Black Oak Heritage Park
Management Plan



Prepared for:
The City of Windsor

Site Location:
Black Oak Heritage Park
Ojibway Pkwy, Windsor, ON N9A 6S1

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1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

Ojibway Prairie Complex is a collection of five closely situated natural areas. The City of Windsor's Department of Parks' Ojibway Nature Centre administers four of these areas: Ojibway Park, Tallgrass Prairie Heritage Park, Black Oak Heritage Park, and Spring Garden Natural Area, which total approximately 250 hectares. Collectively, these sites are designated as the Ojibway Prairie Remnants Area of Natural and Scientific Interest (ANSI). The nearby Ojibway Prairie Provincial Nature Reserve, owned and managed by Ontario Parks, adds more than 105 hectares of additional prairie and savannah habitat. The total area is continually growing as the City of Windsor and Province of Ontario acquire more land for protection. The most striking aspect of the Ojibway Prairie Complex is the tremendous variety of its vegetation and animal life. Wetlands, forest, savannah and prairie provide habitat for a great number of rare plants, insects, reptiles, amphibians, birds and mammals.

Of the five natural areas which make up the Ojibway Prairie Complex, Black Oak Heritage Park (the "Park") is located closest to the Detroit River. Black Oak Heritage Park is 84 hectares natural area of land that is rich in cultural and natural heritage. The Park contains one of the largest stands of Black Oak Savannah, which is one of the most endangered habitats in Canada. This unique natural area in the City of Windsor includes large old growth trees, as well as tallgrass prairie and native plants that are extremely rare across Canada. A large diversity of wildlife, rare butterflies and nesting birds, such as the Hackberry Emperor and Acadian Flycatcher also call Black Oak Heritage Park home.

Black Oak Heritage Park is provincially designated as a Provincially Significant Wetland (PSW) and is part of the Ojibway Prairie Remnants Area of Natural and Scientific Interest (ANSI). On a municipal level, the Park is designated as Natural Heritage in the City of Windsor's Official Plan. It is an Environmentally Significant Area (Essex Region Conservation Authority), an Important Amphibian and Reptile Area (Canadian Amphibian and Reptile Conservation Network), and is on the Western Lake Erie Watersheds Priority Natural Area Registry (City of Windsor, Essex Region Conservation Authority, US Fish and Wildlife Service, Detroit River International Wildlife Refuge). Black Oak Heritage Park strengthens biodiversity in the region and provides a unique park that can be enjoyed by the local community and visitors alike.

1.2 GOALS AND OBJECTIVES

Municipal policy outlined in the City of Windsor Official Plan requires that the municipality prepare a Conservation and Management Plan for municipality-owned lands which are designated as Natural Heritage. Black Oak Heritage Park is designated as Natural Heritage because the Park provides the protection and conservation of Windsor's most environmentally significant and sensitive natural areas, including provincially designated Areas of Natural and Scientific Interest (ANSI) and Provincially Significant Wetlands (PSW). The following objectives and policies outlined in Section 6.8.1 of the Official plan establish the framework for lands designated as Natural Heritage:

1. To protect, conserve and improve Windsor's most environmentally significant and sensitive natural areas;

2. To provide opportunities for recreational uses within Natural Heritage areas; and
3. To link Natural Heritage areas to other components of the Greenway System.

Permitted uses of lands designated as Natural Heritage include nature reserves and wildlife management. The Council may permit ancillary uses such as recreation, leisure activities and facilities without requiring an amendment to the Plan provided that the ancillary use is clearly incidental and secondary to, and complementary with, the main Natural Heritage. Additionally, the ancillary use must not negatively impact the natural features and functions of the site.

Policy outlined in a secondary City of Windsor municipal document (Rediscover our Parks: Parks and Outdoor Recreation Master Plan) also states the need to create a Performance and Management Plan to determine high priority natural park such as Ojibway Nature Complex.

This Management Plan will summarize the ecological significance of the flora, fauna and natural heritage features found within Black Oak Heritage Park based on a review and analysis of current and historical data. Additionally, this document is intended to guide future management activities to enhance or restore diminished Tallgrass Woodland, Savannah and Prairie habitat for rare and Provincially Significant flora and fauna. The goal of this Management Plan is to provide recommendations for the protection and restoration of the most productive and fragile ecosystems within Black Oak Heritage Park.

1.3 WORK PLAN

Sage Earth was retained by The City of Windsor to complete a Management Plan for Black Oak Heritage Park. Sage Earth conducted a background review and field investigations which included surveying the existing flora and fauna and associated habitats within Black Oak Heritage Park. This report provides an overview of the existing site conditions and applicable policies, and provides management and restoration recommendations with respect to Black Oak Heritage Park.

Sage Earth's work plan consisted of completing the following tasks:

1. Consultation with the City of Windsor, Public, Essex Region Conservation Authority (ERCA), Ministry of Natural Resources and Forestry (MNRF), Natural Heritage Information Centre (NHIC) and local biologists;
2. Completion of a background review of existing information regarding Black Oak Heritage Park to identify data gaps;
3. Field investigations to identify flora and fauna species, classification of vegetation communities and recording the locations of Species at Risk and Provincially Significant species within Black Oak Heritage Park;
4. Completion of a Natural Areas Management Plan for Black Oak Heritage Park suitable for distribution to the City of Windsor, ERCA, MNRF and the public.

1.4 METHODOLOGIES

A field investigation of the flora and fauna species within Black Oak Heritage Park was conducted by Sage Earth in 2018.

Detailed site assessments included the following activities:

1. **Field Surveys:**
   i. Conduct field surveys for flora, wildlife, habitat features, and Species at Risk;

2. **Flora and Vegetation Communities:**
   i. Run detailed analyses of the plant composition, structure and function in each vegetation community present at the site; and,
   ii. Assess vegetation community habitat quality.

3. **Disturbance Regimes and Ecological Stressors:**
   i. Classify and analyse past disturbance regimes for the purpose of assessing management requirements to address the ecological stressors.

4. **Species at Risk:**
   i. Identify, locate, delineate and comment on significant natural heritage features including Species at Risk individuals and habitat, ecological functions and linkages.

1.5 HISTORICAL CONDITIONS

Sage Earth completed a background review to determine the historical conditions of Black Oak Heritage Park using aerial photo interpretation, personal communications and a literature review of available resources.

The background review revealed that Black Oak Heritage Park historically contained 47 rare plants that have since been extirpated from the area (i.e. have become locally extinct) or are considered Provincially Rare or Species at Risk. It is important to note that while some of these species were no longer documented in Black Oak Heritage Park during 2018 field studies, they may have been overlooked or they may be present within the seedbank.

Between 1976 and 2018 Black Oak Heritage Park and adjacent lands contained a diversity of Provincially Rare or Species at Risk fauna including 49 birds, one mammal, two reptiles, two crustaceans, eight odonatans and three lepidopterans. While some of these species still exist in Black Oak Heritage Park today, many have become locally extirpated or have not seen in many years.

An aerial photo from 1948 suggests that the Park likely consisted of ten Ecological Land Classification (ELC) communities. Over time these communities have faced several ecological stressors that have altered the diversity, distribution and abundance of plants and animals. These stressors include dirt roads, earth displacement from cleared land, tracks and trails, agricultural land development, recreational uses, fire suppression, woody plant succession, invasive species, and changes in hydrology such as dug ponds and drains.

Future habitat restoration may provide suitable habitat to encourage the establishment of historic flora and fauna species and improve the habitat for rare species currently residing in Black Oak Heritage Park.

1.6 EXISTING CONDITIONS

1.6.1 Natural Heritage Features

Black Oak Heritage Park supports a woodland feature, a Provincially Significant Wetland (PSW) known as the Black Oak Wetland Complex, and a Life Science Area of Natural and Scientific Interest (ANSI) known as the Ojibway Prairie Remnants (Black Oak Woods). Black Oak Heritage Park is connected to the Detroit River by a restored watercourse on the northwest corner of the property that is approximately 760 m long. The soils within Black Oak Heritage Park are composed of Burford Loam (Bg) and Granby Sand (Gs). Burford Loam is a slightly stony soil that is well drained and Granby Sand is a non-stony soil that is poorly drained.

1.6.2 Flora and Vegetation Communities

Black Oak Heritage Park contains 18 Ecological Land Classification (ELC) communities. Three of these communities are considered Provincially Significant and receive an S-rank between S1 and S3. Additionally, Black Oak Heritage Park contains three tallgrass vegetation communities which are becoming increasingly rare in Ontario.

The total richness of flora recorded within Black Oak Heritage Park was 434 plant species (306 natives (70.51%); 127 exotics (29.26%)). Of the 434 plant species identified, 34 species are Provincially Significant or Species at Risk.

Floristic Quality Assessments were conducted to determine which vegetation communities will benefit most from restoration and management activities. Eleven ELC communities were classified as being high priority and protection areas and four communities were classified as medium priority and protection areas.

1.6.3 Fauna and Wildlife Habitat

A total of 133 wildlife species were identified within the study area or on adjacent lands during Sage Earth's field investigations. Of the 133 species identified, there were 61 bird species, five amphibian species, seven reptile species, 18 mammal species and 42 insect species. Thirteen of these species were identified as being Provincially Significant or Species at Risk. These species included five bird species, three reptile species, one lepidopteran species and four odonatan species.

1.7 PRESENT AND FUTURE LAND USE

Several key stressors were identified during 2018 field investigations. These stressors include created and abandoned drains, railway lines, a fenced dog park, dug ponds, tracks and trails, fire suppression, invasive species and dumping of brush trees and garbage within Black Oak Heritage Park. Track and trail use in sensitive areas within Black Oak Heritage Park remains a key ecological stressor.

Future Ecological Land Classification vegetation communities were selected using historical aerial photos to determine past land use, which was compared against current site conditions and ecological stressors. The intended future vegetation community type(s) and Management Units were selected with the intention of opening up the prairie and savannah ecosystems to increase habitat for rare and at-risk flora and fauna. The main objective is to improve the floral composition, structure and function, leading to increased faunal diversity.

1.8 POLICY AND ENVIRONMENTAL DESIGNATIONS

The management and restoration of Black Oak Heritage Park is guided by government legislation, regulations, policies and guidelines within federal, provincial and municipal jurisdictions. The major impetus for this management plan includes:

FEDERAL

- Species at Risk Act (2002)
- Migratory Birds Convention Act (1994)
- Fisheries Act (2013)

PROVINCIAL

- Endangered Species Act (2007)
- Conservation Authorities Act (1990)
- Fish and Wildlife Conservation Act (1997)

MUNICIPAL

- City of Windsor Official Plan (2013)
- City of Windsor Comprehensive Zoning By-Law
- Rediscover our Parks: Parks and Outdoor Recreation Master Plan (2015 -2035)
- The City of Windsor Environmental Master Plan (2017)

1.9 MANAGEMENT RECOMMENDATIONS

In addition to summarizing the historic and current ecological diversity of Black Oak Heritage Park, this Management Plan is intended to provide management recommendations for future restoration actions. These recommendations are focused on enhancing or restoring diminished tallgrass woodland, savannah and prairie habitat for Provincially Significant or Species at Risk flora and fauna.

The main goal of the management recommendations is providing for the protection and restoration of the most productive and fragile ecosystems within Black Oak Heritage Park. To achieve this goal, three objectives must be met:

1. Protect and restore sensitive areas of Black Oak Heritage Park identified within this Management Plan to encourage Provincially Significant species and Species at Risk to expand their range or return to the Park;

2. Promote the re-establishment of connectivity through natural linkages between remnant patches of prairie, savannah and woodland to allow for undisturbed movement of Species at Risk; and
3. Complete restoration activities in partnership with other organizations such as the Herb Gray Parkway, Ontario Parks, Gordie Howe International Bridge and Essex Region Conservation Authority (ERCA) projects to ensure the inclusivity of knowledge from regulatory agencies.

Restoration activities will benefit targeted flora and fauna Species at Risk through the restoration and enhancement of their native habitat within Black Oak Heritage Park. The following restoration activities are recommended to complete the main objectives of this management plan:

1. Retain tallgrass prairie and woodland communities to maintain habitat for Species at Risk and provincially significant species;
2. Thin forest communities of invasive species, including a special focus on overly abundant native Black Walnut populations (Refer to Section 1.2.1.1 of Appendix H for Black Walnut Management recommendations);
3. Protect wetland communities to conserve their well-balanced ecosystems;
4. Use woody plant removal techniques and herbicide application as the first stage of restoration; and,
5. Complete prescribed burns on selected Ecological Land Classification (ELC) vegetation communities.

1.10 MONITORING & ADAPTIVE MANAGEMENT STRATEGY

A Monitoring Program and Adaptive Management Strategy needs to be developed to evaluate the progress of the goals and management recommendations defined in this report. Field surveys completed in 2018 can be used as a starting point or baseline for annual monitoring. The Restoration and Monitoring Programs should be re-evaluated yearly allowing for implementation of adaptive management techniques to ensure a positive restoration outcome.

Documenting how, when and where creation, restoration or enhancement efforts are implemented and how the Management Unit responds will be essential. A comparison of baseline and annual monitoring data provides details on the changes that occurred. This analysis allows the restoration practitioner to:

1. View the rate of change of the Management Unit;
2. Track the abundance and distribution of plants and animals as a result of management actions; and
3. Determine which prescriptions and conditions provided favourable restoration results.

Implementing a Monitoring and Adaptive Management Strategy provides a scientifically defensible basis for making accurate, ongoing and future restoration decisions based upon the progress of the past actions.

1.11 CONCLUSION

Black Oak Heritage Park has a significant biological, archeological, cultural and historic importance to the City of Windsor and associated communities. The Park strengthens the biodiversity in the region and

is one of the largest surviving tallgrass prairie remnants left in Ontario. Habitats found in Black Oak Heritage Park including tallgrass prairie, savannah and woodland are some of the most endangered habitats on earth. The Ojibway Prairie Complex contains more federally and Provincially Rare species and Species at Risk than any other park system in Ontario.

Restoration and protection of the high-quality habitats within Black Oak Heritage Park is required to prevent woody plant succession, use of tracks and trails in sensitive areas and to reduce the competition of invasive plant species. Implementing the prescriptions in this management plan is necessary to save and restore what is left of this precious gem.

2.0 INTRODUCTION

Ojibway Prairie Complex is a collection of five closely situated natural areas. The City of Windsor's Department of Parks' Ojibway Nature Centre administers four of these areas including: Ojibway Park, Tallgrass Prairie Heritage Park, Black Oak Heritage Park, and Spring Garden Natural Area, which total approximately 250 hectares. Collectively, these sites are designated as the Ojibway Prairie Remnants Area of Natural and Scientific Interest (ANSI). The nearby Ojibway Prairie Provincial Nature Reserve, owned and managed by Ontario Parks, adds more than 105 hectares of additional prairie and savannah habitat. The total area is continually growing as the City of Windsor and the Province of Ontario acquire more land for protection.

It is estimated that less than 0.5% of the original prairies and savannah remain in all of southwestern Ontario (Bakowsky and Riley 1994). The largest surviving relicts were located on lands controlled by Indigenous peoples, such as Walpole Island, and those wedged between the developed urban portions of Windsor and LaSalle, the Ojibway Prairie Complex. The most striking aspects of the Ojibway Prairie Complex are the tremendous variety of vegetation and animal life. Wetlands, forest, savannah and prairie provide habitat for a great number of rare plants, insects, reptiles, amphibians, birds and mammals.

Of the five natural areas which make up the Ojibway Prairie Complex, Black Oak Heritage Park (the "Park") is located closest to the Detroit River. Black Oak Heritage Park and surrounding lands have a rich cultural and natural heritage. Early explorers reported the presence of Indigenous Huron corn fields along this part of the river. By 1749, the French had arrived and settled at this location, their fields replacing those of the Hurons. Their farmsteads represent the first major European farming community in Southern Ontario. Originally referred to as Petite Cote (Little Coast), the site later became known as la Cote de Misere (The Coast of Misery), because the sandy soils lost their fertility and farming was no longer productive. Industrial development threatened the site up until 1989 when the land was acquired by the City of Windsor to protect its natural and environmentally significant features.

Black Oak Heritage Park is provincially designated as an Area of Natural and Scientific Interest (ANSI) and as a Provincially Significant Wetland (PSW). On a municipal level, the Park is designated as Natural Heritage in the City of Windsor's Official Plan. It is an Environmentally Significant Area (Essex Region Conservation Authority), an Important Amphibian and Reptile Area (Canadian Amphibian and Reptile Conservation Network), and is on the Western Lake Erie Watersheds Priority Natural Area Registry (City of Windsor, Essex Region Conservation Authority, US Fish and Wildlife Service, Detroit River International Wildlife Refuge).

The vegetation of Black Oak Heritage Park is made up of a variety of prairie, savannah and woodland species. In addition to the abundance of old growth Black Oak trees, it was the best local site to see American Chestnuts. In the early 1800's, an area on the edge of Windsor called "Chestnut Grove" likely referred to this area.

Black Oak Heritage Park's parking lot and entrance at Broadway Street provides the only access to Black Oak Heritage Park. The designated trail is reserved for passive recreational activities, such as hiking, bird watching, photography and leisurely bike riding. The south section of Black Oak Heritage Park is not for

public use and any trails within this area are to be avoided, as their use would be in violation of Parks By-law 200-2002, in addition to jeopardizing the numerous Provincially Rare and Species at Risk found in the area.

2.1 SUBJECT PROPERTY LOCATION

Black Oak Heritage Park is located near the Detroit River on the southwest side of the City of Windsor. The Park is part of the Ojibway Prairie Complex which includes Ojibway Park, Tallgrass Prairie Heritage Park, Spring Garden Natural Area and Ojibway Prairie Provincial Nature Reserve. A Key Plan Showing Black Oak Heritage Park in a regional context is presented in **Figure 1** (**Appendix A**).

2.2 ADJACENT LAND USES

Black Oak Heritage Park is located in a highly disturbed area within the City of Windsor. Much of the surrounding land is being utilized for private industrial purposes. Due to the lack of connectivity to other naturalized areas, the unique habitats and species found within Black Oak Heritage Park face strong pressures from edge effects and habitat fragmentation.

Northwest of Black Oak Heritage Park lies the Ojibway Shores property. This parcel contains a woodland measuring approximately 10 ha in size. To the north-east is an industrial development measuring approximately 6 ha. A two-hectare parcel of land interjects into Black Oak Heritage Park from the east and is currently undeveloped mixed meadow. Directly west of Black Oak Heritage Park is a piece of developed land measuring approximately 33 ha that operates as a shipping port. To the west, along the Detroit River, and along the entire south side of Black Oak Heritage Park are developed industrial properties. In the 1990's a small residential area known as Brighton Beach was situated along the north side of Black Oak Heritage Park, but today this area has been cleared for a customs plaza and future bridge to the United States. Adjacent land uses surrounding Black Oak Heritage Park are shown in **Figure 1** (**Appendix A**).

3.0 METHODOLOGIES

3.1 PROCESS FOR ECOLOGICAL ASSESSMENT

Full scale management and restoration of the Black Oak Heritage Park would require the following:

1. Current land use site assessment;
2. Analysis of historical land use;
3. Examination of past disturbance regimes and current ecological stressors;
4. Mapping;
5. Formation of restoration goals and objectives for proposed/future Restoration Sites/Management Units;
6. Creation of a Management Plan to remove invasive plant species, increase diversity of species and habitats, and restore historical conditions;
7. Initiation of a monitoring program;
8. Implementation; and,

9. Adaptive management based upon monitoring.

3.1.1 Protocol for Vegetation Community, Structure, & Function Analysis

The geographical extent, composition, structure and function of vegetation communities within the Park were first identified through aerial photo interpretation and then confirmed through field investigations. Aerial photos were interpreted to determine the limits and characteristics of vegetation communities.

Vegetation communities were classified according to the Ecological Land Classification for Southern Ontario: First Approximation and Its Application (Lee et al. 1998 and 2008). The communities were sampled using a plotless method for the purpose of determining general composition and structure of the vegetation and the vegetation communities within the study area. An extensive vascular plant list was compiled, as well as the height and cover of each layer and the dominant species in each layer. Dominant and abundant flora was used to classify vegetation community types and ecosites. Plant species status was reviewed according to the Provincial ranking system (S-Rank) used by the Natural Heritage Information Centre (NHIC 2018) to set protection priorities for rare species and natural communities. Plant species considered to be Extremely Rare in Ontario (S1), Very Rare in Ontario (S2) and Rare to Uncommon in Ontario (S3) are noted throughout this report. Vascular plant nomenclature follows NHIC (2018).

Size Class Analysis was carried out for all living woody plants, standing snags and deadfall/logs. Dichotomous keys presented in Lee et al. (1998) were used to determine the community age, system, site, history, substrate, cover, plant form and topographic features. Special emphasis was placed upon surveying for invasive species when observed in the field.

3.1.2 Floristic Quality Assessment

According to Swink and Wilhelm (1994) Floristic Quality Assessment (FQA) is a method to assess the floristic integrity of vegetation communities. FQA is used to determine the significance and amount of restoration required for individual vegetation communities. This assessment provides a dependable and repeatable method for evaluating the relative significance of vegetation communities in terms of their native floristic composition. This assessment is not intended for use as a stand-alone method, but instead can be applied to complement and support other methods of evaluating the natural quality of a site.

3.1.2.1 Floristic Quality Index

FQA is applied by calculating a mean Coefficient of Conservatism (CC) value and a Floristic Quality Index (FQI) value from a comprehensive list of plant species obtained from a particular site (Swink and Wilhelm 1994; Wilhelm and Masters 1995). FQI determines the quality of a vegetation community based on its plant species composition and relative abundance.

Coefficients of conservatism range from 0 - 10 and embody an estimated probability that a plant is likely to occur in a landscape relatively unaltered from what is believed to be pre-European settlement condition. A coefficient of 0, therefore, is given to plants that have demonstrated little fidelity to any remnant natural community, while a coefficient of 10 is applied to those plants that are almost always restricted to a pre-settlement remnant.

FQI is calculated by summing the CC of an inventory of plants and dividing by the total number of plant taxa (n), yielding the mean coefficient of conservatism (Mean CC = Sum of CC /n). The Mean CC is then multiplied by the square root of the total number of plants (n) to yield the FQI (FQI = Mean CC √n). The square root of n is used as a multiplier to transform the Mean CC and allow for better comparison of the FQI between large sites with a high number of species and small sites with fewer species. Other methods used to determine the significance of each vegetation community include relative abundance, size and level of anthropogenic (i.e. caused by humans) disturbance.

Based upon the above criteria, vegetation communities were classified as follows:

- Rare and Extremely Significant if community FQI value was greater than 50;
- High Significance if community FQI value between 37 and 49;
- Moderate to High Significance if community FQI value was between 25 and 36;
- Moderate Significance if community FQI value was between 13 and 24; or
- Low Significance if community FQI value was less than 12.

