groton Way shrub-carr, which provides unique habitat for birds, and the pond and swale, which ranks high in importance for wildlife habitat as well as for preserving high water quality.

Threats

Non-native invasive plant species are the primary threats to the natural areas of the park. The silver maple swamp and adjacent red oak forest are the primary forested areas in the park and would benefit the most from removal of invasive species. This includes both herbaceous species like garlic mustard and dame's rocket, as well as woody shrubs like common buckthorn and common buckthorn. However, these species are well-established in this area and complete eradication would be difficult. A critical aspect of invasive species management is using a triage approach to prioritizing sites for control, based on feasibility and benefits to high-quality natural areas. Sites that are high in quality but have relatively few invasives should be targeted first. Due to the high level of infestation, it may be wise to focus control efforts at other parks with smaller infestations in order to have the largest impact with limited resources.

Notably, only one autumn-olive was found in the park, located along the drain. Similarly, only one plant of multiflora rose (*Rosa multiflora*) was found, located along the western slope of the swale. Hedge parsley also appeared to be relatively uncommon, occurring primarily along the edges of the lawn. Although these species do not occur in high quality natural areas, their control would be relatively easy and would likely save time and money in the future. It is highly recommended that public education be a part of any invasive species control strategy, with press releases and signage describing why invasives are a problem, and how native species will benefit from their removal.

Conclusion

No rare species or high quality natural communities significant from a state-wide perspective were found in Henry Fine Park. A large number of species were undetectable due to the early timing of the survey, however, and a more thorough survey during the growing season could better determine if rare plants or animal are present. The potential habitat for most rare species is somewhat limited, but the best areas to target for future inventory would likely be the silver maple swamp and adjacent red oak mesic southern forest.

Henry Fine Park appears to provide excellent opportunities for recreation and wildlife viewing. Some interpretive signage explaining the natural features of the park and the threats to them would likely benefit park users. Overall, the park offers important natural areas, provides habitat for wildlife, and local recreational opportunities in a largely urbanized local environment.

Species lists

A list of plant species observed was compiled for each site. Only one survey was conducted in early spring, and the species list should not be considered a thorough inventory or a comprensive survey for rare species.

Non-native species are listed in all caps. In the lifeform column, the abbreviations are as follows:
Nt - native; Ad - adventive (non-native)
P - perennial; B - biennial; W - woody

Thus, Nt W-Vine is a native woody vine, Ad P-Grass is an adventive perennial grass, etc.

Site A. Species found in silver maple southern swamp

Scientific Name	Common Name	Lifeform
Acer saccharinum	silver maple	Nt Tree
ALLIARIA PETIOLATA	GARLIC MUSTARD	Ad B-Forb
Aster lateriflorus	side-flowering aster	Nt P-Forb
Boehmeria cylindrica	false nettle	Nt P-Forb
Cornus amomum	silky dogwood	Nt Shrub
Cornus stolonifera	red-osier dogwood	Nt Shrub
Fraxinus pennsylvanica	green ash	Nt Tree
Geum canadense	white avens	Nt P-Forb
Glyceria striata	fowl manna grass	Nt P-Grass
HESPERIS MATRONALIS	DAME'S ROCKET	Ad P-Forb
Menispermum canadense	moonseed	Nt W-Vine
Onoclea sensibilis	sensitive fern	Nt Fern
Phytolacca americana	pokeweed	Nt P-Forb
Populus deltoides	cottonwood	Nt Tree
Quercus bicolor	swamp white oak	Nt Tree
RHAMNUS CATHARTICA	COMMON BUCKTHORN	Ad Tree
RHAMNUS FRANGULA	GLOSSY BUCKTHORN	Ad Shrub
Sambucus canadensis	elderberry	Nt Shrub
Toxicodendron radicans	poison ivy	Nt W-Vine
Ulmus americana	American elm	Nt Tree
Viburnum opulus var. americanum	highbush cranberry	Nt Shrub
Vitis riparia	riverbank grape	Nt W-Vine

Site B. Species found in red oak mesic southern forest.

Scientific Name	Common Name	Lifeform
Acer negundo	box elder	Nt Tree
Acer saccharinum	silver maple	Nt Tree
Acer saccharum	sugar maple	Nt Tree
ALLIARIA PETIOLATA	GARLIC MUSTARD	Ad B-Forb
Carya ovata	shagbark hickory	Nt Tree
Celtis occidentalis	northern hackberry	Nt Tree
Cornus alternifolia	alternate-leaved dogwood	Nt Tree
Euonymus obovata	running strawberry bush	Nt Shrub
Fraxinus americana	white ash	Nt Tree
Geum canadense	white avens	Nt P-Forb
Hackelia virginiana	beggar's-lice	Nt P-Forb
LONICERA MORROWII	MORROW'S HONEYSUCKLE	Ad Shrub
Populus deltoides	cottonwood	Nt Tree
Prunus serotina	wild black cherry	Nt Tree
Quercus rubra	red oak	Nt Tree
RHAMNUS CATHARTICA	COMMON BUCKTHORN	Ad Tree
Sambucus canadensis	elderberry	Nt Shrub
Tilia americana	basswood	Nt Tree
Ulmus americana	American elm	Nt Tree
VINCA MINOR	PERIWINKLE	Ad Shrub

Site C. Species found in hawthorn pond and willow swale.