3.2 WILDLIFE AND WILDLIFE HABITAT

Wildlife species and habitat data were collected via field investigation and knowledge of the Ecological Land Classification (ELC) vegetation communities present on the site. ELC was utilized to describe wildlife habitat, where appropriate. Wildlife species were identified through direct observation, vocalizations, or evidence such as tracks, scat and browse. Special focus was placed upon searching for Species at Risk individuals, habitat and habitat features such as vernal pools, dens, burrows (small and large), snake thermoregulation areas, tree cavities and basking sites.

3.2.1 Breeding Bird Surveys

Field investigations were conducted to search for breeding bird evidence (BBE) and to characterize the nature, extent and significance of breeding bird usage within Black Oak Heritage Park. Territorial songs along with direct observations of bird breeding behaviours were used to record BBE. Survey methodology and breeding bird behaviours used as evidence of breeding success were categorized according to the Breeding Bird Atlas five-year surveys organized by Bird Studies Canada (BSC).

Two breeding bird surveys were conducted at 13 point-count stations. To ensure that early and late breeding birds were accounted for the first survey was completed between May 24 – June 16, and the second survey was completed between June 16 – July 10. All 13 point-count stations were located within Black Oak Heritage Park and were spaced approximately 250 m apart. Surveys occurred in the morning hours prior to 10 am and each station was surveyed for ten minutes. All bird surveys were undertaken in good weather with warm temperature, no precipitation and little or no wind. Species were identified though their unique vocalizations, as well as visual observations.

3.3 SPECIES AT RISK SURVEY METHODS

Field surveys were carried out to determine the potential population and distribution of Species at Risk individuals and to delineate the habitat and habitat features within the study area. The surveys were

carried out to provide detailed and reliable information on Species at Risk presence or absence, suitable habitat, habitat features, location, population size, and management concerns particularly in relation to compliance with the *Endangered Species Act, 2007.*

The search efforts were focused on inspecting sites and features with a high probability of supporting Species at Risk. When documenting each Species at Risk specimen/population, habitat or habitat feature the following data was recorded on paper and on a Global Positioning System (GPS):

- Species (scientific name);
- Habitat or habitat feature;
- Location (Universal Transverse Mercator (UTM) co-ordinates); and,
- Relative abundance.

Points were used to delineate the location. UTM coordinates were recorded on hand-held GPS units, downloaded to a computer and mapped on an ortho-rectified digital air photo using a Geographic Information System (GIS).

4.0 HISTORICAL CONDITIONS

4.1 BACKGROUND REVIEW

Sage Earth completed a background review to determine the historical conditions of Black Oak Heritage Park using aerial photo interpretation, personal communications and a literature review of available resources. The results of this background review are discussed below.

4.1.1 Personal Communications

Sage Earth consulted with the City of Windsor and ERCA biologists regarding the historical conditions of Black Oak Heritage Park. These discussions focused around the historical land uses surrounding and within the Park, as well as the natural and anthropogenic disturbances the Park and adjacent land have encountered over time.

4.1.2 Literature Review

Sage Earth conducted a thorough literature review of documents retaining to the historical conditions of Black Oak Heritage Park. The following documents were reviewed in this search:

- Bakowsky, W. and Riley, J.L. 1994. A Survey of the Prairies and Savannahs of Southern Ontario.
- Black Oak Heritage Park: What type of uses/activities are prohibited in Black Oak Heritage Park? City of Windsor, 2018. From: https://www.citywindsor.ca/residents/parksandforestry/city-parks/pages/black-oak-heritage-park.aspx.
- History of Ojibway Prairie (Version AUG2011). Ojibway Nature Centre. Department of Parks & Recreation, Windsor, Ontario. From: http:///www.ojibway.ca/history.htm.
- Learn, C. 1988. Concept Plan: Black Oak Heritage Park. April 27, 1989. City of Windsor: Department of Parks and Recreation.

- Pratt, Paul D. 2018. Provincially Rare Vascular Plants and Wildlife of the Ojibway Prairie Complex (Version APR2018). Ojibway Nature Centre Home Page. Department of Parks, Windsor, Ontario. From: http://www.ojibway.ca/raresp.htm.

4.2 HISTORICAL VEGETATION COMMUNITIES

By the mid 1900's agricultural land uses were predominant surrounding Black Oak Heritage Park. Farming involved regular burn cycles to clear woody vegetation and hay, which encouraged the growth of open tallgrass prairie and savannah vegetation communities (Pratt 2011). Aerial imagery from 1948 determined that ten Ecological Land Classification (ELC) vegetation community types existed alongside anthropogenic land that had undergone obvious disturbances (**Figure 2 in Appendix A**).

The vegetation communities were classified as:

1. Fresh-Moist Forb Tallgrass Prairie Ecosite (MEFM3);
2. Fresh-Moist Tallgrass Prairie or Meadow Type (MEMM2 or MEMM4);
3. Dry Black Oak Tallgrass Savannah Type (SVDM1-1);
4. Fresh-Moist Tallgrass Deciduous Savannah Ecosite (SVDM2);
5. Dry-Fresh Oak Tallgrass Deciduous Woodland Ecosite (WODM1);
6. Fresh-Moist Tallgrass Deciduous Woodland (WODM6);
7. Fresh-Moist Black Walnut Lowland Deciduous Woodland (FODM7-4);
8. Fresh-Moist Oak Carolinian Deciduous Woodland (FODM10-2);
9. Deciduous Swamp (SWD); and
10. Open Aquatic (OAO).

4.3 SIGNIFICANT HISTORICAL FLORA SPECIES

The background review revealed that Black Oak Heritage Park historically contained a large diversity of rare plants that have since been extirpated from the area or are considered Provincially Rare or Species at Risk. It is important to note that while some of these species were no longer documented in Black Oak Heritage Park during 2018 field studies, they may have been missed or they may be present within the seedbank. With implementation of proper management techniques, historic species should emerge and contribute to the populations of rare or significant plant species. **Table 1 (Appendix B)** presents the species name, status, last year of record and observer.

4.4 SIGNIFICANT HISTORICAL FAUNA SPECIES

The background review determined that Black Oak Heritage Park and adjacent lands historically contained a large diversity of rare fauna that have since been extirpated or are considered Provincially Rare or Species at Risk. Between 1976 and 2018 Black Oak Heritage Park and adjacent lands contained 49 rare bird species, one rare mammal species, one rare reptile species, two rare crustacean species, eight rare odonatan species and three rare Lepidopteran species. These species, their status, last year of record and the observer are shown in **Table 2 (Appendix B)**. While some of these species still exist in Black Oak Heritage Park today, many have become locally extirpated or have not seen in many years. Future

habitat restoration may provide suitable habitat to encourage the establishment of historic fauna species and improve the habitat for rare species currently residing in Black Oak Heritage Park.

4.5 HISTORICAL ECOLOGICAL STRESSORS

The natural heritage features found within Black Oak Heritage Park have faced various ecological stressors over time. The most significant stressors that have impacted the current conditions of Black Oak Heritage Park are as follows:

- Dirt roads;
- Earth displacement from cleared land;
- Tracks and trails;
- Agricultural land development;
- Recreational uses including dog parks;
- Fire suppression;
- Woody plant succession and invasive species; and
- Changes in hydrology such as dug ponds and drains.

Figures 3, 4, and **5 (Appendix A)** outline some of the key historical stressors Black Oak Heritage Park has faced at different points in time. In 1948, a section of Black Oak Heritage Park was first cleared, dirt roads were created along the northern and western edges of Black Oak Heritage Park boundary and a rail spur fragmented the southeast corner of Black Oak Heritage Park (**Figure 3 in Appendix A**). By 1972, a second railway intersected throughout the center of Black Oak Heritage Park in addition to the creation of additional dirt roads and clearing of the natural landscape in the southern section of Black Oak Heritage Park (**Figure 4 in Appendix A**). By 1978, several more sections of Black Oak Heritage Park had been cleared for agriculture (**Figure 5 in Appendix A**).

5.0 EXISTING CONDITIONS

5.1 FIELD SURVEY DATES AND WEATHER CONDITIONS

Sage Earth completed field work within the Black Oak Woods Heritage Park during the spring, summer and fall of 2018. Sage Earth also hired local naturalists to assist with the field surveys. Qualifications of all biologists can be seen in **Appendix C**. Refer to **Table 3** (**Appendix B**) for details on the local temperatures, weather conditions and field staff at Black Oak Heritage Park during field investigations.

5.2 NATURAL HERITAGE FEATURES

The Ministry of Natural Resources and Forestry (MNRF) - Make a Map: Natural Heritage Areas internet application indicates that Black Oak Heritage Park supports a woodland feature, a Provincially Significant Wetland (PSW) known as the Black Oak Wetland Complex (ER 40) and a Life Science Area of Natural and Scientific Interest (ANSI) known as the Ojibway Prairie Remnants (Black Oak Woods). Black Oak Heritage Park is connected to the Detroit River by a restored watercourse on the northwest corner of the property that is approximately 760 m long. Natural heritage features can be seen in **Figure 6** (**Appendix A**)**.** Refer to **Sections 5.5** and **5.6** for more information on the ANSI and PSW found within the Park.

5.3 PHYSIOGRAPHY AND SOILS

According to the Ontario Soils Survey, Report No. 29 (Hoffman, Wicklund, & Richards, 1962) and the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) on-line interactive 'Ag Maps' application the soils within Black Oak Heritage Park are composed of Burford Loam (Bg) and Granby Sand (Gs). Burford Loam is a slightly stony soil that is well drained and Granby Sand is a non-stony soil that is poorly drained. The Burford Loam is on the west and central portions of the Park while the Granby Sand is on the east side of the Park.

5.4 HYDROLOGY

Black Oak Heritage Park is located to the east of the Detroit River. A restored watercourse located along the northwest edge of Black Oak Heritage Park provides an aquatic corridor from the Detroit River. The property also contains six wetland pockets that are part of the Black Oak Wetland Complex. In addition, several agricultural drains are located to the north and east of Black Oak Heritage Park. Watercourses and wetlands can be seen in **Figure 6** (**Appendix A).**

5.5 AREAS OF NATURAL AND SCIENTIFIC INTEREST

The majority of Black Oak Heritage Park is considered to be part of the Ojibway Prairie Remnants Area of Natural and Scientific Interest (ANSI; **Figure 6 in Appendix A**). The Life Science ANSI at Black Oak Heritage Park is part of the Ojibway Prairie Complex, which is unique as it is one of the largest remnants of tallgrass prairie in Canada. Savannah, tallgrass prairie, and tallgrass woodland ecosystems once covered over 1,172 km^2 in Ontario. Today only 106.58 km^2 (9%) remain (Valliant et al 2016). As one of the largest areas of remnant tallgrass prairie in the province, the Ojibway Prairie Complex must be protected and maintained (Bakowsky and Riley 1994). Tallgrass prairie is one of the most endangered vegetation communities on earth. Approximately 20% of plants designated as rare in Ontario are associated with prairie habitat (Tallgrass Ontario 2017). Black Oak Heritage Park contains approximately one fifth of the land area in the Ojibway Prairie Complex.

5.6 PROVINCIALLY SIGNIFICANT WETLAND

Black Oak Heritage Park contains several pockets of a Provincially Significant Wetland (PSW) known as Black Oak Wetland Complex (**Figure 6 in Appendix A**). The Black Oak Wetland Complex was designated as a PSW after being officially evaluated under the Ontario Wetland Evaluation System (OWES) criteria in 2009 (Ojibway Prairie Wetland Complex Wetland Evaluation Edition, 2009). The PSW contains a mix of swamp and marsh habitat with the diversity of surrounding habitat including abandoned agricultural land, deciduous forest, open lake or deep river, fence rows with cover and creek floodplain. The wetland contains breeding habitat for Endangered or Threatened species including Willowleaf Aster, Dense Blazing Star, and Eastern Foxsnake. The wetland has also been identified as traditional migration or feeding habitat for Endangered or Threatened species including Eastern Foxsnake, Blanding's Turtle and Grey Fox. Several other provincially significant wildlife species including Pronghorn Clubtail, Eastern Amberwing, Duke's Skipper and Swamp Darner also exist within the wetland complex. In addition, 45 Provincially Significant and four Locally Significant plant species

were identified during the wetland evaluation. Current wetland habitat within the Park is show in **Figure 7** (**Appendix A**).

5.7 FLORA AND VEGETATION COMMUNITIES

5.7.1 Ecological Land Classification (ELC) Vegetation Communities

The vegetation communities in Black Oak Heritage Park are currently fragmented from the nearby Ojibway Park, by a six-lane highway called Ojibway Parkway. Tracks and trails are present in most communities, even if bylaws are in place to restrict access, thus heightening anthropogenic disturbance. Black Oak Heritage Park is comprised of a patchwork of much smaller disturbed vegetation communities compared to 1948 (**Figure 2 in Appendix A**). Eighteen ELC vegetation community types were classified in Black Oak Heritage Park during 2018 field investigations (**Table 4 in Appendix B** and **Figure 7 in Appendix A**).

5.7.2 Provincially Significant (S1-S3) ELC Vegetation Communities

ELC communities within Black Oak Heritage Park have been assigned S-ranks to indicate Provincial Significance by the Natural Heritage Information Centre (NHIC). Black Oak Heritage Park contains three communities that are considered Provincially Significant (S1 - S3):

1. Fresh-Moist Mixed Tallgrass Prairie (MEMM2);
2. Dry-Fresh Oak-Hickory Deciduous Forest (FODM2-2); and
3. Fresh-Moist Black Walnut Lowland Deciduous Forest (FODM7-4).

Additionally, tallgrass prairie ecosystems in Ontario have become fragmented and rare as the species they support are disappearing as human disturbance increases. Black Oak Heritage Park contains three tallgrass vegetation communities:

1. Fresh-Moist Mixed Tallgrass Prairie (MEMM2);
2. Fresh-Moist Tallgrass Deciduous Woodland (WODM6); and
3. Tallgrass Meadow Marsh (MAMM6).

A total of 18 vegetation communities were defined within the Park during 2018 field investigations. Fourteen communities were part of terrestrial systems and four communities were part of wetland systems. **Table 4** (**Appendix B**) presents all of the ELC vegetation communities present within Black Oak Heritage Park. The structure and dominance within each vegetation community are shown in **Table 5** (**Appendix B**) and photographs of each vegetation community at the time of field investigations are shown in **Appendix D**.

5.8 FLORA

5.8.1 Flora Inventory and Physiognomy

In 2018, the total richness of flora recorded within Black Oak Heritage Park was 434 plant species (306 natives (70.51%), 127 exotics (29.26%), (**Table 6** and **7 in Appendix B**). The physiognomy is composed of 56.51% forbs, 11.63% grasses, 10.70% shrubs, 9.53% trees, 4.19% sedges, 2.56% woody vines, 2.33% ferns, 1.63% herbaceous vines and 0.93% rushes. For the flora and vegetation community analysis, Sage Earth was given permission to use the Excel program developed by Dan Lebedyk (ERCA Ecologist) to generate the tables and figures provided in this report. Refer to **Appendix F** for a detailed description of the physiognomy in each individual ELC vegetation community polygon.

5.8.2 Provincially Significant and Species at Risk Flora

Sage Earth's 2018 field investigations determined that there were 34 Provincially Significant or Species at Risk flora within the Park (**Table 8 in Appendix B**). Willowleaf Aster, Dense Blazing Star and Purple Twayblade are listed as Threatened or Endangered under the Endangered Species Act (ESA; 2007). These species are provided with species and general habitat protection (**Figure 8 in Appendix A**). Shumard Oak and Climbing Prairie Rose are listed as Special Concern under the ESA. One species, Black Ash, has been listed as Threatened by the Canadian Committee of Endangered Wildlife in Canada (COSEWIC).

The richness of rare plant species varies within the vegetation communities. **Figures 8** and **9** (**Appendix A**) show the concentration of Provincially Significant and Species at Risk flora species within each vegetation community. The southeastern portion of Black Oak Heritage Park had the highest diversity of Provincially Significant plant species due to the greater distance from roads and the main entrance of Black Oak Heritage Park. Inaccessibility and lack of disturbance in these areas have maintained the native seedbank. Fencing has also reduced the anthropogenic influence through time. Much of the northern portion of Black Oak Heritage Park has lower diversity of Provincially Significant plant species because of past land clearing, invasive woody plant species and human disturbances.

5.8.3 Floristic Quality Assessment

The results of the Floristic Quality Assessment (FQA), including floristic analysis, coefficient of conservatism (CC), Floristic Quality Index (FQI) and Mean Coefficient of Wetness are shown in **Table 10** (**Appendix B**). The results of the flora surveys indicate that habitat restoration would result in a positive response from the vegetation communities.

Based on current FQI values without adventives, three ELC polygons are considered to be "rare and extremely significant"; sixteen are deemed to be "high significance"; two are regarded as "moderate to high significance"; and one is considered to be low significance. If exotic plant species are included in the calculations, the FQI value of the ELC vegetation communities decreases.

With all species included, there are eight ELC polygons deemed to be "high significance" located in the southeastern interior portion of Black Oak Heritage Park; twelve that are regarded as "moderate to high significance" along the edges of the Park; one is considered to be "moderate significance"; and one is

deemed to be "low significance" in the areas of Black Oak Heritage Park that were most influenced by past anthropogenic activities. **Figure 10** (**Appendix A**) delineates the location of the ELC polygons with their unique numeric identifiers and the category of FQI Values with all species that are applicable for each polygon.

A number of ELC vegetation communities contain a high percentage of adventive plant species. There are four ELC polygons with >37% introduced plant species (**Table 9 in Appendix B**). Targeted woody and herbaceous plant removal of invasive plants would improve the floristic quality of Black Oak Heritage Park. Many of the invasive plants are outcompeting the indigenous plant species with high coefficient of conservatism values. The invasive plants suppress the growth of many Species at Risk and Provincially Significant plant species through shading, allelopathy, utilization of resources and by being habitat generalists.

Future management activities will improve the Floristic Quality of the ELC vegetation communities. To encourage a vigorous tallgrass prairie ecosystem, ongoing routine vegetation management must start with the long-term goal of decreasing the abundance of woody/invasive plant species to promote the reestablishment or dominance of more conservative (higher coefficient of conservatism) tallgrass prairie species. Refer to **Appendix E** for species lists associated with the individual ELC vegetation community polygons that were used to calculate the Floristic Quality Analysis.

5.8.4 Restoration and Protection Priority Areas

5.8.4.1 High Priority Areas

The Restoration and Protection Priority Areas in Black Oak Heritage Park are shown in **Figure 11** (**Appendix A**). Areas delineated as "High" are considered to be Provincially Significant ELC Vegetation Communities/Tallgrass Vegetation Types (**Figure 7 in Appendix A**); contain Endangered or Threatened Flora populations (**Figure 8 in Appendix A**); have diverse populations of Provincially Significant plant species (**Figure 9 in Appendix A**); and/or, have High Floristic Quality Index Significance values (**Figure 10 in Appendix A**).

There are eleven ELC communities identified on **Figure 11** (**Appendix A**) that meet this criterion:

1. Fresh-Moist Deciduous Woodland (WODM5);
2. Fresh-Moist Tallgrass Deciduous Woodland (WODM6);
3. Dry-Fresh Oak-Hickory Deciduous Forest (FODM2-2);
4. Fresh-Moist Black Walnut Lowland Deciduous Forest (FODM7-4);
5. Fresh-Moist Cottonwood Deciduous Forest (FODM8-3);
6. Fresh-Moist Oak-Maple Deciduous Forest (FODM10-2);
7. Swamp White Oak Mineral Deciduous Swamp (SWDM1-1);
8. Cottonwood Deciduous Swamp (SWDM4-6);
9. Fresh-Moist Mixed Tallgrass Prairie (MEMM2);
10. Fresh-Moist Mixed Meadow (MEMM4); and
11. Tallgrass Meadow Marsh (MAMM6).

The total area of these eleven high priority communities is 47.17 ha. Note that some community codes appear more than once in Black Oak Heritage Park with differing FQI values based on the species listed. For example, there are three communities of FODM7-4 each with a different FQI value.

5.8.4.2 Medium to Low Priority Areas

Communities designated as "Medium" and "Low" Restoration and Protection Priority Areas have been impacted historically by anthropogenic disturbances (**Figures 3** to **5 in Appendix A**). Moderate and low priority areas include those vegetation communities on the north side of Black Oak Heritage Park and those adjacent to commercial/industrial yards. There will be a considerable amount of anthropogenic disturbance in upcoming years due to the construction of the customs terminal and bridge to Detroit. Management of these communities is still valuable to reduce overcrowding, combat successional shrub growth, and allow rare prairie species to flourish.

There are four ELC community types identified as medium priority on **Figure 11** (**Appendix A**). These communities total 39.46 hectares and include:

1. Fresh - Moist Forb Meadow (MEFM4);
2. Fresh - Moist Poplar Deciduous Woodland (WODM5-1);
3. Fresh - Moist Manitoba Maple Deciduous Woodland (WODM5-3); and
4. Fresh – Moist Black Walnut Lowland Deciduous Forest (FODM7-4).

Compared to medium and high priority areas at Black Oak Heritage Park, low priority areas for restoration are the ELC communities with the most anthropogenic disturbances, low species diversity and low potential for restoration (**Figure 11 in Appendix A**). These five communities total 9.37 hectares and include:

1. A section of Fresh-Moist Forb Meadow (MEFM4);
2. Dry-Fresh Mixed Meadow (MEMM3);
3. Fresh-Moist Manitoba Maple Lowland Deciduous Forest (FODM7-7);
4. Deciduous Savannah (SVD), and
5. Water Milfoil Submerged Shallow Aquatic (SAS_1-4).

5.9 FAUNA AND WILDLIFE HABITAT

A total of 133 wildlife species were identified within the study area or on adjacent lands during Sage Earth's field investigations (**Table 10** and **11 in Appendix B**). These species were identified either through visual observations or through evidence of occurrence. Of the 133 species identified, there were 61 bird species, five amphibian species, seven reptile species, 18 mammal species and 42 insect species. **Figure 7** (**Appendix A**) shows the ELC vegetation communities in which the various fauna was located.

5.9.1 Birds

Sixty-one species of birds were recorded during Sage Earth's field investigations, both within the study area and on the lands adjacent to it. Species identification was confirmed through unique vocalizations (calls) and by direct observation. Of the 61 species of birds that were observed on or adjacent to Black Oak Heritage Park, 46 species are protected under the *Migratory Birds Convention Act* (MBCA), which

protects and conserves migratory birds and their nests during the breeding bird season (**Table 10 in Appendix B**).

Five Provincially Significant or Species at Risk birds were detected on Black Oak Heritage Park or on adjacent lands. Refer to **Section 5.9.5** for more information regarding Species at Risk birds. **Figure 12** (**Appendix A**) shows the locations of Species at Risk birds.

5.9.1.1 Breeding Bird Survey Results

A total of 61 species of birds were observed during diurnal breeding bird surveys from 13 point-count locations. Of the 61 species detected, three species were confirmed breeding, 22 species were probable breeders, 33 species were possible breeders and three species were observed with no evidence of breeding. The results of the breeding bird survey are summarized below and in **Table 10** (**Appendix B**).

5.9.1.1.1 Confirmed Breeders

Three bird species were confirmed as breeding on the property. All three of these species were observed carrying food to young.

5.9.1.1.2 Probable Breeders

Twenty-two species were observed as probable breeders as breeding behaviour was observed in suitable nesting habitat during the species breeding season.

5.9.1.1.3 Possible Breeders

Thirty-three species are possible breeders as species were observed in appropriate habitat during their breeding season but no evidence of breeding was observed.

5.9.1.1.4 Observed Species

Three species were observed as a fly-overs during breeding bird surveys. No evidence of breeding was observed; therefore, these species are not presumed to be breeding within Black Oak Heritage Park

5.9.2 Herpetofauna

5.9.2.1 Amphibians

Field surveys identified five species of amphibians within the Park as shown in **Table 11** (**Appendix B**). Additionally, the Ontario Reptile and Amphibian Atlas (ORAA) contains records (historical and current) of the following amphibian species within the 10 km X 10 km survey square that encompasses the Park (square 17LG28): Spring Peeper (*Pseudacris crucifer*), and Mudpuppy (*Necturus maculosus*).

It is possible that additional species of amphibians listed by the ORAA could persist within the Park as suitable amphibian breeding and foraging habitat exists. The Park contains several pockets of PSW that can provide suitable breeding habitat for a variety of amphibian species. Seasonal flooding creates vernal pools and seasonal habitat for amphibian breeding. In addition, many vegetation communities contain foraging habitat along with a variety of cover objects. No frog surveys were completed by Sage Earth.

5.9.2.2 Reptiles

The ORAA indicates records of the following reptile species within the 10km X 10 km survey square that encompasses Black Oak Heritage Park (square 17LG28):

1. Eastern Foxsnake (*Pantherophis gloydi*);
2. Butler's Gartersnake (*Thamnophis butleri*);
3. Northern Watersnake (*Nerodia sipedon*);
4. Eastern Hog-nosed Snake (*Heterodon platirhinos*; Threatened; 1979 observation);
5. Red-Eared Slider (*Trachemys scripta elegans*);
6. Snapping Turtle (*Chelydra serpentine*, Special Concern);
7. Blanding's Turtle (*Emydoidea blandingii*; Threatened);
8. Eastern Musk Turtle (*Sternotherus odoratus*; Special Concern); and
9. False Map Turtle (*Graptemys pseudogeographica*).

Two turtle species and five snake species were identified during field surveys within or immediately adjacent to the Park (**Table 11 in Appendix B)**. Northern Map Turtles are listed as Special Concern under the ESA (2007) and Painted Turtles are listed as Special Concern by COSEWIC. An Eastern Foxsnake designated as Endangered under the ESA was observed at the border of the Ojibway Shores property immediately to the northwest of Black Oak Heritage Park. This species is allotted general habitat and species protection under provincial law. **Figure 12** (**Appendix A**) presents the locations of Species at Risk reptiles within Black Oak Heritage Park. Four species of common snakes were also observed.

Black Oak Heritage Park contains suitable habitat for snakes and turtles. The restored watercourse in the northwest corner of the Park provides an ideal aquatic corridor for snakes and turtles to reach the Detroit River. This watercourse contains restored banks, an abundance of aquatic vegetation and basking objects such as logs and rocks that could be used by a variety of turtle species. This feature provides an ideal aquatic linkage for reptiles to access the Park for foraging and dispersal behaviours. As such, it is possible that additional species listed by the ORAA are present in Black Oak Heritage Park.

5.9.3 Mammals

Eighteen species of mammals were observed within Black Oak Heritage Park during Sage Earth's field investigations (**Table 11 in Appendix B**). Three mammal species have a provincial ranking of Apparently Secure (S4) while all other mammal species identified within the Park are tolerant of anthropogenically disturbed habitats and are considered Secure (S5) in the province of Ontario.

5.9.4 Insects

A total of 17 lepidopteran and 25 odonatan species were observed within Black Oak Heritage Park during field investigations (**Table 11 in Appendix B**). The Monarch (*Danaus plexippus*) receives provincial protection from the *Fish and Wildlife Conservation Act* (FWCA) under Schedule 11 –Specially Protected Invertebrate. Monarchs are listed as Special Concern under the ESA (2007) and the Species at Risk Act (SARA; 2002). An additional four lepidopteran species are classified as Specially Protected Invertebrates (Schedule 11) under the FWCA. Four odonatan species are provincially listed as Critically Imperilled to

Vulnerable (S1 – S3). **Figure 12** (**Appendix A**) delineates the locations of observed Monarch Butterfly and Green Stripe Darner individuals.

The exact locations of three Provincially Significant Odonatan species are unknown within Black Oak Heritage Park. In 2013, during a Dragonfly and Damselfly count, Elusive Clubtail (S2) and Swamp Darner (S2S3) were observed somewhere within the Park. Cobra Clubtail was observed near the Detroit River in the Ojibway Shores property in 2016.

5.9.5 Provincially Significant Fauna (S1 – S3) and Species at Risk Wildlife

A total of 13 Provincially Significant or Species at Risk fauna were identified within Black Oak Heritage Park during field investigations (**Table 12 in Appendix B**). These species include five bird species, three reptile species, one lepidopteran species and four odonatan species. Locations of Provincially Significant and Species at Risk wildlife can be seen in **Figure 12** (**Appendix A**).

5.9.6 Movement Corridors and Connectivity

Ojibway Shores, located to the north-west of Black Oak Heritage Park, is currently undeveloped and serves as a movement corridor for a variety of fauna species to hunt, forage, nest, or breed along the Detroit River. This is considered an important connective route for species such as the Eastern Foxsnake, Bald Eagle, Grey Fox, and other small mammals and birds that rely on the river for specialized prey or habitat requirements. The restored watercourse along the northern edge of the Park provides an ideal aquatic movement corridor for mammals, amphibians, retiles and fish to reach the Detroit River.

Other areas surrounding Black Oak Heritage Park are disconnected or have been used for industrial or commercially development, unfortunately offering little to no movement opportunities for species other than birds. Refer to **Section 2.2** for more information regarding adjacent land uses.

6.0 PRESENT AND FUTURE LAND USE

6.1 PRESENT LAND USE AND ECOLOGICAL STRESSORS

The purpose and functionality of the land within Black Oak Heritage Park has changed significantly over the past 70 years (**Figures 3, 4** and **5 in Appendix A**). A large portion of the northern section of Black Oak Heritage Park was historically used for agriculture which affected the species composition in the years to follow. The 2018 Sage Earth plant survey found several species derived from hay pasture seed mixes as well as weeds associated with agriculture.

Current ecological stressors within Black Oak Heritage Park have been delineated in **Figure 13** (**Appendix A**). Several key stressors were identified during 2018 field investigations. These stressors include created and abandoned drains, railway lines, a fenced dog park, dug ponds and tracks and trails. Fire suppression has resulted in woody plant succession of Tallgrass habitat. Dumping of brush, trees and garbage within Black Oak Heritage Park and along adjacent roads has introduced exotic plant species and damaged the ground cover. Passive recreational activities such as walking, hiking, birding, nature watching and photography do not interfere with the intended goals and objectives of Black Oak Heritage Park. Refer to **Appendix G** for photos of current Ecological Stressors.

6.1.1 Tracks and Trail Usage

Although Parks By-Law 200-2002 (City of Windsor 2018) prohibits the alteration of the landscape of a park as well as entry into restricted areas, there are ongoing trespassing and vandalism issues within Black Oak Heritage Park. In an effort to better protect the sensitive portions of Black Oak Heritage Park, the City of Windsor has erected additional fencing and signage prohibiting entry to these areas. Despite these protective measures, the Park still contains numerous active tracks and trails in nearly all ELC communities outside of the designated trails outlined for recreational use on the Black Oak Heritage Park website and trailhead sign. The continued use of these tracks and trails will aid in the spread of invasive species and the creation of disturbed habitats where invasive plants thrive.

6.2 FUTURE ECOLOGICAL LAND CLASSIFICATION (ELC) COMMUNITIES

Future Ecological Land Classification vegetation communities were selected using historical aerial photos to determine past land use, which was compared against current site conditions and ecological stressors. The intended future vegetation community type(s) and Management Units were selected with the intention of opening up the prairie and savannah ecosystems to provide increased habitat for rare and at-risk flora and fauna. The intended exposure is to be more open than it currently is because of past woody plant succession as a result of fire cessation. **Figure 14** (**Appendix A**) delineates the future ELC vegetation communities.

6.2.1 Consolidation and Connectivity

There are two opportunities to acquire adjacent undeveloped natural lands (**Figure 1 in Appendix A**). The benefits of acquiring these two pieces of land would be in securing a wildlife corridor to the Detroit River and an opportunity to restore a native prairie community thus helping to protect a disappearing habitat in Ontario.

7.0 POLICY AND ENVIRONMENTAL DESIGNATIONS

7.1 FEDERAL POLICIES AND DESIGNATIONS

7.1.1 Species at Risk Act (2002)

The Federal Species at Risk Act (SARA; 2002) is designed to prevent wildlife species from becoming extinct or extirpated; help in the recovery of extirpated, endangered or threatened species; and to ensure that species of special concern do not become endangered or threatened. Section 32(1) of SARA states that:

"*No person shall kill, harm, harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species*."

The Act maintains an on-line registry of Species at Risk which is the official Federal list of wildlife Species at Risk. Species are classified as being either Extirpated, Endangered, Threatened, or Special Concern. Once the species becomes listed, measures to protect and recover a listed wildlife species are implemented.

On private lands prohibitions of SARA only apply to listed aquatic species and listed migratory birds that are also listed in the Migratory Birds Convention Act (1994). For non-aquatic species found on private land, SARA sets out a variety of ways critical habitat is to be protected. In most situations, provincial laws will provide protection for critical habitat.

Field studies completed by Sage Earth during 2018 determined that Black Oak Heritage Park contained seven Species at Risk plants (**Figure 8 in Appendix A** and **Table 8 in Appendix B**), four Species at Risk birds, two Species at Risk reptiles and one Species at Risk insect (**Figure 12 in Appendix A** and **Table 12 in Appendix B**). Only species listed as Threatened or Endangered are allotted general habitat and species protection under the Species at Risk Act at this time.

7.1.2 Migratory Birds Convention Act (1994)

According to the Minister of Justice (2017) the Migratory Birds Convention Act (MBCA) is intended to "*implement a Convention for the protection and conservation of migratory birds in Canada and the United States" … "The purpose of this Act is to implement the Convention by protecting and conserving migratory birds — as populations and individual birds — and their nests*" A "*migratory bird means a migratory bird referred to in the Convention, and includes the sperm, eggs, embryos, tissue cultures and parts of the bird."* According to the Regulations in Subsection 12 (1)(h): 12(1) *"The Governor in Council may make any regulations that the Governor in Council considers necessary to carry out the purposes and provisions of this Act and the Convention, including regulations" … "(h) for prohibiting the killing, capturing, injuring, taking or disturbing of migratory birds or the damaging, destroying, removing or disturbing of nests"* (Minister of Justice 1994, 2017). Environment and Climate Change Canada administers the requirements under the MBCA. As such, dates and protocol have been recommended below to ensure vegetation removal is undertaken outside of the breeding bird season.

Black Oak Heritage Park contains breeding habitat for several migratory bird species. As such, any future restoration activities should avoid tree or shrub clearing during the breeding bird window (April 1 – August 31) to avoid destruction of active bird nests protected by the MBCA. Alternatively, a nest search can be conducted by a qualified ornithologist in the area designated for clearing and any active nests found will not be disturbed by work activity until the young have fledged. Vegetation clearing should take place no later than three days after the nest search; otherwise the nest search will be repeated.

7.1.3 Fisheries Act (2013)

Supporting healthy fish communities positively contributes to the social and economic interests of the Province and local communities. Fish Habitat defined by the Fisheries Act (2013) means *"spawning grounds and nursery, rearing, food supply, and migration areas on which fish depend directly or indirectly in order to carry out their life processes"*. Under section 35(1) the Fisheries Act states that "*No person shall carry on any work, undertaking or activity that results in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery*."

Black Oak Heritage Park contains several pockets of PSW that are considered Fish Habitat (**Figure 6 in Appendix A**) under the Fisheries Act. Additionally, the restored watercourse located within the northwest corner of Black Oak Heritage Park provides an aquatic corridor to the Detroit River and is also considered

Fish Habitat. The federal Department of Fisheries and Oceans (DFO) oversees the protection of fish and fish habitat. If any disruption or alteration work occurs below the high-water mark during restoration activities, a Request for Review Form should be submitted to DFO.

7.2 PROVINCIAL POLICIES AND DESIGNATIONS

7.2.1 Endangered Species Act (2007)

The Species at Risk in Ontario (SARO) List is Ontario Regulation 230/08 issued under the Endangered Species Act, 2007 (ESA 2007). The ESA 2007 provides both species protection (Section 9) and habitat protection (Section 10) to species listed as Endangered or Threatened on the COSSARO List. If an activity or project will result in adverse effects to Endangered or Threatened species and/or their habitat, additional action would need to be taken by a proponent to remain in compliance with the ESA 2007. Species listed as Special Concern are not afforded legal protection under the ESA.

Field studies completed by Sage Earth during 2018 determined that Black Oak Heritage Park contained six Species at Risk plants (**Figure 8 in Appendix A** and **Table 8 in Appendix B**), three Species at Risk birds, two Species at Risk reptiles and one Species at Risk insect (**Figure 12 in Appendix A** and **Table 12 in Appendix B).** Only species listed as Threatened or Endangered are allotted general habitat and species protection under the Endangered Species Act at this time.

7.2.2 Conservation Authorities Act (1990)

The Conservation Authorities Act (1990) provides the framework to prevent, eliminate and minimize risk to life and property from flood and erosion hazards and encourage the conservation and restoration of natural resources. It empowers Conservation Authorities to regulate development activities in or adjacent to watercourses and wetlands, which may interfere with their functions. Black Oak Heritage Park falls under the jurisdiction of the Essex Region Conservation Authority (ERCA) and is subject to Ontario Regulation 158/06.

7.2.2.1 Ontario Regulation 158/06: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses

Section 2(1)(b)(d) and (e) of O. Reg. 158/06 states that:

"*Subject to section 3, no person shall undertake development or permit another person to undertake development in or on the areas within the jurisdiction of the Authority that are:*

- *b. river or stream valleys that have depressional features associated with a river or stream, whether or not they contain a watercourse;*
- *d. wetlands; or*
- *e. other areas where development could interfere with the hydrologic function of a wetland, including areas within 120 metres of all provincially significant wetlands, and areas within 30 metres of all other wetlands."*

O. Reg, 158/06 defines and establishes Regulated Areas (**Figure 15 in Appendix A)** where development could be subject to flooding or erosion, or where interference with wetlands and alterations to shorelines

and watercourses might have an adverse effect on environmental features. Black Oak Heritage Park contains several pockets of Provincially Significant Wetland and a watercourse along the northwest boundary that are within the jurisdiction of the ERCA. Wetland communities and watercourses are outlined in **Figure 6** and **7** and **25 (Appendix A)**.

Under O. Reg. 158/06 any proposed development, interference or alteration to watercourses or wetlands within a Regulated Area requires a permit from ERCA.

7.2.3 Fish and Wildlife Conservation Act (1997)

The Fish and Wildlife Conservation Act (FWCA; 1997) provides regulations for managing Ontario's fish and game species. The FWCA contains Ontario Regulations 663/98 - 669/98 which outline laws regarding area descriptions, fish licencing, hunting, wildlife open seasons, possession, buying or selling wildlife, trapping, wildlife in captivity and wildlife schedules. A permit will be required under the Fish and Wildlife Conservation Act for future restoration activities if they involve the capture or relocation of Ontario's fish or wildlife.

7.3 MUNICIPAL POLICIES AND DESIGNATIONS

7.3.1 City of Windsor Official Plan (2013)

The City of Windsor Official Plan provides guidance for the physical development of the municipality over a 20-year period while taking into consideration important social, economic and environmental matters and goals. As such, the Official Plan provides the policy framework that will guide the following:

1. Where new development can locate;
2. How existing and future neighbourhoods will be strengthened;
3. How Windsor's environment will be enhanced;
4. What municipal services, such as roads, water mains, sewers and parks, will be provided; and
5. When and in what order Windsor will grow.

Black Oak Heritage Park provides an environmental stronghold in the City of Windsor and meets the following objectives outlined by Section 5.3: Environmental Quality of the Official Plan:

1. To provide a means to maintain and improve ecosystem functions and processes within an urban area;
2. To protect, conserve and improve the quality and quantity of Windsor's natural features and functions;
3. To protect biological diversity and the habitats of endangered, threatened and vulnerable species;
4. To increase the quantity and quality of naturalized habitat;
5. To integrate environmental, social, and economic considerations in growth and development matters;
6. To protect the visual, aesthetic and recreational benefits of the natural environment; and
7. To establish recreational and natural linkages between open space areas and natural areas.

Additionally, Black Oak Heritage Park is designated as "Natural Heritage" in Schedule B, C and D of the City of Windsor Official Plan. Lands identified as Natural Heritage provide for the protection and conservation of Windsor's most environmentally significant and sensitive natural areas, including provincially designated Areas of Natural and Scientific Interest (ANSI) and wetlands. The following objectives and policies outlined in Section 6.8.1 of the Official plan establish the framework for lands designated as Natural Heritage:

4. To protect, conserve and improve Windsor's most environmentally significant and sensitive natural areas;
5. To provide opportunities for recreational uses within Natural Heritage areas; and
6. To link Natural Heritage areas to other components of the Greenway System.

Permitted uses of lands designated as Natural Heritage include nature reserves and wildlife management. The Council may permit ancillary uses such as recreation, leisure activities and facilities without requiring an amendment to the Plan proved that the ancillary use is clearly incidental and secondary to, and complementary with, the main Natural Heritage. Additionally, the ancillary use must not negatively impact the natural features and functions of the site.

The Official Plan requires municipalities to prepare a Conservation Management Plan for municipality-owned lands which are designated as Natural Heritage, such as Black Oak Heritage Park.

SUMMARY OF DESIGNATIONS OF BLACK OAK HERITAGE PARK DESIGNATIONS WITHIN THE CITY OF WINDSOR OFFICIAL PLAN

Schedule A: Planning Districts and Policy Areas	The entire Park is designated as a "*Planning District*".
Schedule B: Greenway System	The entire Park is designated as "*Natural Heritage*".
Schedule C: Development Constraint Areas	The entire Park is designated as "*Natural Heritage*".
Schedule D: Land Use	The entire Park is designated as "*Natural Heritage*".

7.3.2 The City of Windsor Comprehensive Zoning By-Law

The City of Windsor has protected Black Oak Heritage Park through the zoning by-law. The Park is zoned as GD1.4: Green District 1 - Natural Heritage Area. The permitted uses of this zoning are a *Natural Heritage Area* and any use accessory to the *Natural Heritage Area*. *Buildings* or *Structures* that not accessory to the *Natural Heritage Area* are prohibited.

The zoning bylaw notes that Black Oak Heritage Park is within the "*approximate limits of land subject of potential flooding along the Detroit River, Lake St. Clair and Inland watercourses as determined by the Essex Region Conservation Authority (ERCA). Within these areas, buildings or structures are generally restricted and possibly prohibited. Application for building permits will be referred to ERCA for its review and the issuance of permits prior to the Insurance of any building permit by the City of Windsor*."

The City of Windsor must continue to manage Black Oak Heritage Park to ensure that zoning requirements can be met and maintained.

7.3.3 Rediscover our Parks: Parks and Outdoor Recreation Master Plan (A twenty-year vision 2015 to 2035)

The City of Windsor Parks and Outdoor Recreation Master Plan is an official document that helps to direct Black Oak Heritage Park system and its operational management for the next 20 years." The goal of this plan is "*to sustainably develop and maintain parkland and recreational activities with our natural and cultural resources; fostering economic growth within the city, while cultivating a quality of life for diverse, healthy, active and livable neighbourhoods*."

Within this document, Black Oak Heritage Park is classified as a Regional Park. Regional Parks are owned by the municipality, the federal or provincial governments or the Essex Region Conservation Authority. As per the Official Plan, Community and Regional Parks are designed for the recreation and leisure activities of all Windsor residents and/or a broader regional population.

The Parks and Outdoor Recreation Master Plan recognizes that the Ojibway Prairie Complex is of natural significance to the City of Windsor, in addition to being one of the most significant and biologically diverse areas in Canada. This Plan acknowledges that the City of Windsor has a unique opportunity to consider the creation of a continuous corridor that surrounds the City from east to west, by connecting existing significant habitats such as prairie, savannah, forest, river valley land and swamp. The Ojibway Prairie Complex would be an integral part of this corridor.

The Parks and Outdoor Recreation Master Plan provides a number of recommendations that can be applied to Black Oak Heritage Park. Some notable recommendations for consideration include the following:

1. Prepare standards for the establishment of urban wildlife and habitat to:
    i. Accommodate expansion of the natural areas to help facilitate better management of Species at Risk, habitat for urban wildlife and opportunity for nature related recreation for people;
    ii. Establish a protocol for succession control in managed natural and naturalized areas to deter the establishment of exotic and aggressive naturally invasive species; and
    iii. Place a high priority on sustainability and ecological integrity in managing vegetation, using native plants where possible, especially for restoration of disturbed areas, and naturalization projects.
2. To protect and promote existing natural areas and provide connections where available.
3. To promote naturalization where warranted to create buffers and connections to natural areas in consultation with the community.
4. Identify and review parks or portions of parks for naturalization and establish appropriate strategies with public consultation.
5. Collaborate with ERCA to provide performance and management strategies for all parks and naturalized areas including:

   i. Fish habitat along riverfront lands;
   ii. Watershed management areas;
   iii. Prairies; and
   iv. Woodlots.
6. The City of Windsor should coordinate a stewardship project with ERCA in order to secure *Priority Natural Significant Lands* such as Ojibway Shores, Sandwich South Planning District and any other opportunities where natural features exist to improve the natural heritage system in the City.
7. Apply under criteria ix and x of the nomination process of UNESCO to establish the Ojibway Nature Complex of parks as a UNESCO Heritage site through the assistance of the Friends of Ojibway Prairie and ERCA, based on the universal natural significance of the properties.
8. Include environmental considerations in the planning of major new trails through natural areas, and design trails to minimize environmental impacts.
9. Develop trail heads and staging areas with the appropriate amenities for users including; wayfinding and interpretation.
10. Develop a 'Parkland Encroachment Policy and Procedure' to enforce and educate the public regarding encroachment into city parks and open space.
11. Establish a 'Management Plan' for each city park and open space.
12. Establish a labelling protocol for interpretation and communication of the horticultural and biodiversity of the plant material found in select premier natural and horticultural parks.
13. Park design should be in character with the type of park, its location and setting and operational management practices.