Scientific Name	Common Name	Lifeform
Acer saccharinum	silver maple	Nt Tree
ALLIARIA PETIOLATA	GARLIC MUSTARD	Ad B-Forb
Asclepias incarnata	swamp milkweed	Nt P-Forb
Aster spp.	asters	Nt P-Forb
BROMUS INERMIS	smooth brome	Ad P-Grass
Cornus amomum	silky dogwood	Nt Shrub
Crateagus sp.	hawthorn	Nt Tree
DAUCUS CAROTA	QUEEN ANNE'S LACE	Ad B-Forb
Eupatorium maculatum	joe-pye-weed	Nt P-Forb
Eupatorium perfoliatum	common boneset	Nt P-Forb
Oenothera sp.	evening-primrose	Nt P-Forb
Phalaris arundinacea	reed canary grass	Nt P-Grass
Populus deltoides	cottonwood	Nt Tree
PYRACANTHA COCCINEA	FIRETHORN	Ad Shrub
RHAMNUS CATHARTICA	COMMON BUCKTHORN	Ad Tree
RHAMNUS FRANGULA	GLOSSY BUCKTHORN	Ad Shrub
ROSA MULTIFLORA	MULTIFLORA ROSE	Ad Shrub
Salix amygdaloides	peach-leaved willow	Nt Tree
Sambucus canadensis	elderberry	Nt Shrub
Solidago altissima	tall goldenrod	Nt P-Forb
Urtica dioica	nettle	Nt P-Forb
VERBASCUM THAPSUS	COMMON MULLEIN	Ad B-Forb
Vitis riparia	riverbank grape	Nt W-Vine

Site D. Species found in Gilcrest cattail marsh.

Scientific Name	Common Name	Lifeform
Aster spp.	asters	Nt P-Forb
Carex spp.	sedges	Nt P-Sedge
Salix exigua	sandbar willow	Nt Shrub
TYPHA LATIFOLIA	NARROW-LEAF CATTAIL	Ad B-Forb

Site E. Species found in Groton Way shrub-carr.

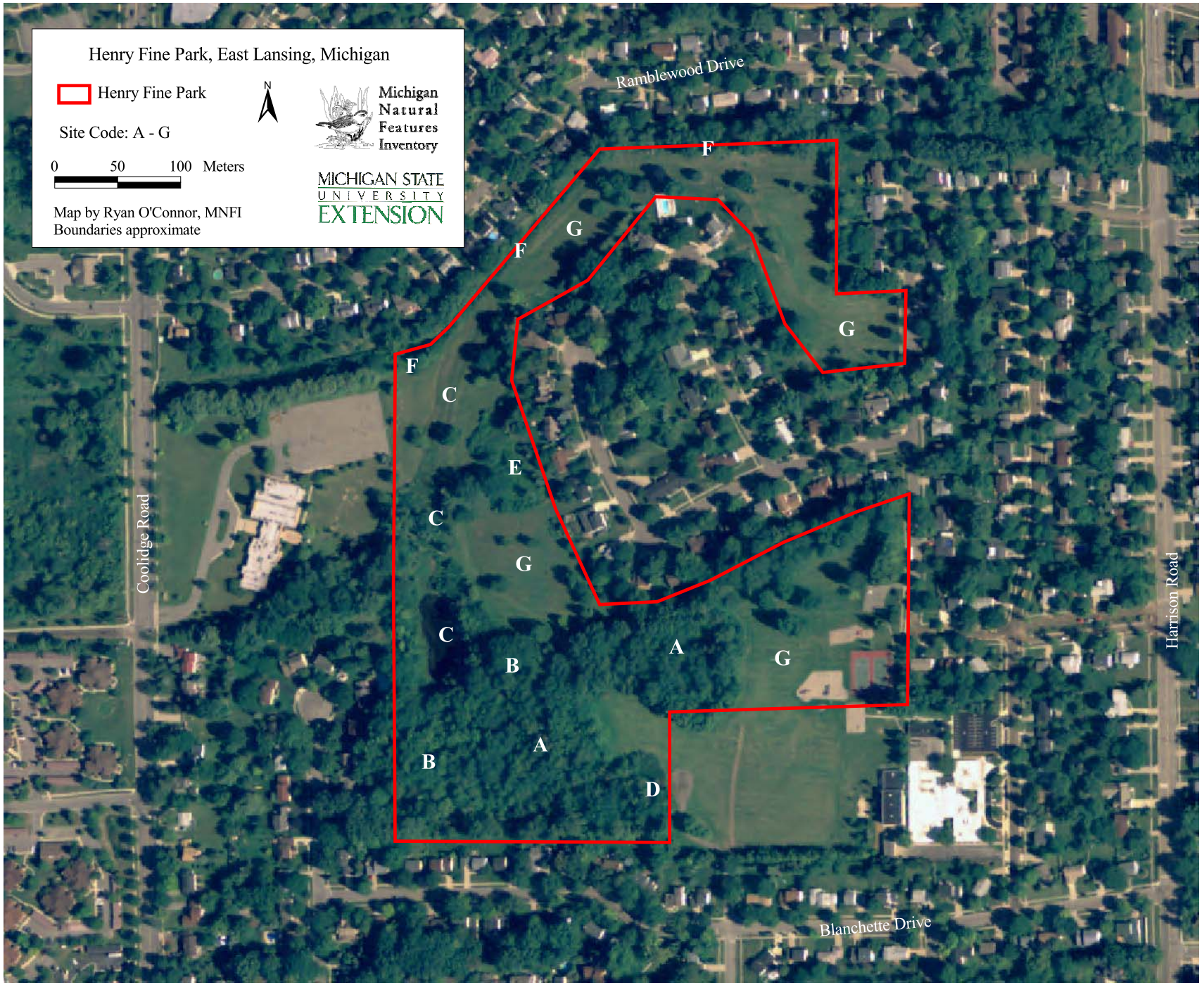
Scientific Name	Common Name	Lifeform
Acer negundo	box elder	Nt Tree
Acer saccharinum	silver maple	Nt Tree
ALLIARIA PETIOLATA	GARLIC MUSTARD	Ad B-Forb
Apocynum cannabinum	Indian hemp	Nt P-Forb
Carex lacustris	sedge	Nt P-Sedge
Cornus amomum	silky dogwood	Nt Shrub
Cornus foemina	gray dogwood	Nt Shrub
Eupatorium maculatum	joe-pye-weed	Nt P-Forb
Juglans nigra	black locust	Nt Tree
MORUS ALBA	white mulberry	Ad Tree
Phalaris arundinacea	reed canary grass	Nt P-Grass
RHAMNUS CATHARTICA	COMMON BUCKTHORN	Ad Tree
RHAMNUS FRANGULA	GLOSSY BUCKTHORN	Ad Shrub
Rubus occidentalis	black raspberry	Nt Shrub
Salix discolor	pussy willow	Nt Shrub
Sambucus canadensis	elderberry	Nt Shrub
Ulmus americana	American elm	Nt Tree
Urtica dioica	nettle	Nt P-Forb
Vitis riparia	riverbank grape	Nt W-Vine