7.3.4 City of Windsor Environmental Master Plan (2017)

The Environmental Master Plan (EMP) was first developed in 2006 to provide a guidance document for the City of Windsor to address environmental issues. The EMP brings together a strategic direction, guiding principles and actions plans with the goal of strengthening the City of Windsor's environmental performance. There are many goals within the EMP that are related to park development, enhancement and conservation. The goals and objectives of the EMP that apply to Black Oak Heritage Park are shown below:

1. Improve Our Air Quality:
   i. Reduce the City's contribution to poor air quality days; and
   ii. Develop, expand and maintain a connected network of safe bicycling and walking facilities.
2. Improve Our Water Quality:
   i. Improve stormwater management to reduce the risk of flooding to residents.
3. Responsible Land Use:
   i. Expand public understanding of the value of natural spaces and native plants;
   ii. Develop a coordinated approach to invasive species in parks, natural areas and the public right-of-way;
   iii. Acquire or transition additional lands for integration into our parks, natural areas and natural heritage system;

iv. Protect, enhance and expand the quality and condition of our natural areas and wetlands;
v. Protect and enhance the quality and condition of our urban forest canopy;
vi. Increase connectivity within and between our parks and natural areas; and
vii. Enhance and increase natural shade as a climate change adaptation measure.

4. Increase Resource Efficiency:
   i. Consider environmental design in newly constructed or retrofitted municipal projects; and
   ii. Integrate environmental sustainability and climate change into Asset Management.
5. Promote Awareness:
   i. Promote the link between environmental health and human health to Windsor residents;
   ii. Report on the progress of the implementation of the Environmental Master Plan;
   iii. Increase awareness among residents and stakeholder of the City's environmental programs, policies and initiatives;
   iv. Continue to invest and develop partnerships;
   v. Ensure involvement of residents and stakeholders in environmental decision making; and
   vi. Showcase Windsor's Environmental Commitment outside the Region.

Please refer to the EMP for more guidance on how to implement these goals and objectives. In addition, as part of the City of Windsor's EMP implementation a number of environmental indicators were tracked over time and to be presented in a report every four to five years. This report, known as the City of Windsor's ROSE: Report on the State of our Environment (2017) categorizes these indicators according to the five goals of the EMP. This document provides an additional resource to use when planning future development and restoration activities within Black Oak Heritage Park.

8.0 MANAGEMENT RECOMMENDATIONS

In addition to summarizing the historic and current ecological diversity of Black Oak Heritage Park, this Management Plan is intended to provide management recommendations for future restoration actions. These recommendations are focused on enhancing or restoring diminished tallgrass woodland, savannah and prairie habitat for Provincially Significant or Species at Risk flora and fauna.

The main goal of the management recommendations is to provide for the protection and restoration of the most productive and fragile ecosystems. To achieve this goal, three objectives must be met:

1. Protect and restore sensitive areas of Black Oak Heritage Park identified within this Management Plan to encourage Provincially Significant species and Species at Risk to expand their range or return to the Park;
2. Promote the re-establishment of connectivity through natural linkages between remnant patches of prairie, savannah and woodland to allow for undisturbed movement of Species at Risk; and
3. Complete restoration activities in partnership with other organizations, such as the Herb Gray Parkway, Ontario Parks, Gordie Howe International Bridge and Essex Region Conservation Authority (ERCA) projects to ensure the inclusivity of knowledge from regulatory agencies.

Restoration activities will benefit targeted flora and fauna Species at Risk populations through the restoration and enhancement of their native habitat within Black Oak Heritage Park. The following restoration activities are recommended to complete the main objectives of this management plan:

1. Retain tallgrass prairie and woodland communities to maintain habitat for Species at Risk and Provincially Significant species;
2. Thin forest communities of invasive species, including a special focus on overly abundant native Black Walnut populations (Refer to Section 1.2.1.1 of Appendix H for Black Walnut Management recommendations);
3. Protect wetland communities to conserve their well-balanced ecosystems;
4. Use woody plant removal techniques and herbicide application as the first stage of restoration method; and
5. Complete prescribed burns on selected Ecological Land Classification (ELC) vegetation communities.

Restoration techniques to aid in the completion of these objectives can be seen in **Appendix H**. Objectives to help accomplish future management and restoration goals can be seen in **Appendix I**.

9.0 MONITORING & ADAPTIVE MANAGEMENT STRATEGY

A Monitoring Program and Adaptive Management Strategy needs to be developed to evaluate the progress of the goals and management recommendations defined in this report. Field surveys completed in 2018 can be used as a starting point or baseline for annual monitoring. The Restoration and Monitoring Programs should be re-evaluated yearly allowing for implementation of adaptive management techniques to ensure a positive restoration outcome.

Documenting how, when and where creation, restoration or enhancement efforts are implemented and how the Management Unit responds will be essential. A comparison of baseline and annual monitoring data provides details on the changes that occurred. This analysis allows the restoration practitioner to:

1. View the rate of change of the Management Unit;
2. Track the abundance and distribution of plants and animals as a result of management actions; and
3. Determine which prescriptions and conditions provided favourable restoration results.

Implementing a Monitoring and Adaptive Management Strategy provides a scientifically defensible basis for making accurate, ongoing and future restoration decisions based upon the progress of the past actions.

10.0 CONCLUSION

Black Oak Heritage Park has a significant biological, archeological, cultural and historic importance to the City of Windsor and associated communities. The Park strengthens the biodiversity in the region and is one of the largest surviving tallgrass prairie remnants left in Ontario. Habitats found in Black Oak Heritage Park including tallgrass prairie, savannah and woodland are some of the most endangered habitats on earth. The Ojibway Prairie Complex contains more federally and Provincially Rare species and Species at Risk than any other park system in Ontario.

Restoration and protection of the high-quality habitats within Black Oak Heritage Park is required to prevent woody plant succession, use of tracks and trails in sensitive areas and to reduce the competition of invasive plant species. Implementing the prescriptions in this management plan is necessary to save and restore what is left of this precious gem.

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Supplemental

Trail Forks. Mountain bike trails as defined by users from: https://www.trailforks.com/trails/black-oak-heritage/?activitytype=10

APPENDICES

APPENDIX A: FIGURES

Figure 1: Key Plan

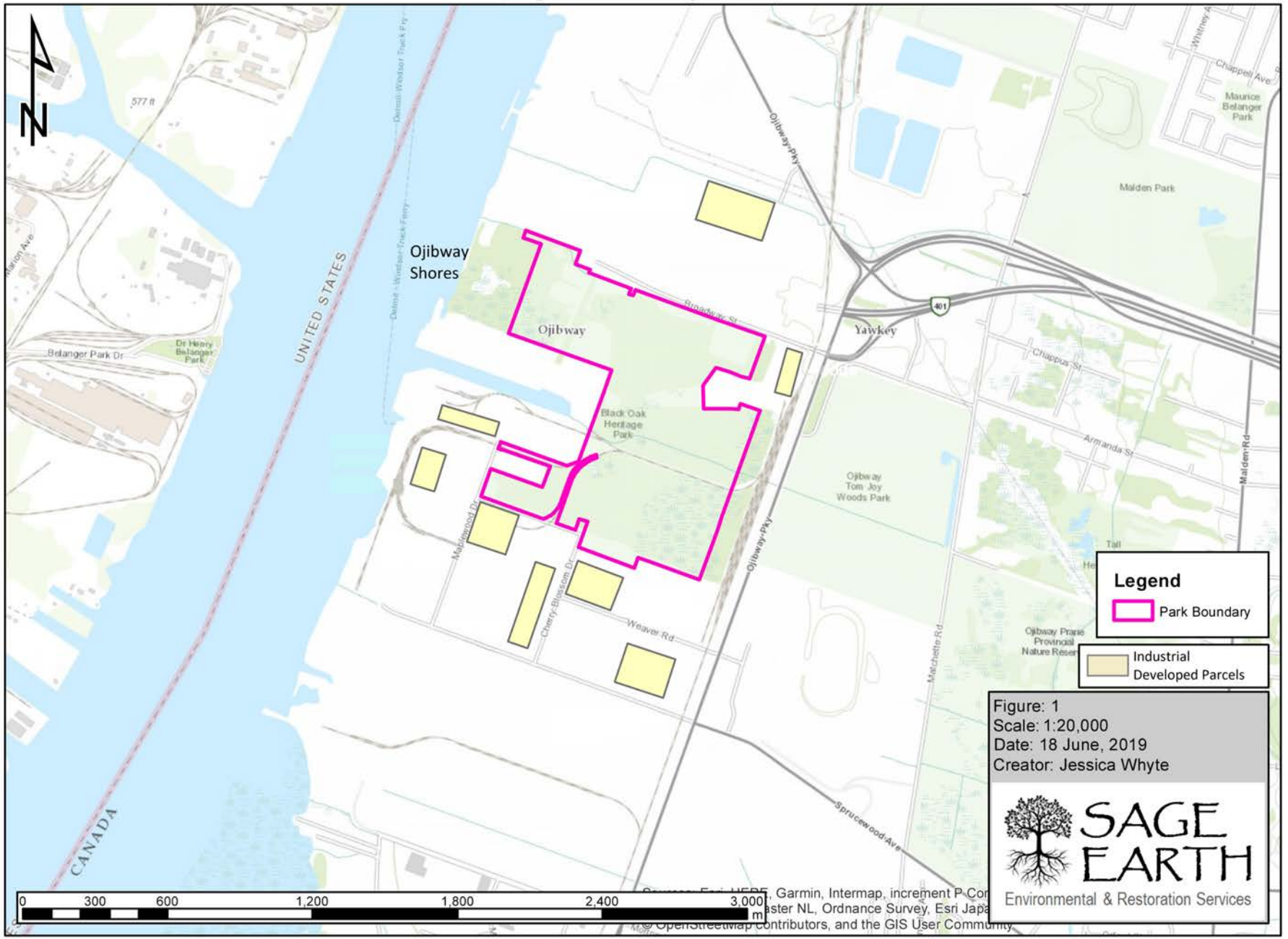


Figure 2: Historical Ecological Land Classification (1948)

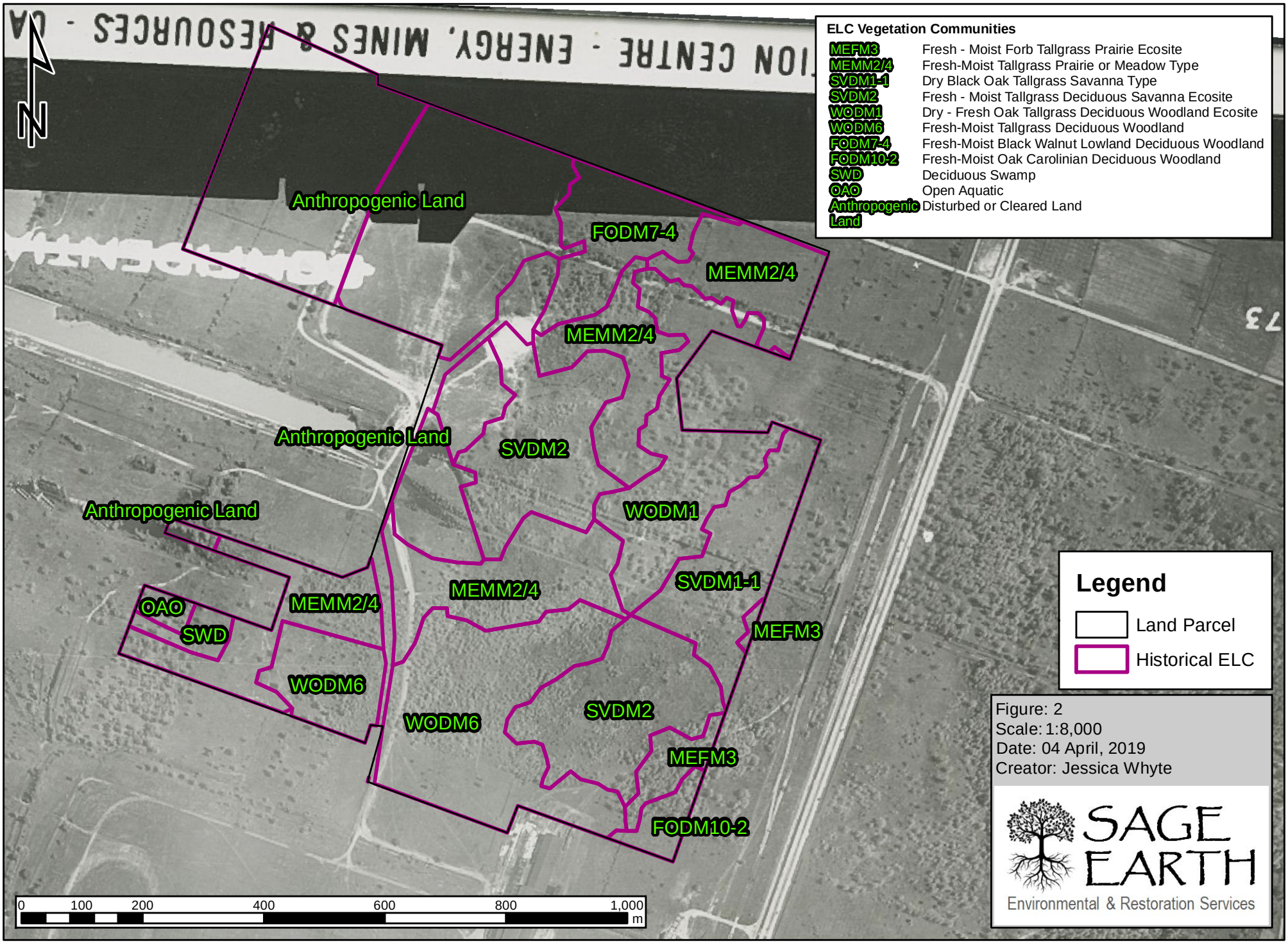


Figure 3: Historical Ecosystem Stressors (1948)

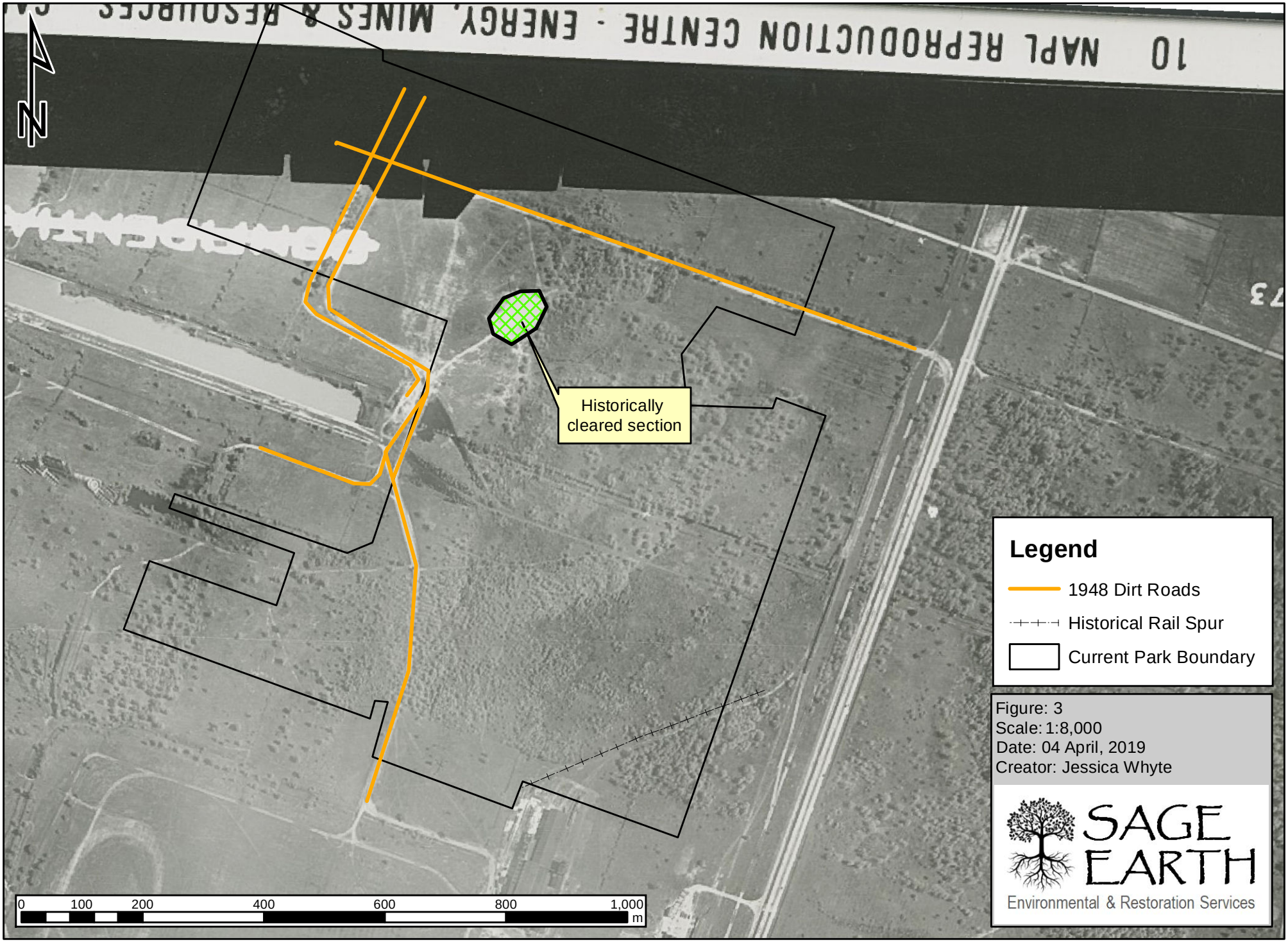


Figure 4: Historical Ecosystem Stressors (1972)

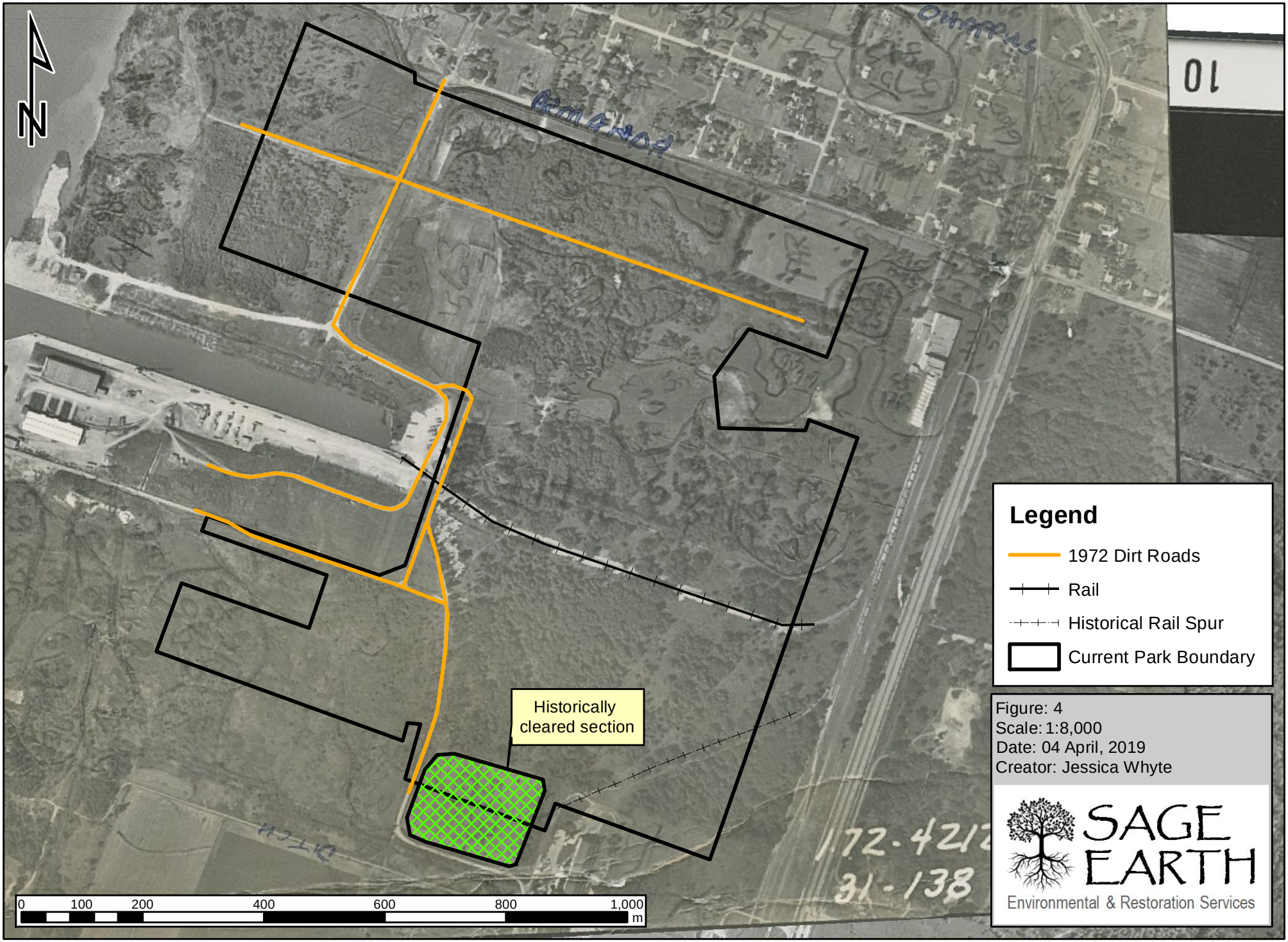


Figure 5: Historical Ecosystem Stressors (1978)

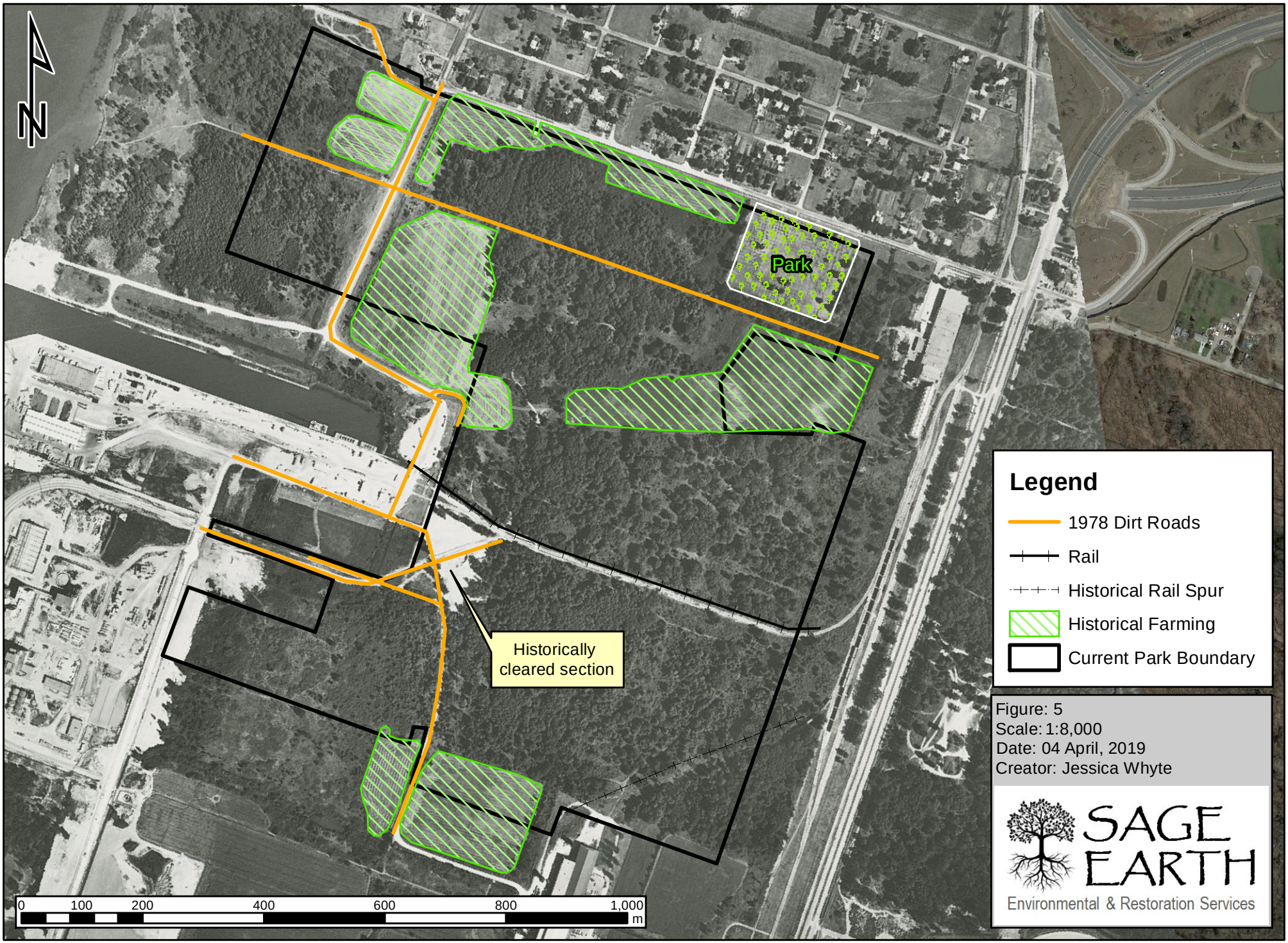


Figure 6 - Land Information Ontario Natural Heritage Features

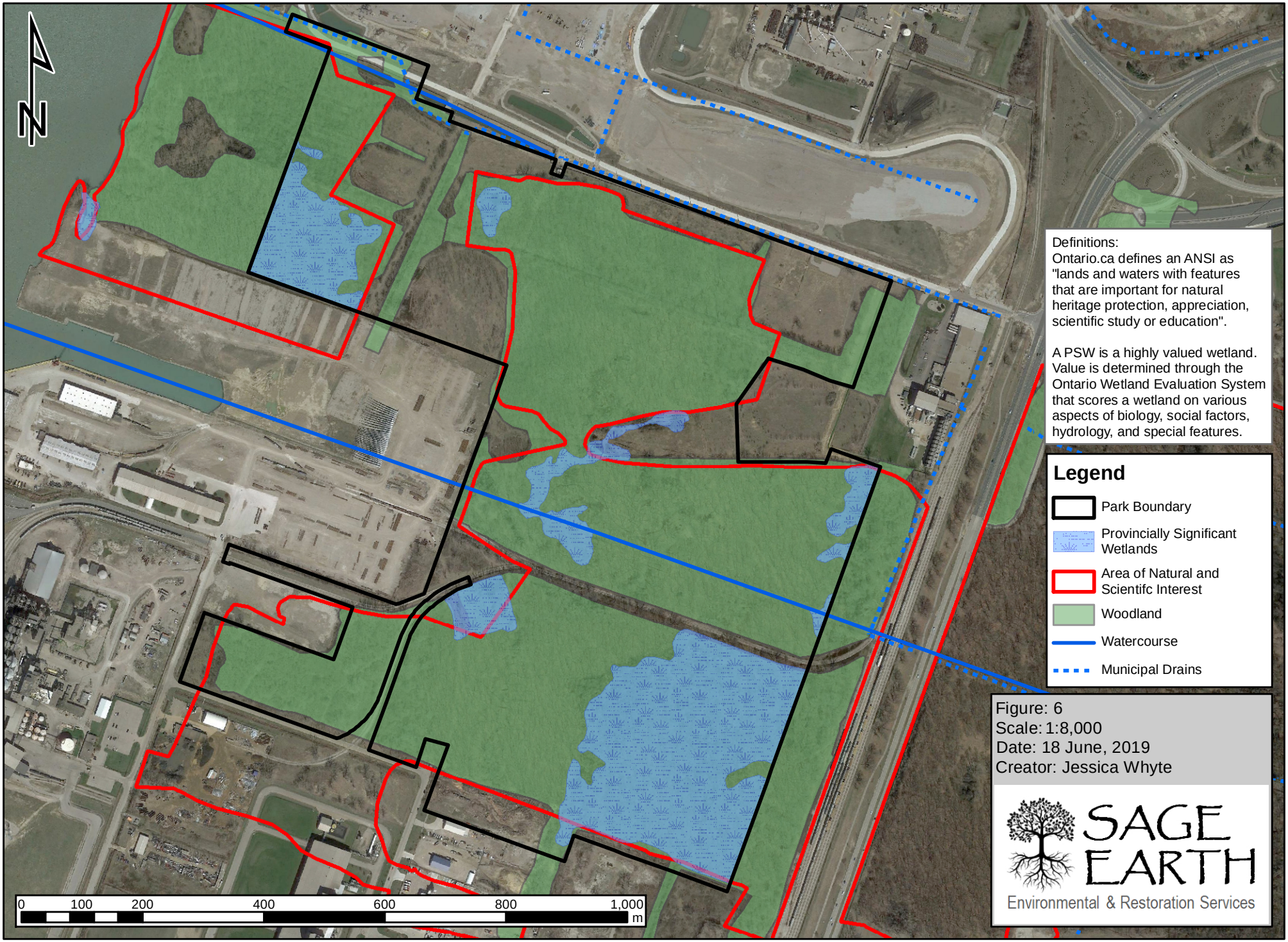


Figure 7: Existing Conditions - Ecological Land Classification

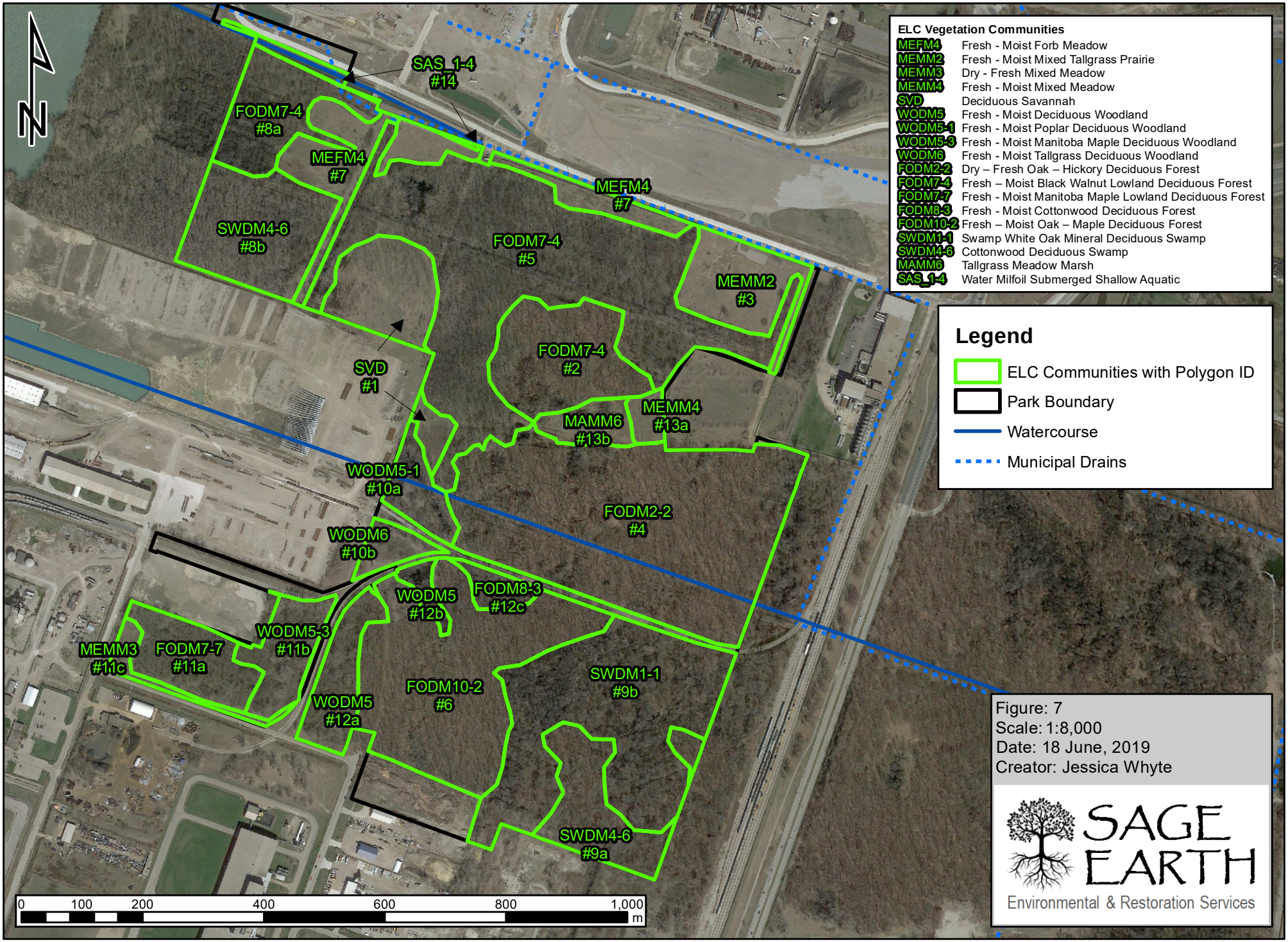
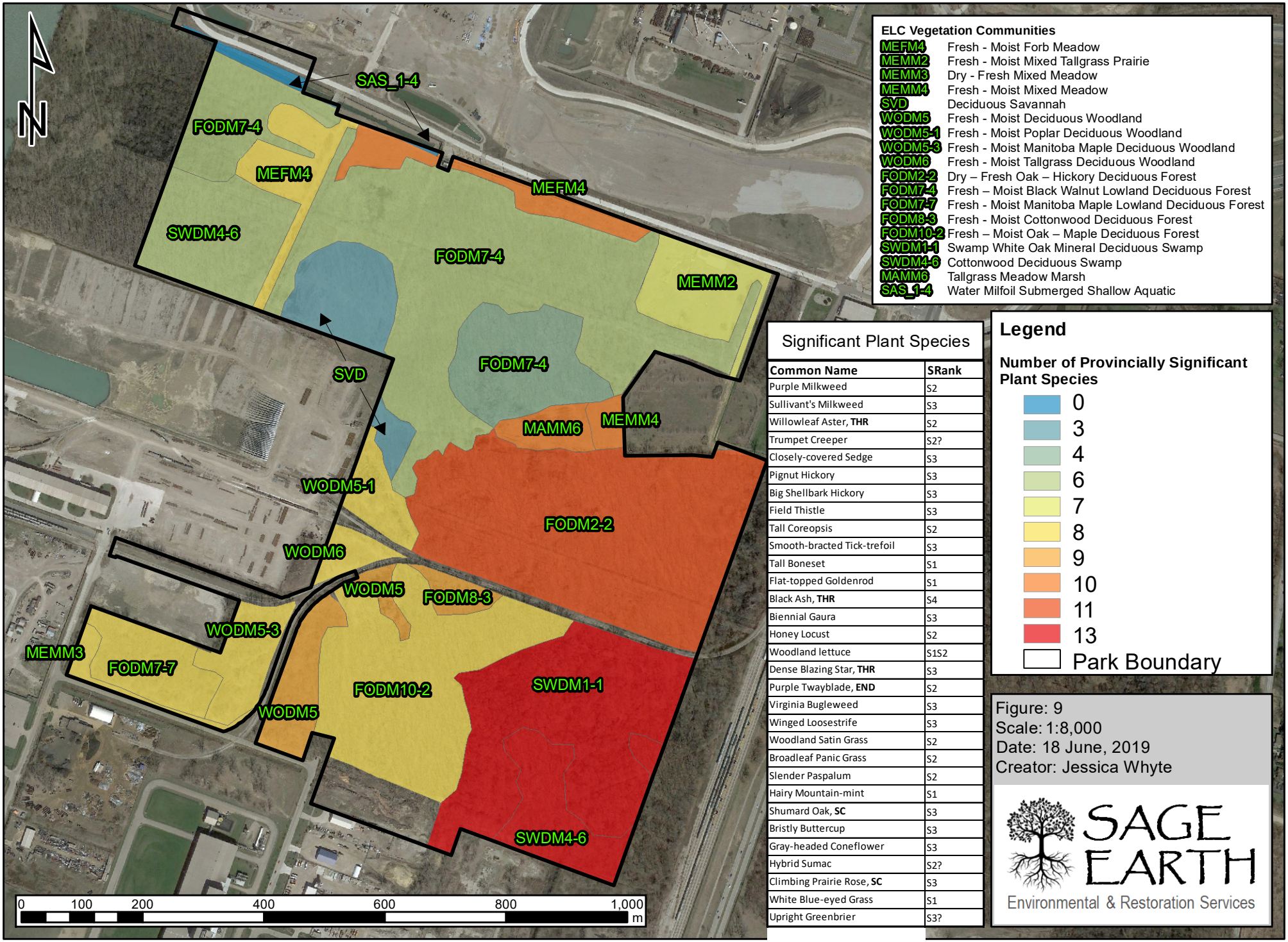


Figure 9: Species at Risk and Provincially Significant Plants



ELC Vegetation Communities

MEFM4	Fresh - Moist Forb Meadow
MEMM2	Fresh - Moist Mixed Tallgrass Prairie
MEMM3	Dry - Fresh Mixed Meadow
MEMM4	Fresh - Moist Mixed Meadow
SVD	Deciduous Savannah
WODM5	Fresh - Moist Deciduous Woodland
WODM5-1	Fresh - Moist Poplar Deciduous Woodland
WODM5-3	Fresh - Moist Manitoba Maple Deciduous Woodland
WODM6	Fresh - Moist Tallgrass Deciduous Woodland
FODM2-2	Dry – Fresh Oak – Hickory Deciduous Forest
FODM7-4	Fresh – Moist Black Walnut Lowland Deciduous Forest
FODM7-7	Fresh - Moist Manitoba Maple Lowland Deciduous Forest
FODM8-3	Fresh - Moist Cottonwood Deciduous Forest
FODM10-2	Fresh – Moist Oak – Maple Deciduous Forest
SWDM1-1	Swamp White Oak Mineral Deciduous Swamp
SWDM4-6	Cottonwood Deciduous Swamp
MAMM6	Tallgrass Meadow Marsh
SAS_1-4	Water Milfoil Submerged Shallow Aquatic

Significant Plant Species

Common Name	SRank
Purple Milkweed	S2
Sullivant's Milkweed	S3
Willowleaf Aster, **THR**	S2
Trumpet Creeper	S2?
Closely-covered Sedge	S3
Pignut Hickory	S3
Big Shellbark Hickory	S3
Field Thistle	S3
Tall Coreopsis	S2
Smooth-bracted Tick-trefoil	S3
Tall Boneset	S1
Flat-topped Goldenrod	S1
Black Ash, **THR**	S4
Biennial Gaura	S3
Honey Locust	S2
Woodland lettuce	S1S2
Dense Blazing Star, **THR**	S3
Purple Twayblade, **END**	S2
Virginia Bugleweed	S3
Winged Loosestrife	S3
Woodland Satin Grass	S2
Broadleaf Panic Grass	S2
Slender Paspalum	S2
Hairy Mountain-mint	S1
Shumard Oak, **SC**	S3
Bristly Buttercup	S3
Gray-headed Coneflower	S3
Hybrid Sumac	S2?
Climbing Prairie Rose, **SC**	S3
White Blue-eyed Grass	S1
Upright Greenbrier	S3?