Site F. Species found along Remy-Chandler drain.

Scientific Name	Common Name	Lifeform
Acer negundo	box elder	Nt Tree
ALLIARIA PETIOLATA	GARLIC MUSTARD	Ad B-Forb
Apocynum cannabinum	Indian hemp	Nt P-Forb
ARCTIUM MINUS	common burdock	Ad B-Forb
Cornus amomum	silky dogwood	Nt Shrub
Cornus stolonifera	red-osier dogwood	Nt Shrub
ELAEAGNUS UMBELLATA	AUTUMN-OLIVE	Ad Shrub
EUONYMUS ALATA	WINGED WAHOO; BURNING BUSH	Ad Shrub
Fraxinus pennsylvanica	green ash	Nt Tree
Gleditsia triacanthos var. inermis	honey locust	Nt Tree
LONICERA MORROWII	MORROW'S HONEYSUCKLE	Ad Shrub
Phalaris arundinacea	reed canary grass	Nt P-Grass
Populus deltoides	cottonwood	Nt Tree
RHAMNUS CATHARTICA	COMMON BUCKTHORN	Ad Tree
Salix discolor	pussy willow	Nt Shrub
Sambucus canadensis	elderberry	Nt Shrub
Solidago altissima	tall goldenrod	Nt P-Forb
Urtica dioica	nettle	Nt P-Forb
Vitis riparia	riverbank grape	Nt W-Vine

Site G. Species found in and along edge of lawn.

Scientific Name	Common Name	Lifeform
ACER PLATANOIDES	NORWAY MAPLE	Ad Tree
Acer saccharinum	silver maple	Nt Tree
Fraxinus americana	white ash	Nt Tree
Fraxinus pennsylvanica	green ash	Nt Tree
Gleditsia triacanthos var. inermis	honey locust	Nt Tree
PICEA ABIES	NORWAY SPRUCE	Ad Tree
Picea glauca	white spruce	Nt Tree
Pinus strobus	white pine	Nt Tree
RHAMNUS CATHARTICA	COMMON BUCKTHORN	Ad Shrub
RHAMNUS FRANGULA	GLOSSY BUCKTHORN	Ad Shrub
TORILIS JAPONICA	HEDGE PARSLEY	Ad B-Forb


Henry Fine Park, East Lansing, Michigan
Henry Fine Park
Site Code: A - G
0 50 100 Meters
Map by Ryan O'Connor, MNFI
Boundaries approximate
N
Michigan Natural Features Inventory
MICHIGAN STATE UNIVERSITY EXTENSION
Ramblewood Drive
Coolidge Road
Harrison Road
Blanchette Drive
F
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