Legend

Number of Provincially Significant Plant Species

- 0
- 3
- 4
- 6
- 7
- 8
- 9
- 10
- 11
- 13
- Park Boundary

Figure: 9
Scale: 1:8,000
Date: 18 June, 2019
Creator: Jessica Whyte

SAGE EARTH
Environmental & Restoration Services

Figure 10: Floristic Quality Index

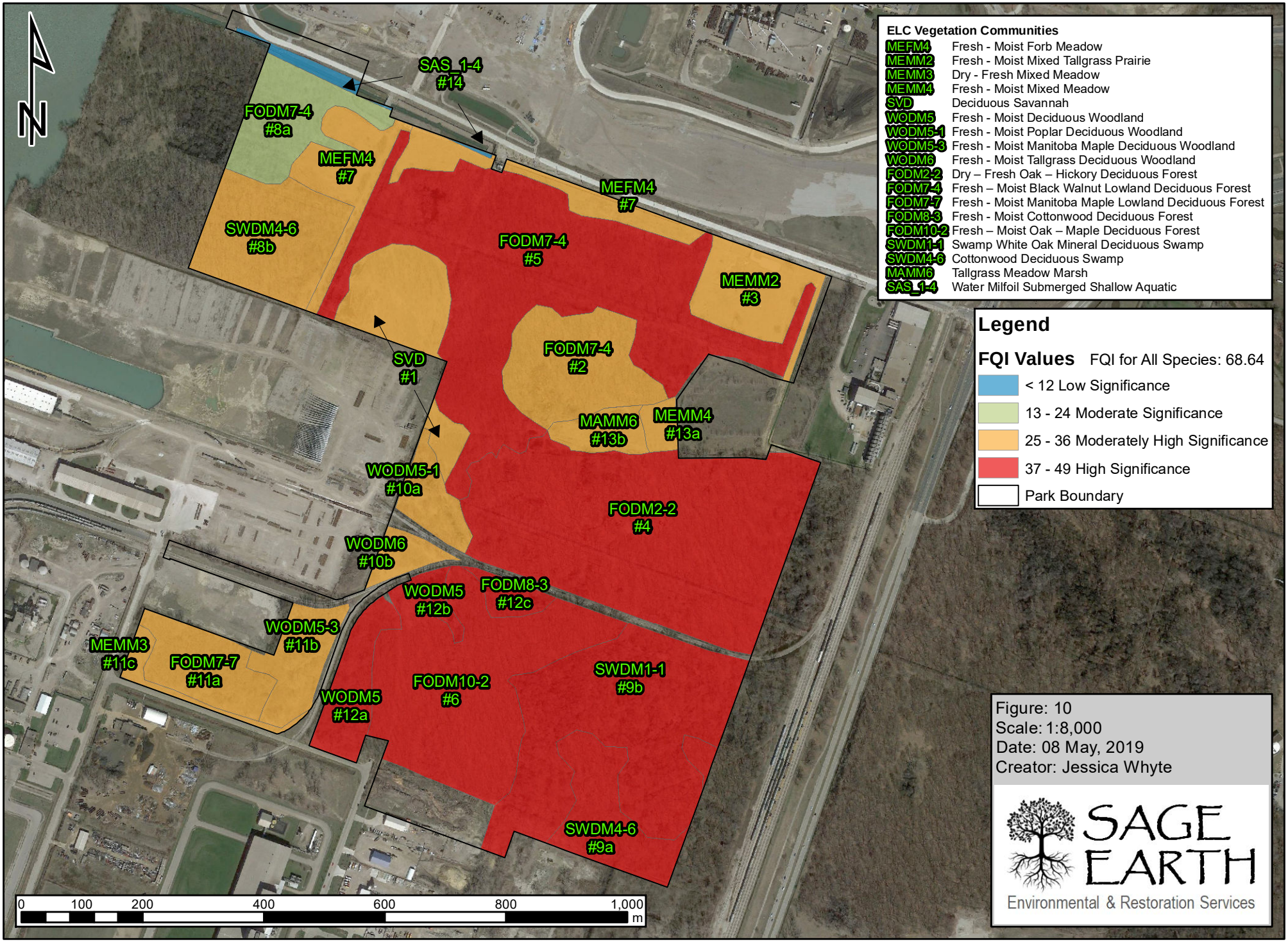


Figure 11: Restoration and Protection Priority Areas

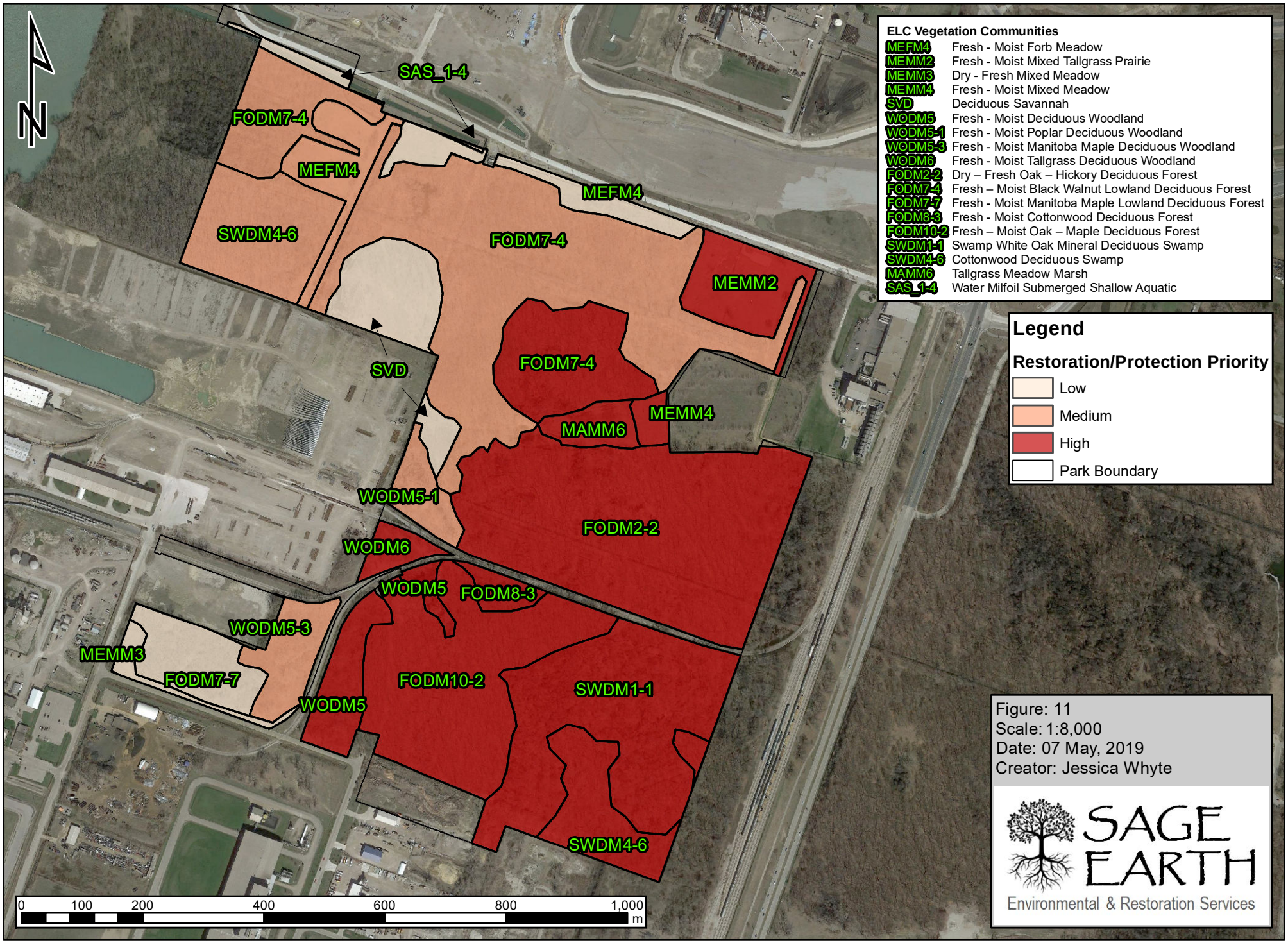


Figure 13: Current Ecosystem Stressors

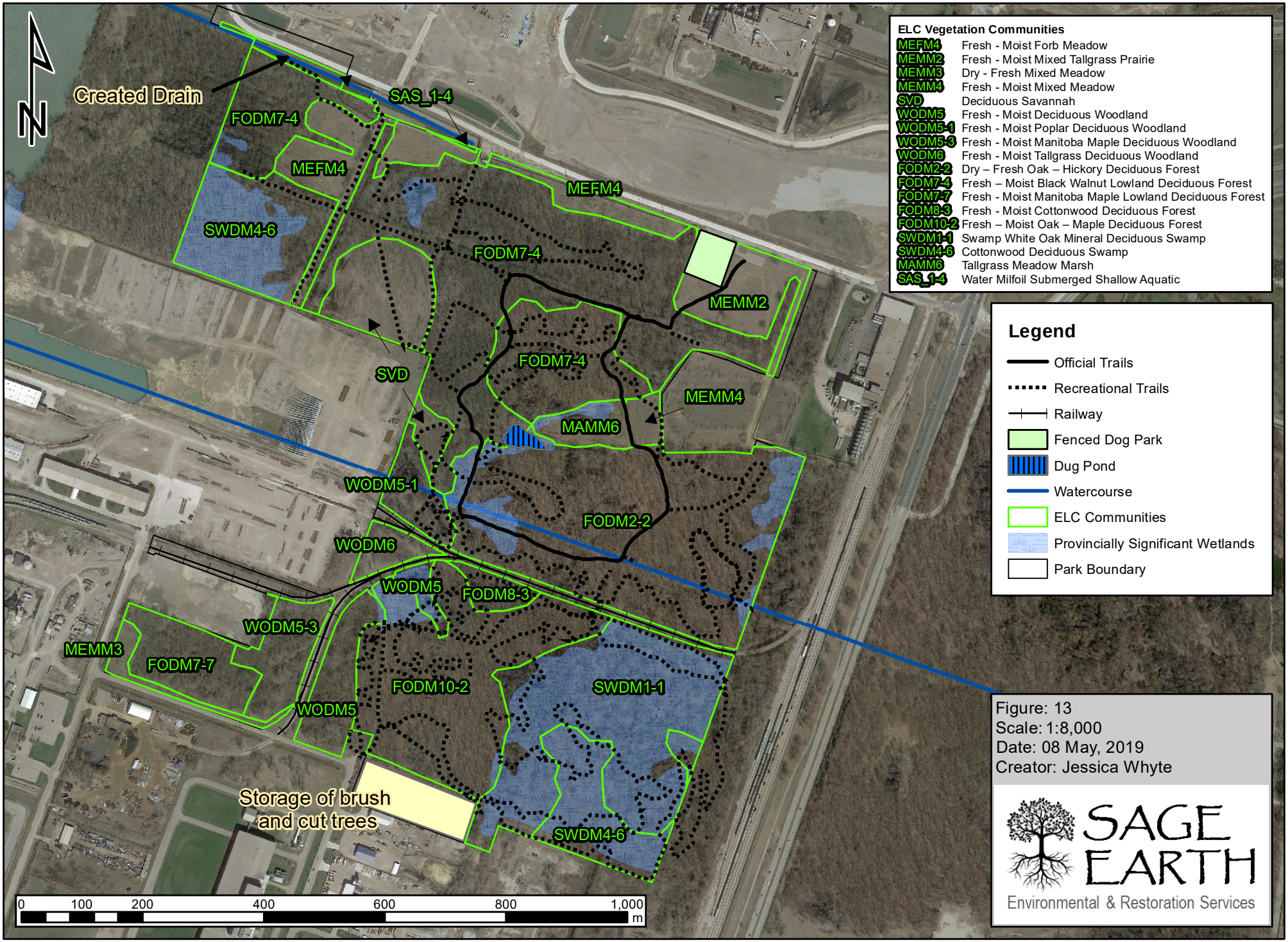


Figure 14: Future ELC Vegetation Communities

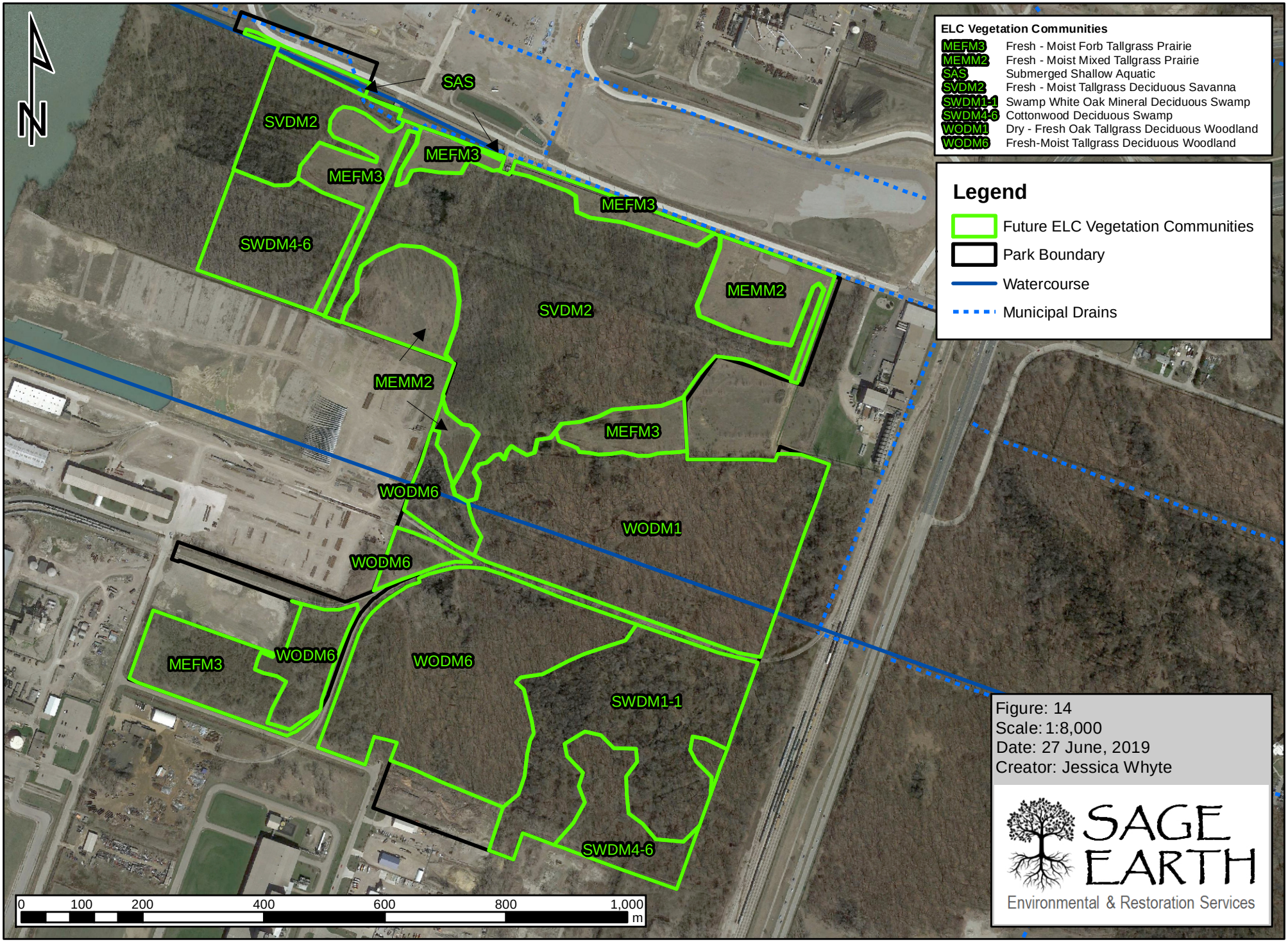


Figure 15: Essex Region Conservation Authority Regulated Areas

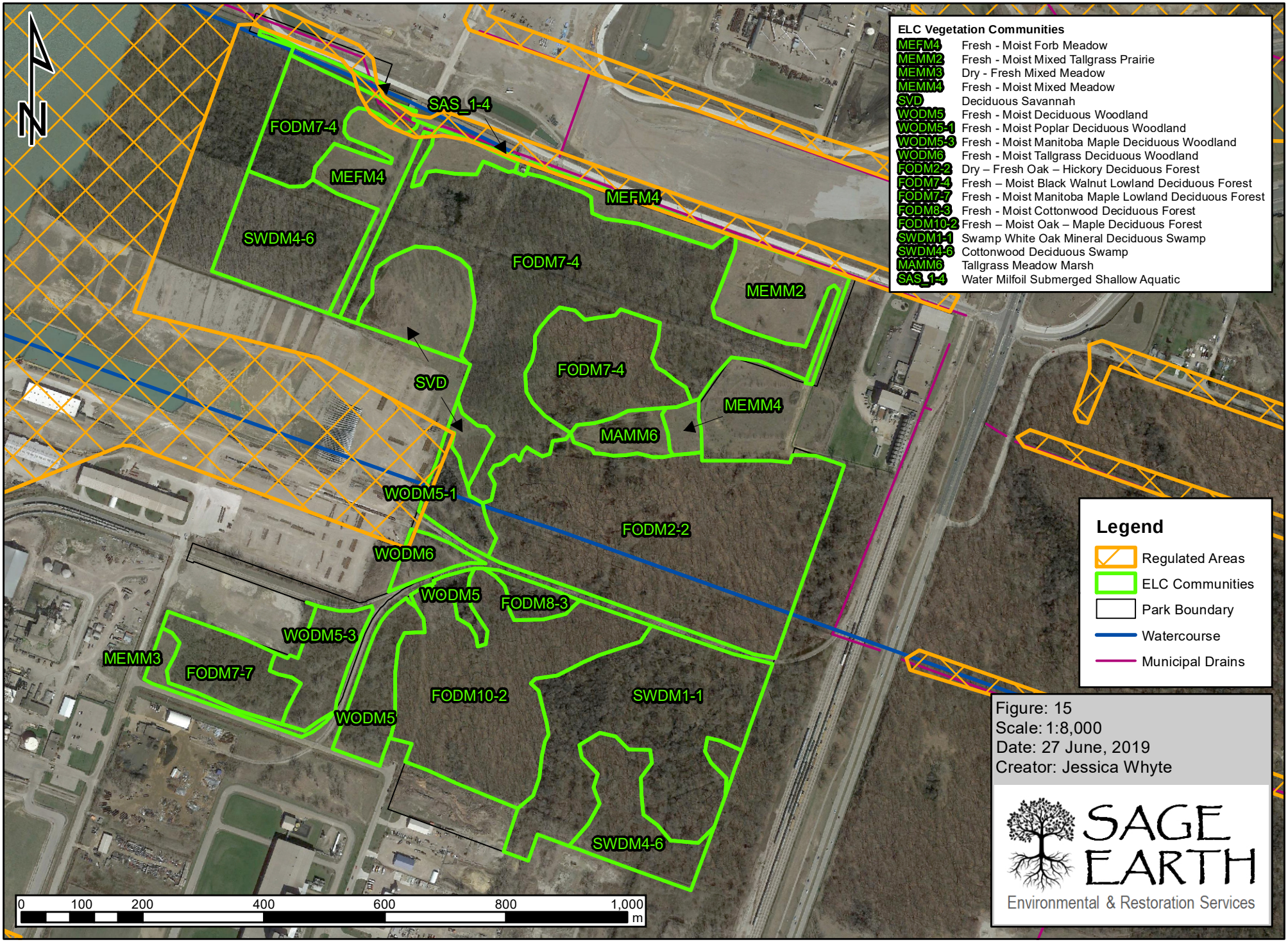


Figure 16: Fire Dependent Vegetation Communities Requiring Prescribed Burns

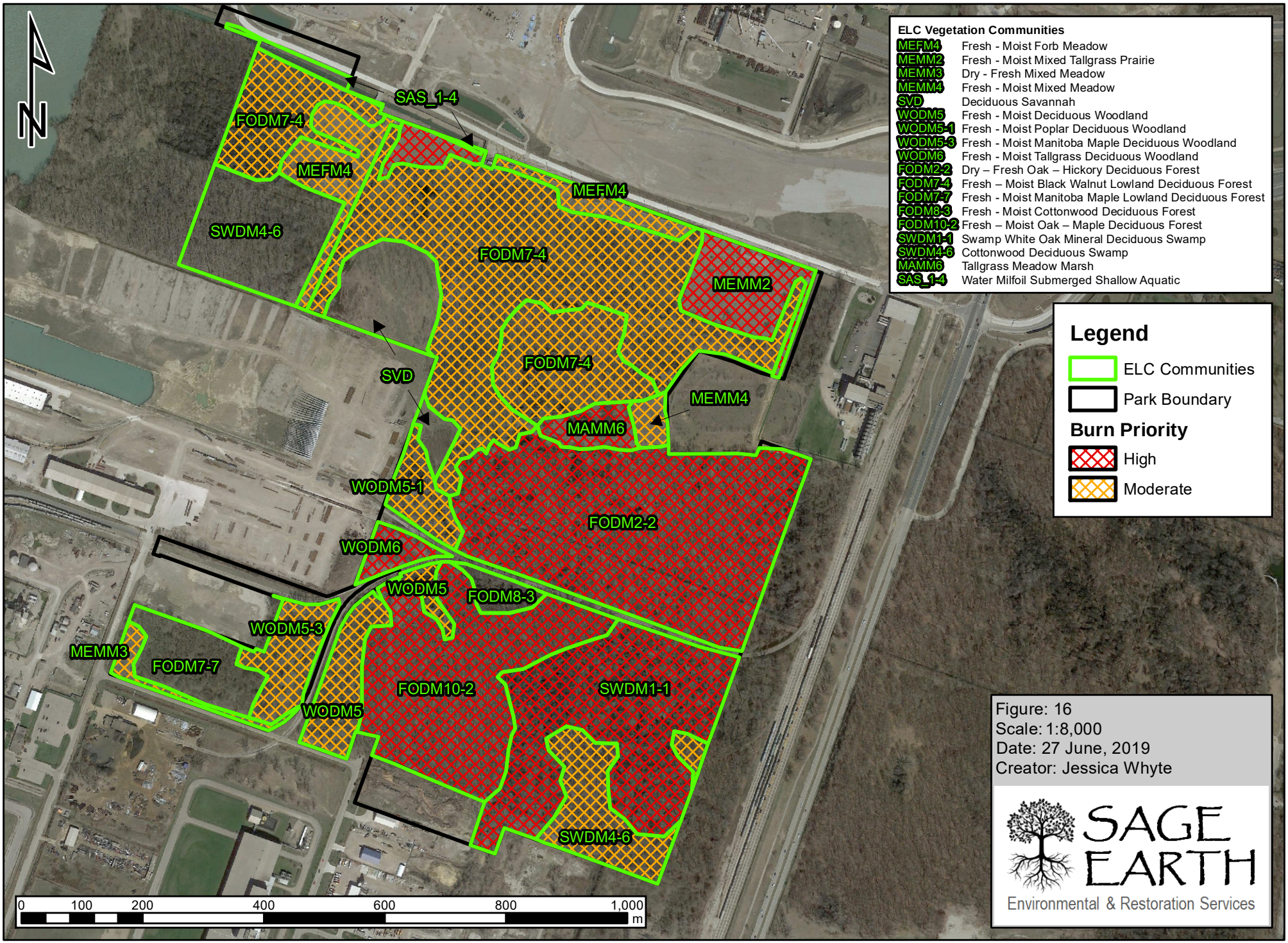


Figure 17: Black Walnut Management

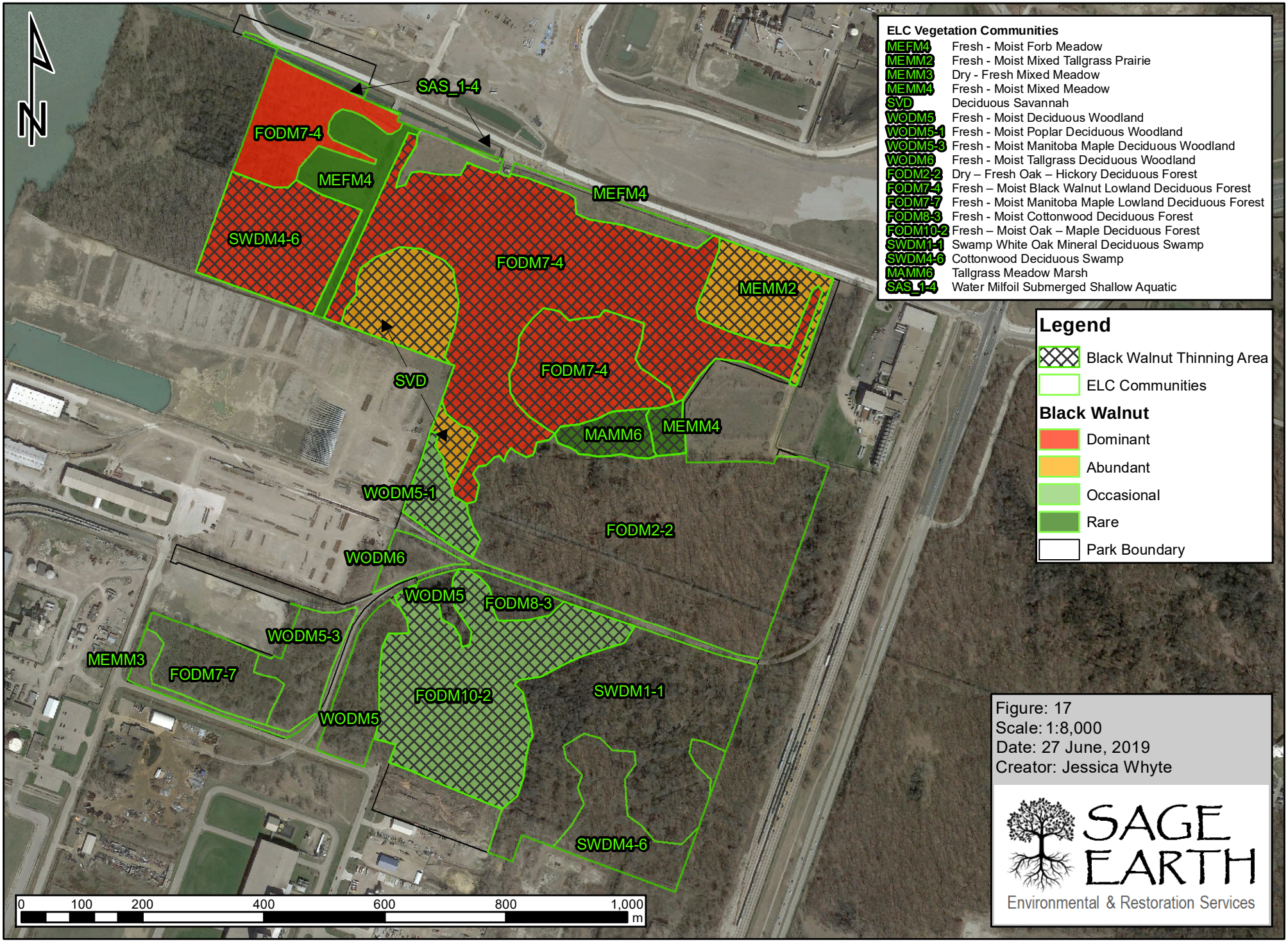


Figure 18: Ecosystem Stressors - Tree of Heaven

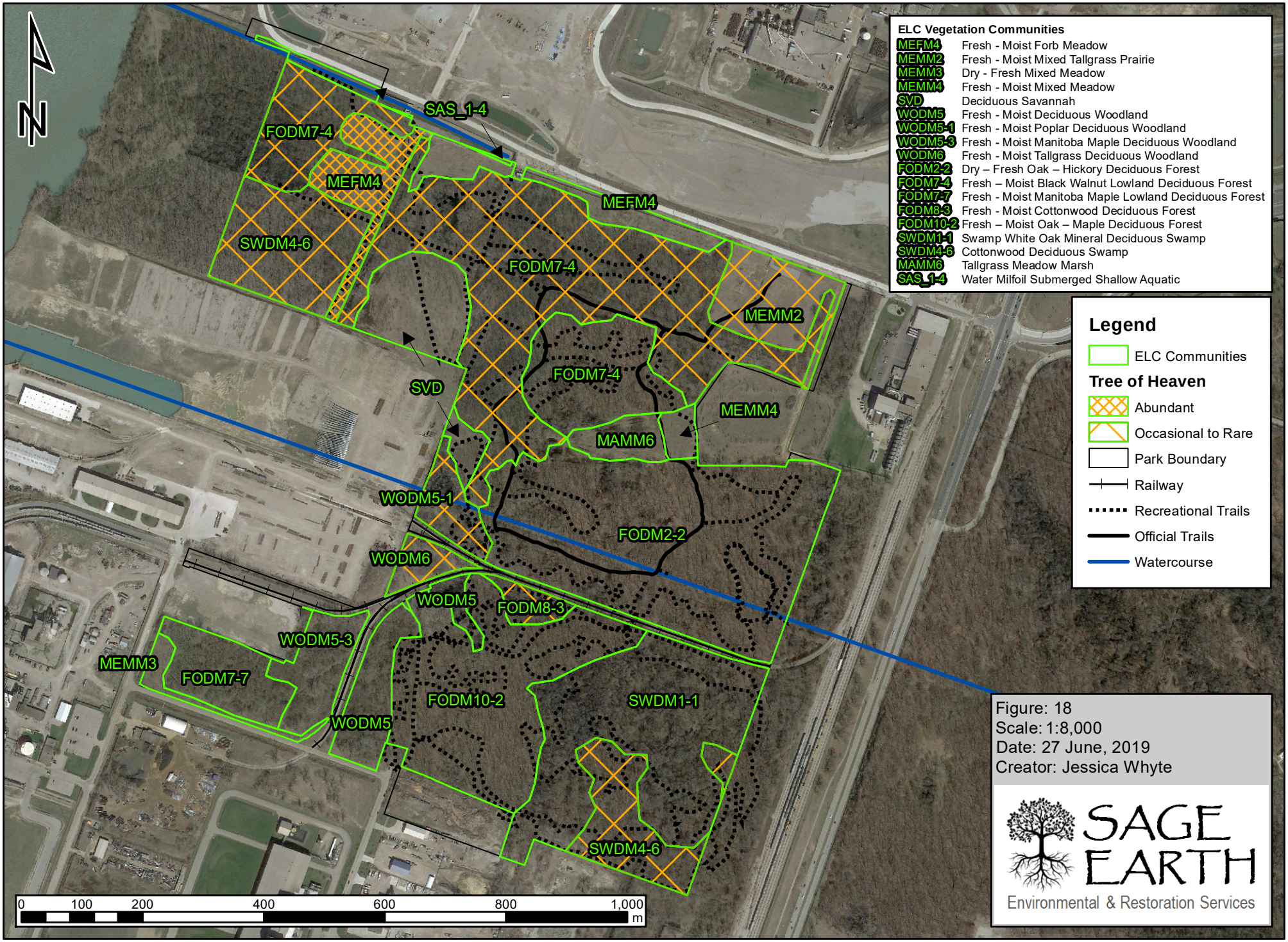


Figure 19: Ecosystem Stressors - White Mulberry

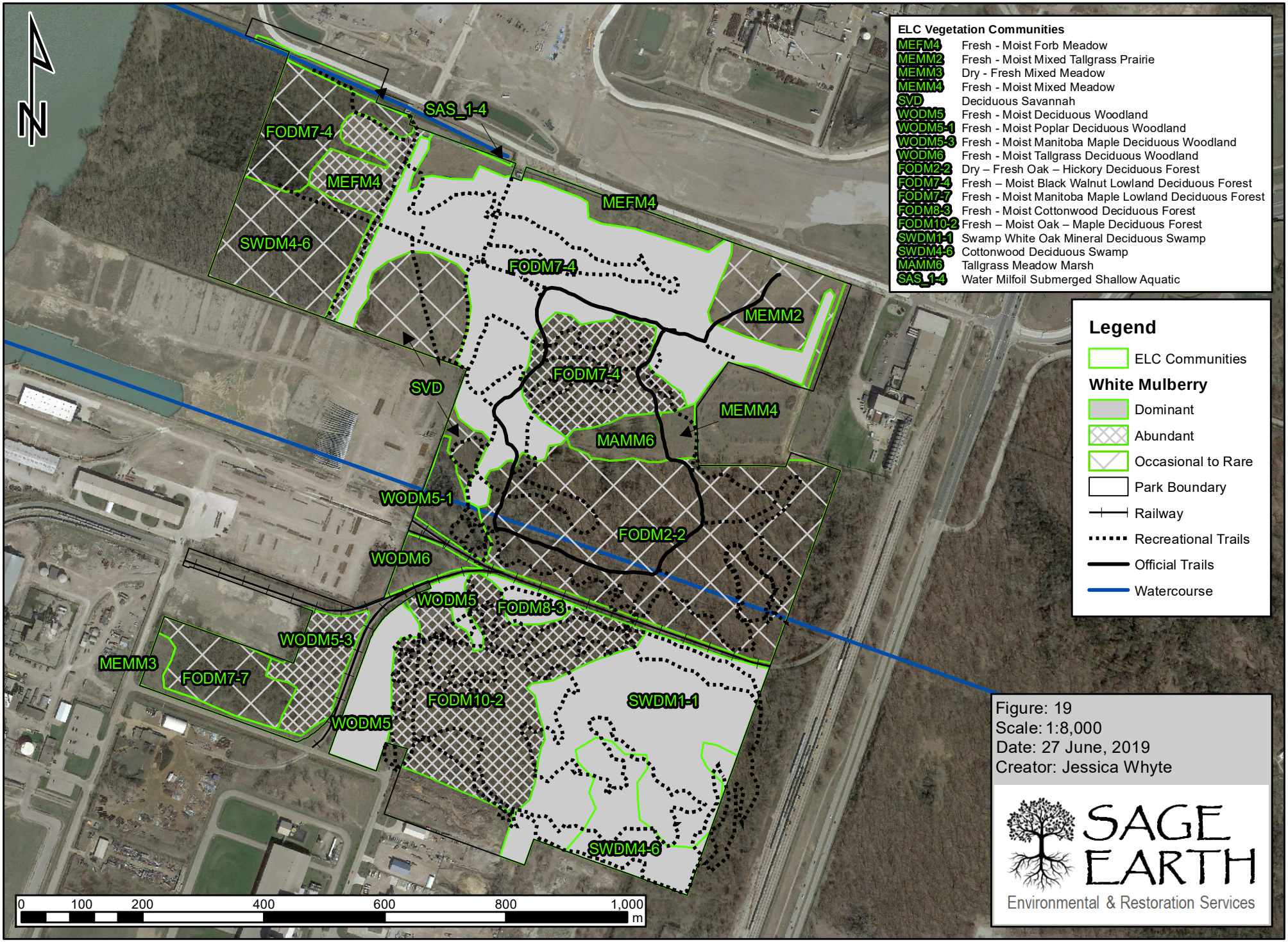


Figure 20: Ecosystem Stressors - Black Locust

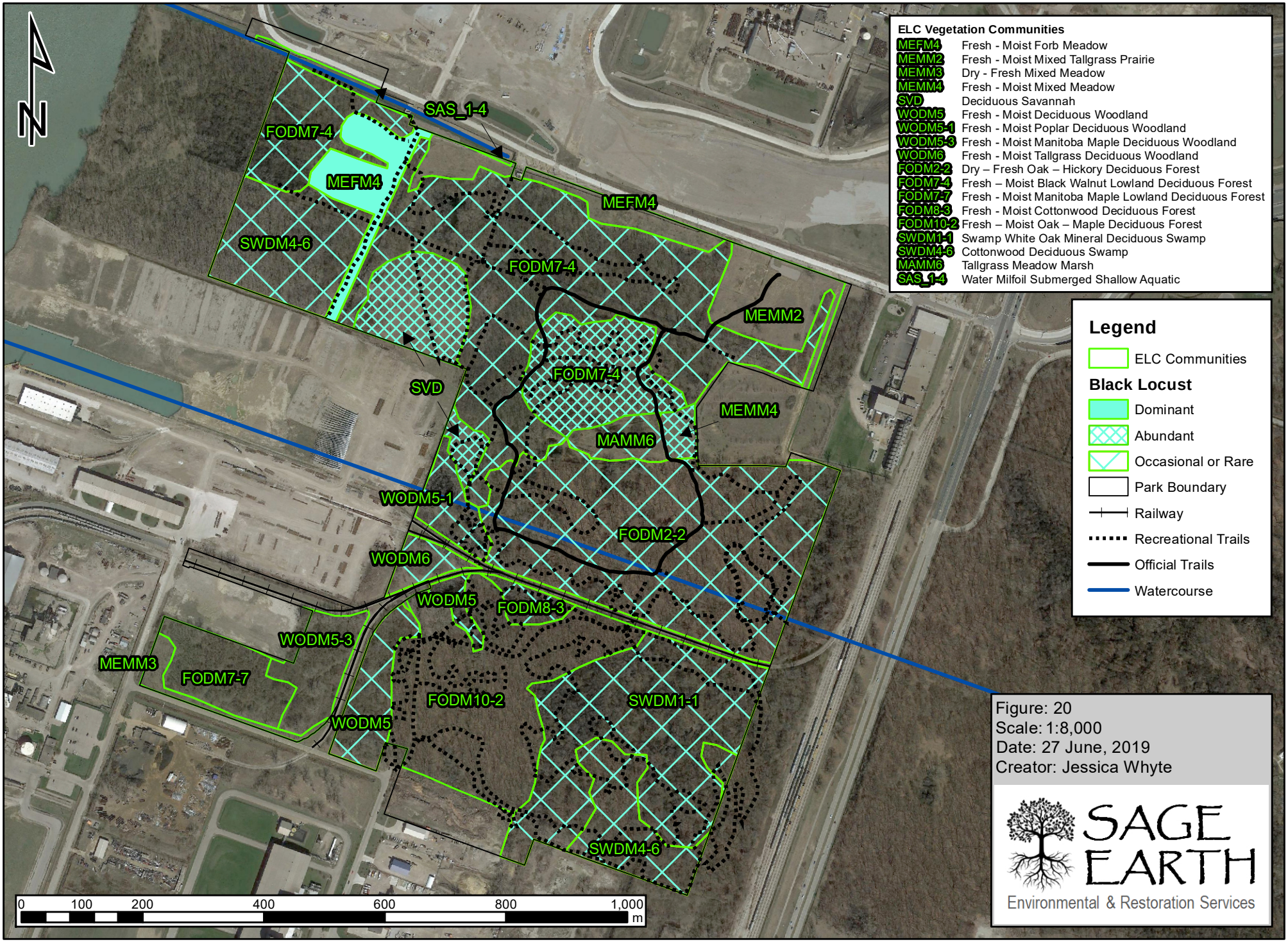


Figure 21: Ecosystem Stressors - Amur Honeysuckle

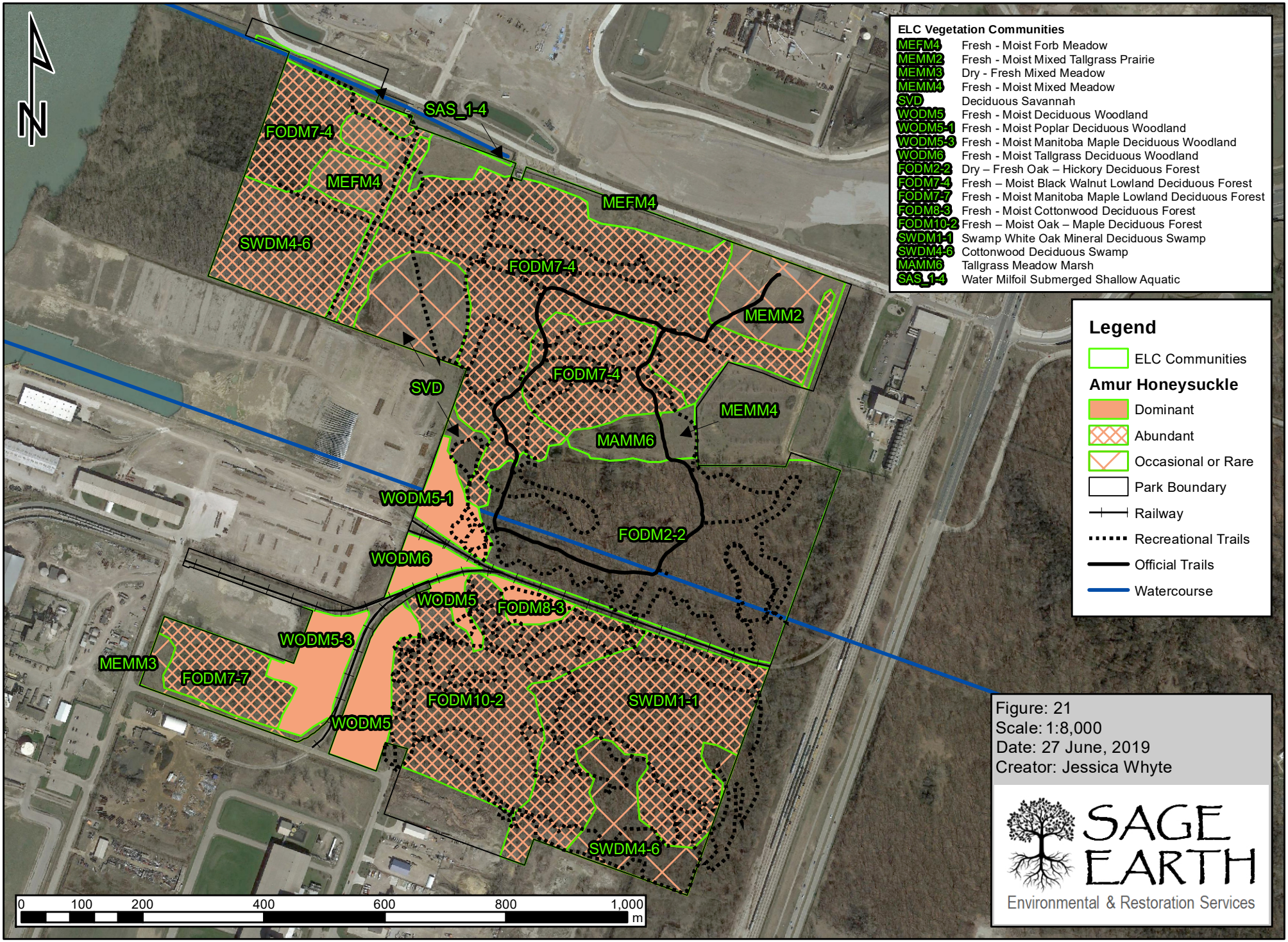


Figure 22: Ecosystem Stressors - Autumn Olive

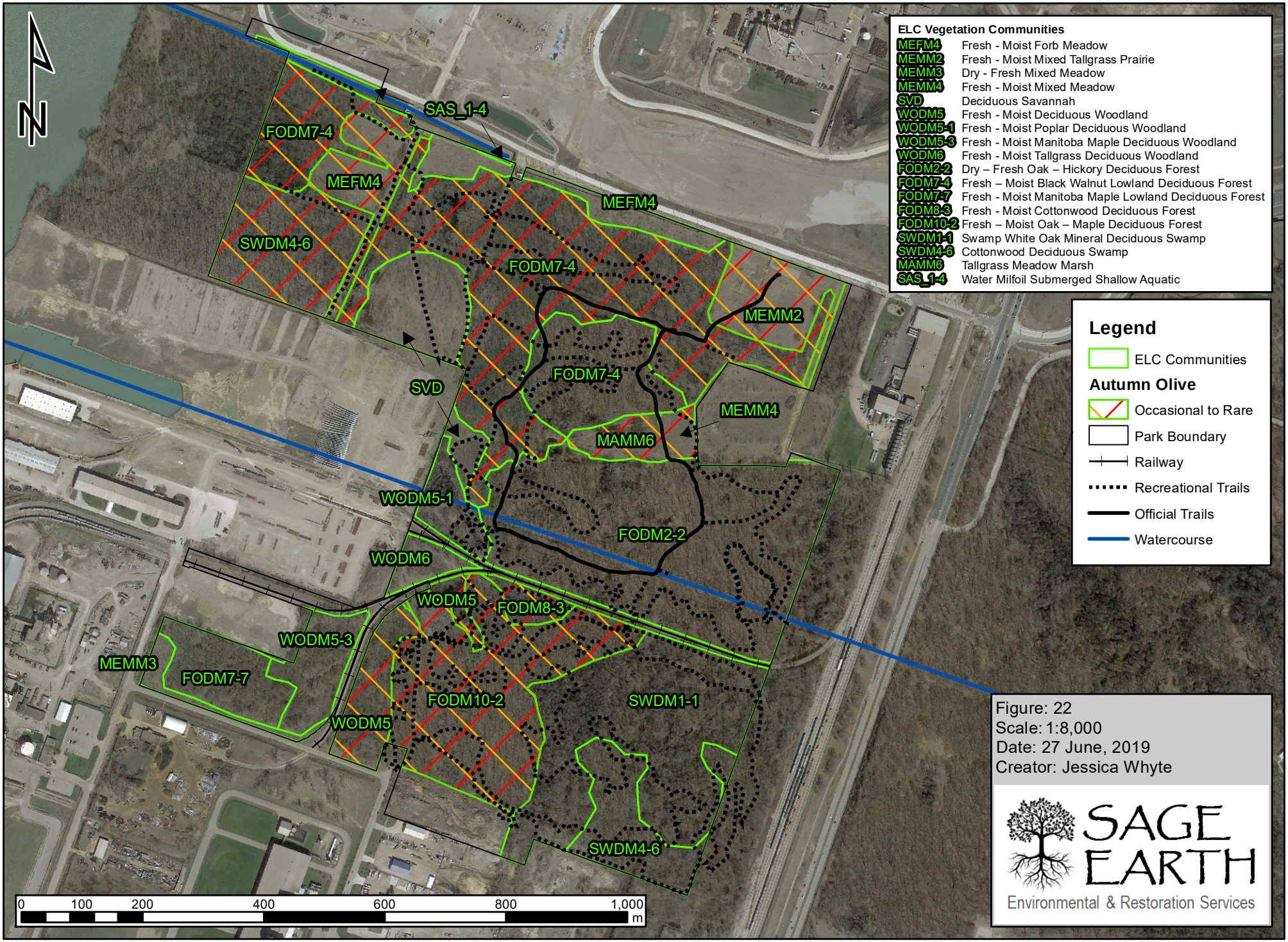


Figure 23: Ecosystem Stressors - Japanese Honeysuckle

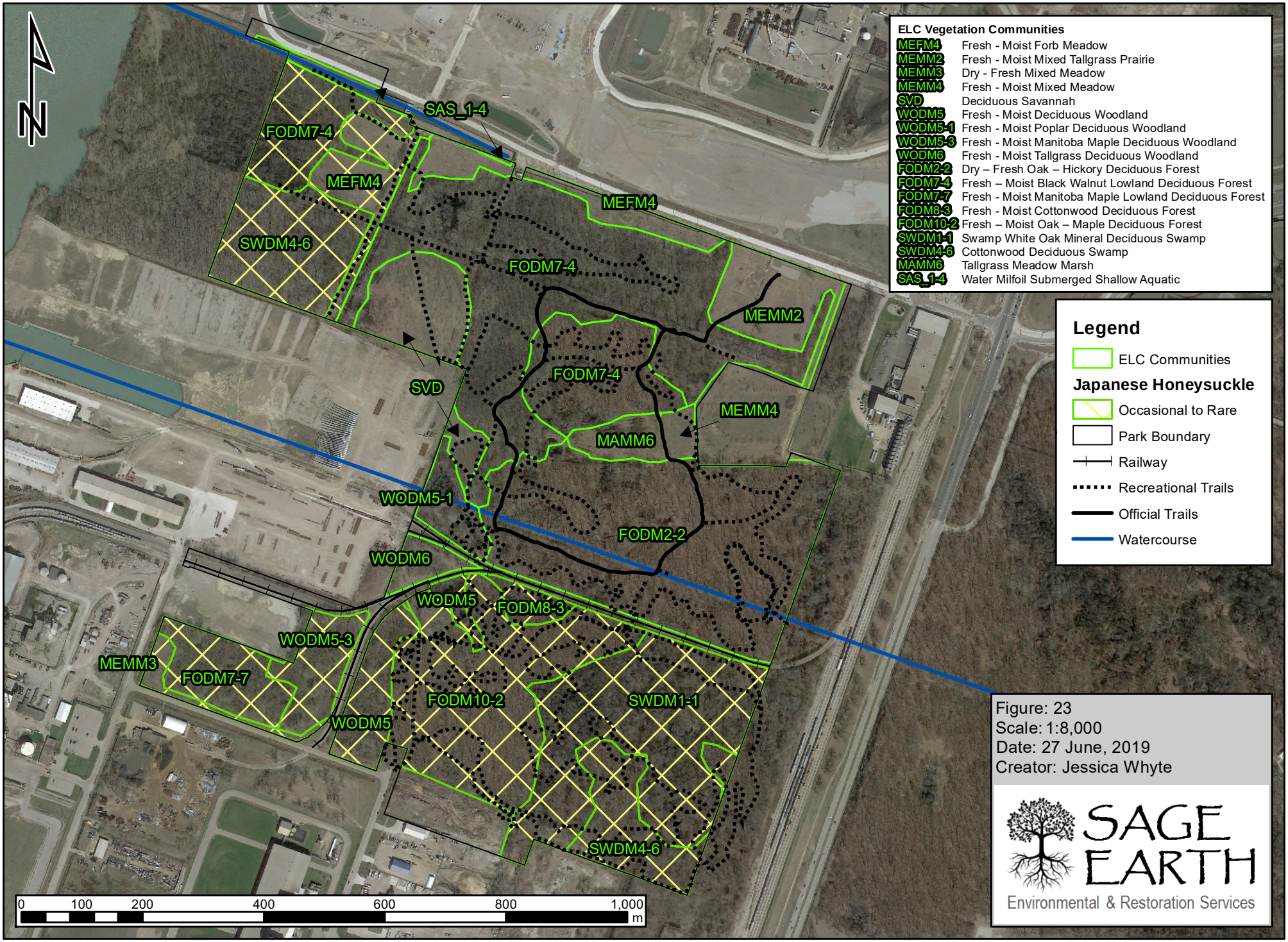


Figure 24: Ecosystem Stressors - Siberian Elm

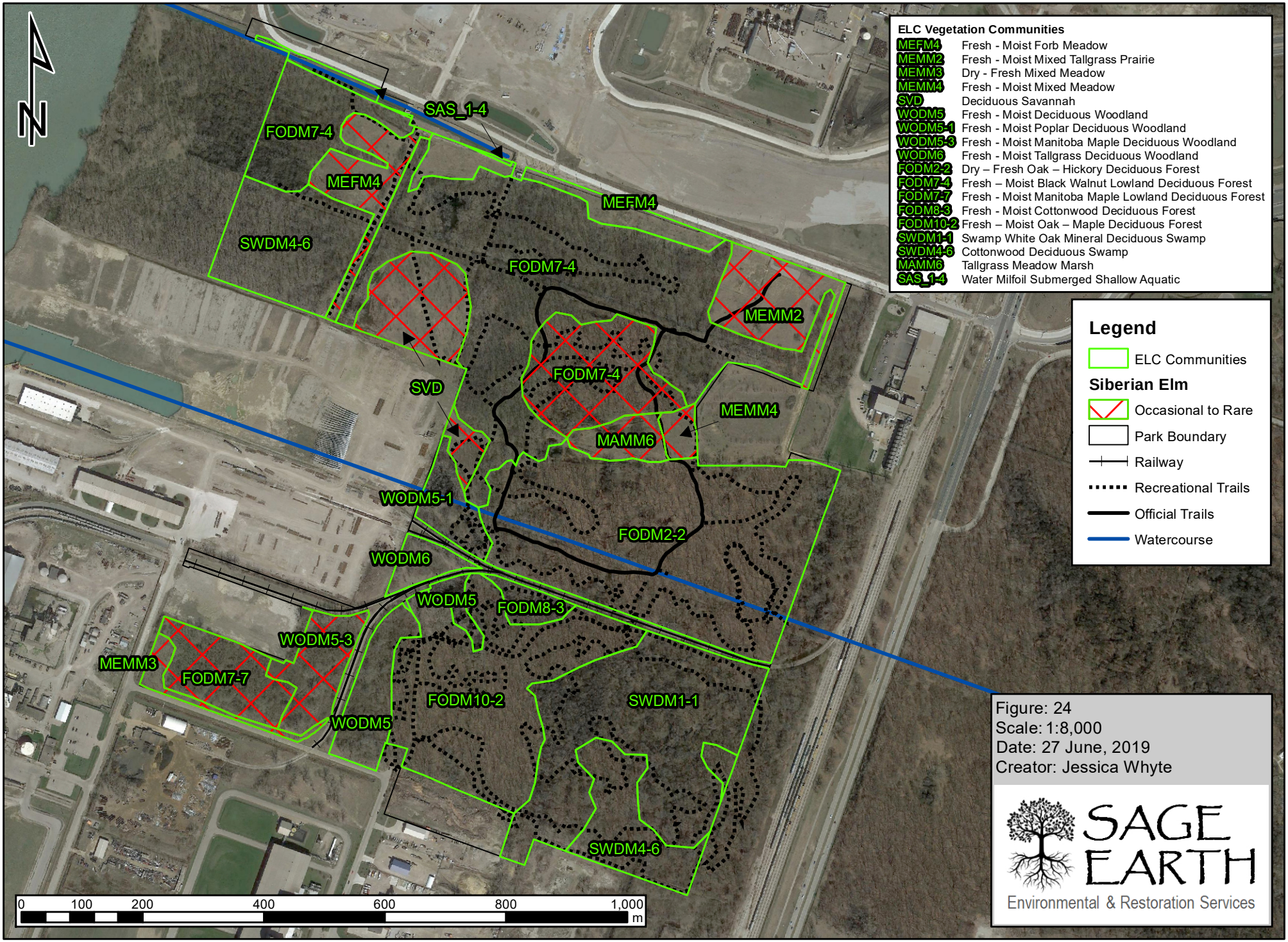
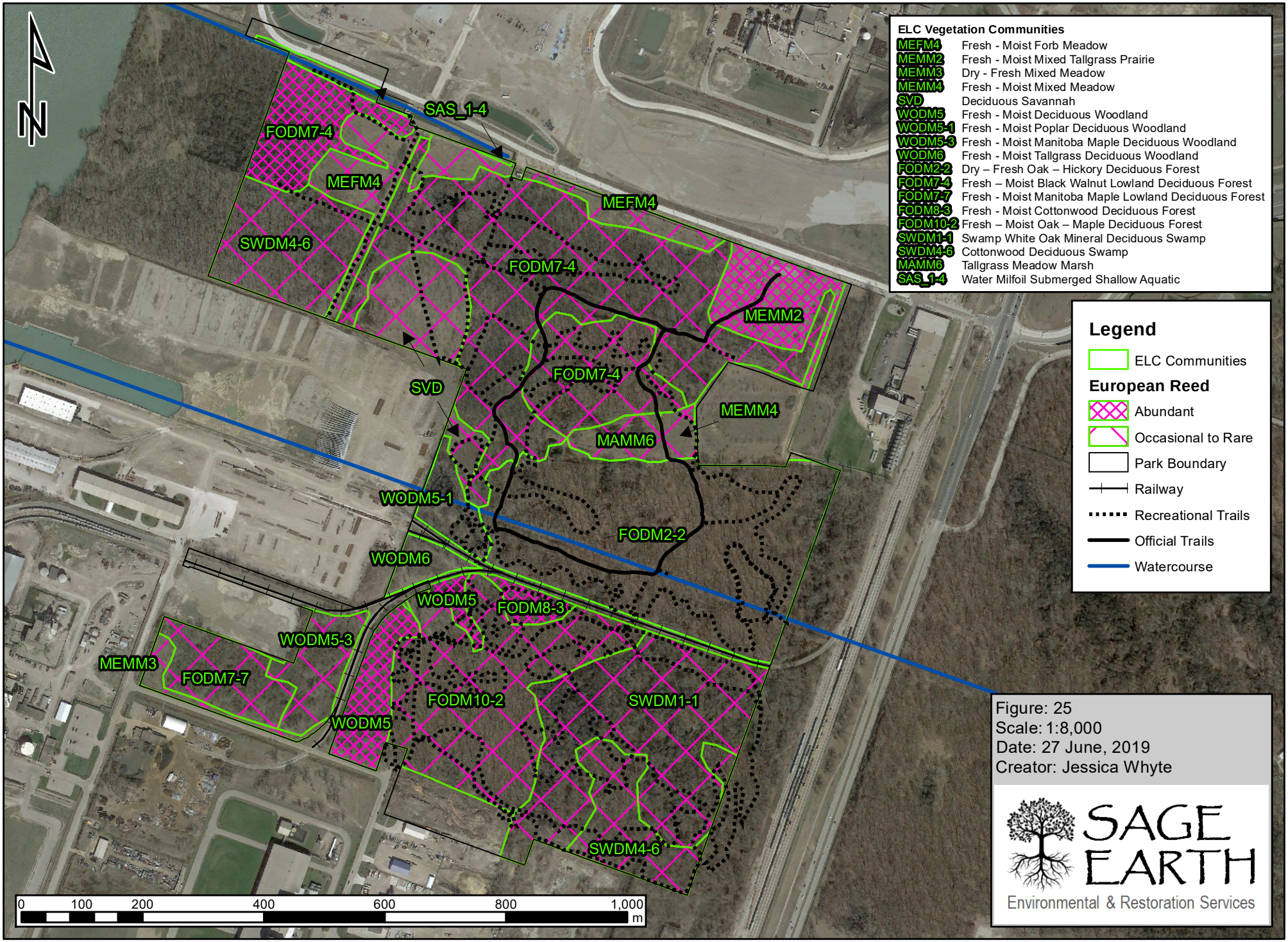


Figure 25: Ecosystem Stressors - European Reed



APPENDIX B: TABLES

TABLE 1: HISTORICAL SPECIES AT RISK AND PROVINCIALLY SIGNIFICANT PLANT SPECIES

Scientific Name	Common Name	S-Rank[1]	COSEWIC STATUS[2]	SARO STATUS[3]	Last Year of Record	Reference Biologist
Agalinis purpurea	Large-purple False Foxglove	S1			UNK	Paul Pratt
Aletris farinosa	Colicroot	S2	THR	THR	1977	Wayne Wannick and Joe Johnson
Allium cernuum	Nodding Wild Onion	S2			1977	Wayne Wannick and Joe Johnson
Arisaema dracontium	Green Dragon	S3	SC	SC	1977	Wayne Wannick and Joe Johnson
Aster dumosus var. strictior	Bushy Aster	S2			1977	Wayne Wannick and Joe Johnson
Aureolaria flava	Yellow False-foxglove	S2?			1987	Wasyl Bakowsky
Baptisia tinctoria	Yellow Wild-indigo	S2			1987	Wasyl Bakowsky
Blephilia ciliata	Downy Woodmint	S1			1977	Wayne Wannick and Joe Johnson
Carex amphibola	Narrowleaf Sedge	S2			1977	Wayne Wannick and Joe Johnson
Carex conoidea	Field Sedge	S3			1983	Mike Oldham
Carex davisii	Davis' Sedge	S2			1977	Wayne Wannick and Joe Johnson
Carex lupuliformis	False Hop Sedge	S1	END	END	1977	Wayne Wannick and Joe Johnson
Carex muskingumensis	Muskingum Sedge	S3			1977	Wayne Wannick and Joe Johnson
Carex retroflexa	Reflexed Sedge	S2			1977	Wayne Wannick and Joe Johnson
Carex squarrosa	Squarrose Sedge	S2			1977	Wayne Wannick and Joe Johnson
Carex tetanica	Rigid Sedge	S3			1986	Paul Pratt
Carya laciniosa	Big Shellbark Hickory	S3			2008	Dan Barcza
Castanea dentata	American Chestnut	S2	END	END	2008	Paul Pratt
Desmodium canescens	Hoary Tick-trefoil	S2			1977	Wayne Wannick and Joe Johnson
Echinochloa walteri	Walter's Barnyard Grass	S3			1977	Wayne Wannick and Joe Johnson
Hibiscus moscheutos ssp. moscheutos	Swamp Rosemallow	S3	SC	SC	1977	Wayne Wannick and Joe Johnson
Hydrophyllum appendiculatum	Water Leaf	S2			1977	Wayne Wannick and Joe Johnson
Hypoxis hirsuta	Eastern Yellow Star Grass	S3			1987	Wasyl Bakowsky
Juncus biflorus	Two-flowered Rush	S1			1977	Wayne Wannick and Joe Johnson
Juncus greenei	Greene's Rush	S3			1977	Wayne Wannick and Joe Johnson

TABLE 1: HISTORICAL SPECIES AT RISK AND PROVINCIALLY SIGNIFICANT PLANT SPECIES

Scientific Name	Common Name	S-Rank[1]	COSEWIC STATUS[2]	SARO STATUS[3]	Last Year of Record	Reference Biologist
Krigia biflora var. biflora	Two-flowered Cynthia	S2			1987	Wasyl Bakowsky
Lechea pulchella var. pulchella	Leggett's Pinweed	S1			1977	Wayne Wannick and Joe Johnson
Lespedeza virginica	Slender Bushclover	S1	END	END	2006	Dan Barcza
Leucospora multifida	Conobea	S2			1977	Unknown
Lithospermum canescens	Hoary Puccoon	S3			1987	Wasyl Bakowsky
Ludwigia polycarpa	Many-fruit False-loosestrife	S2S3			1977	Wayne Wannick and Joe Johnson
Lupinus perennis ssp. perennis	Wild Lupine	S3			UNK	Paul Pratt
Oxypolis rigidior	Stiff Cowbane	S2			1982	Mike Oldham
Panax quinquefolius	American Ginseng	S3	END	END	1977	Wayne Wannick and Joe Johnson
Phegopteris hexagonoptera	Broad Beech Fern	S3	SC	SC	1977	Wayne Wannick and Joe Johnson
Polygala sanguinea	Field Milkwort	S3			1977	Wayne Wannick and Joe Johnson
Polygala verticillata	Whorled Milkwort	S3?			1989	Paul Pratt
Polygonum arifolium	Halberd-leaved Tear-thumb	S3			1977	Wayne Wannick and Joe Johnson
Pycnanthemum incanum var. incanum	Hoary Mountain-mint	S1	END	END	1983	Mike Oldham
Pycnanthemum verticillatum var. pillosum	Hairy Mountain-mint	S2			2014	Paul Pratt
Saururus cernuus	Lizard's Tail	S3			1977	Wayne Wannick and Joe Johnson
Scleria triglomerata	Whip Nutrush	S1			1977	Wayne Wannick and Joe Johnson
Scutellaria nervosa	Veined Skullcap	S1			1977	Wayne Wannick and Joe Johnson
Silphium terebinthinaceum var. terebinthinaceum	Prairie Dock	S1			1977	Wayne Wannick and Joe Johnson
Solidago rigida ssp. rigida	Stiff Goldenrod	S3			1977	Wayne Wannick and Joe Johnson
Tradescantia ohiensis	Ohio Spiderwort	S2			1987	Wasyl Bakowsky
Valerianella umbilicata	Navel-shape Corn-salad	S1			1977	Wayne Wannick and Joe Johnson

[1] S-Rank (Provincial): S1 (Critically Imperiled), S2 (Imperiled), S3 (Vulnerable), S4 (Apparently Secure), S5 (Secure), S#B (breeding), SNA (species not suitable target for conservation activities)

[2] Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status: END (Endangered); THR (Threatened); SC (Special Concern)

[3] Species at Risk in Ontario (SARO) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk)

TABLE 2: HISTORICAL SPECIES AT RISK AND PROVINCIALLY SIGNIFICANT FAUNA SPECIES

Scientific Name	Common Name	S-Rank[1]	COSEWIC STATUS[2]	SARA (SCH. 1) STATUS[3]	SARO STATUS[3]	Last Year of Record	Reference Biologist
BIRDS							
Aquila chrysaetos	Golden Eagle	S2B	NAR		END	UNK	Ebird data provided by Paul Pratt
Ardea alba	Great Egret	S2B				2016	Ojibway Shores Natural Heritage Inventory
Aythya americana	Redhead Duck	S2B, S4N				2016	Ojibway Shores Natural Heritage Inventory
Aythya valisineria	Canvasback	S1B, S4N				2016	Ojibway Shores Natural Heritage Inventory
Buteo lagopus	Rough-legged Hawk	S1B, S4N	NAR		NAR	2011	Ojibway Park, Ebird sighting by Dan Loncke
Calcarius lapponicus	Lapland Longspur	S3B				2014	Ojibway Prairie Complex, Ebird sighting by Paul Pratt
Caprimulgus vociferus	Eastern Whip-poor-will	S4B	THR	THR	THR	2018	Ojibway Nature Center
Chaetura pelagica	Chimney Swift	S4B, S4N	THR	THR	THR	2018	Ojibway Nature Center, Kit McCann
Chlidonias niger	Black Tern	S3B	NAR		SC	1977	Ojibway Black Oak Woods Inventory
Chordeiles minor	Common Nighthawk	S4B	THR	THR	SC	2016	Ojibway Shores Natural Heritage Inventory
Clangula hyemalis	Long-tailed Duck	S3B				UNK	Ebird data provided by Paul Pratt
Coccothraustes vespertinus	Evening Grosbeak	S4B	SC			2012	Ojibway Park, Ebird sighting by Tom Preney
Colinus virginanus	Northern Bobwhite	S1	END	END	END	1977	Ojibway Park, Ebird sighting by Paul Pratt
Contopus cooperi	Olive-sided Flycatcher	S4B	THR	THR	SC	2018	Ojibway Nature Center
Contopus virens	Eastern Wood-pewee	S4B	SC	SC	SC	2016	Ojibway Shores Natural Heritage Inventory
Dendroica cerulea	Cerulean Warbler	S3B	END	END	THR	2018	Ojibway Nature Center

TABLE 2: HISTORICAL SPECIES AT RISK AND PROVINCIALLY SIGNIFICANT FAUNA SPECIES

Scientific Name	Common Name	S-Rank[1]	COSEWIC STATUS[2]	SARA (SCH. 1) STATUS[3]	SARO STATUS[3]	Last Year of Record	Reference Biologist
Dendroica discolor	Prairie Warbler	S3B	NAR		NAR	2018	Ojibway Nature Center
Dendroica palmarum	Palm Warbler	S1B				2016	Ojibway Shores Natural Heritage Inventory
Dolichonyx oryzivorous	Bobolink	S4B	THR	THR	THR	2016	Ojibway Shores Natural Heritage Inventory
Ectopistes migratorius	Passenger Pigeon	SX	EXT		EXT	UNK	Ebird data provided by Paul Pratt
Euphagus carolinus	Rusty Blackbird	S4B	SC	SC	NAR	2016	Ojibway Shores Natural Heritage Inventory
Falco peregrinus	Peregrine Falcon	S3B	NAR	SC	SC	2016	Ojibway Shores Natural Heritage Inventory
Haliaeetus leucocephalus	Bald Eagle	S2N, S4B	NAR		SC	2016	Ojibway Shores Natural Heritage Inventory
Hirundo rustica	Barn Swallow	S4B	THR	THR	THR	1977	Ojibway Black Oak Woods Inventory
Hydroprogne caspia	Caspian Tern	S3B	NAR		NAR	2000	Ojibway Shores, Ebird sighting by Dave Martin
Hylocichla mustelina	Wood Thrush	S4B	THR	THR	SC	2016	Ojibway Shores Natural Heritage Inventory
Icteria virens	Yellow-breasted Chat	S1B	END	END	END	2011	Ojibway Prairie Provincial Nature Reserve, sighting by Paul Pratt and Dan Barcza
Ixobrychus exilis	Least Bittern	S4B	THR	THR	THR	1977	Ojibway Black Oak Woods Inventory
Melanerpes erythrocephalus	Red-headed Woodpecker	S4B	THR	THR	SC	2016	Ojibway Shores Natural Heritage Inventory
Numenius phaeopus	Whimbrel	S3B, S4N				UNK	Ebird data provided by Paul Pratt
Nycticorax nycticorax	Black-crowned Night Heron	S3B, S3N				2017	Ojibway Oaks Park, Ebird sighting by Barry Lyons
Pluvialis dominica	American Golden-Plover	S2B, S4N				1976	Ojibway Park, Ebird sighting by Paul

TABLE 2: HISTORICAL SPECIES AT RISK AND PROVINCIALLY SIGNIFICANT FAUNA SPECIES

Scientific Name	Common Name	S-Rank[1]	COSEWIC STATUS[2]	SARA (SCH. 1) STATUS[3]	SARO STATUS[3]	Last Year of Record	Reference Biologist
							Pratt
Podiceps auritus	Horned Grebe	S1B, S4N	SC	SC	SC	2018	Ojibway Nature Center
Podiceps grisegena	Red-necked Grebe	S3B, S4N	NAR		NAR	UNK	Ebird data provided by Paul Pratt
Progne subis	Purple Marten	S3S4B				2018	Ojibway Nature Center
Protonotoria citrea	Prothonotary Warbler	S1B	END	END	END	2018	Ojibway Nature Center
Riparia riparia	Bank Swallow	S4B	THR	THR	THR	2018	Ojibway Prairie Nature Reserve, Ebird sighting by Ann Van Wagner
Seiurus motacilla	Louisiana Waterthrush	S3B	THR	SC	THR	1984	Ojibway Park, Ebird sighting by Paul Pratt
Sterna forsteri	Forster's Tern	S2B	DD		DD	2005	Ojibway Prairie Provincial Nature Reserve, Ebird sighting by Steve Ganley
Sturnella magna	Eastern Meadowlark	S4B	THR	THR	THR	2018	Ojibway Nature Center
Sturnella neglecta	Western Meadowlark	S3B				UNK	Ebird data provided by Paul Pratt
Tympanuchus cupido	Greater Prairie-Chicken	SX	EXP	EXP	EXP	UNK	Ebird data provided by Paul Pratt
Tyrannus verticallus	Western Kingbird	S1B				2018	Ojibway Nature Center
Vermivora chrysoptera	Golden-winged Warbler	S4B	THR	THR	SC	2018	Ojibway Nature Center
Vireo griseus	White-eyed Vireo	S2B				2018	Ojibway Nature Center
Wilsonia canadensis	Canada Warbler	S4B	THR	THR	SC	2016	Ojibway Shores Natural Heritage Inventory
Xanthocephalus xanthocephalus	Yellow-headed Blackbird	S2B				UNK	Ebird data provided by Paul Pratt
MAMMALS							
Taxidea taxus taxus	American Badger	S1	SC	SC	END	2016	Ojibway Shores Natural Heritage Inventory

TABLE 2: HISTORICAL SPECIES AT RISK AND PROVINCIALLY SIGNIFICANT FAUNA SPECIES

Scientific Name	Common Name	S-Rank[1]	COSEWIC STATUS[2]	SARA (SCH. 1) STATUS[3]	SARO STATUS[3]	Last Year of Record	Reference Biologist
REPTILES							
Pantherophis gloydi pop. 2	Eastern Foxsnake (Carolinian population)	S2	END	END	END	2016	Ojibway Shores Natural Heritage Inventory
Chelydra serpentina	Snapping Turtle	S4	SC		SC		Paul Pratt
CRUSTACEANS							
Cambarus robustus	A Crayfish	S3				2016	Ojibway Shores Natural Heritage Inventory
Cambarus diogenes	Meadow Crayfish	S3				2016	Ojibway Shores Natural Heritage Inventory
LEPIDOPTERA							
Achalarus lyciades	Hoary Edge	S1				2018	Ojibway Nature Centre/North American Butterfly Association
Satyrium favonius	Oak Hairstreak	S1				2018	Ojibway Nature Centre/North American Butterfly Association
Euphyes dukesi	Duke's Skipper	S2				2018	Ojibway Nature Centre/North American Butterfly Association
Danaus plexippus	Monarch	S2N, S4B	END	SC	SC	2018	Ojibway Nature Centre/North American Butterfly Association
Thorybes bathyllus	Southern Cloudywing	S3				2018	Ojibway Nature Centre/North American Butterfly Association
Euphyes conspicua	Black Dash	S3				2018	Ojibway Nature Centre/North American Butterfly Association
Asterocampa celtis	Hackberry Emperor	S3				2018	Paul Pratt, Ojibway Nature Centre

Asterocampa clyton	Tawny Emperor	S3				2018	Ojibway Nature Centre/North American Butterfly Association
ODONATA							
Gomphus vastus	Cobra Clubtail	S1				2016	Ojibway Shores Natural Heritage Inventory
Epiaeschna heros	Swamp Darner	S2S3				2013	Dragonfly and Damselfly Count at BOHP
Stylurus notatus	Elusive Clubtail	S2				2013	Dragonfly and Damselfly Count at BOHP

[1] S-Rank (Provincial): S1 (Critically Imperiled), S2 (Imperiled), S3 (Vulnerable), S4 (Apparently Secure), S5 (Secure), S#B (breeding), SNA (species not suitable target for conservation activities)
[2] Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status: END (Endangered); THR (Threatened); SC (Special Concern)
[3] Species at Risk in Ontario (SARO) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk)

TABLE 3: SURVEY FIELD DATES AND WEATHER CONDITIONS

Date	Type of Surveys Completed	Temperature (°C)	Cloud Cover (%)	Beaufort Wind Scale[1]	Precipitation Code[2]	Surveyor Names
June 15, 2018	Flora and ELC; Breeding Bird; Incidental Wildlife; and Species at Risk Surveys	15˚C - 27˚C	25 – 50%	1	0	Paul Pratt & Dan Barcza
June 16, 2018	ELC; Breeding Bird; Incidental Wildlife; and Species at Risk Surveys	21˚C - 28˚C	90%	2	2	Russ Jones & Dan Barcza
June 29, 2018	Flora and ELC; Incidental Wildlife; Breeding Bird; and Species at Risk Surveys	20˚C - 31˚C			0	Dan Barcza
June 30, 2018	Flora and ELC; Breeding Bird, Incidental Wildlife; and Species at Risk Surveys	24˚C - 33˚C			0	Dan Barcza
July 1, 2018	Flora and ELC; Incidental Wildlife; and Species at Risk Surveys	22.7˚C - 34˚C			0	Dan Barcza
July 26, 2018	Flora and ELC; Incidental Wildlife; and Species at Risk Surveys	19˚C - 28˚C	25 – 50%		2	Dan Barcza
July 27, 2018	Flora and ELC; Incidental Wildlife; and Species at Risk Surveys	13.5˚C – 27.1˚C			0	Paul Pratt & Dan Barcza
August 7, 2018	Flora and ELC; Incidental Wildlife; and Species at Risk Surveys	20.7˚C – 28.1˚C	100%	2	0	Dan Barcza
August 8, 2018	Flora and ELC; Incidental Wildlife; and Species at Risk Surveys	18.6˚C – 28˚C	80%		1	Dan Barcza
September 5, 2018	Flora and ELC; Incidental Wildlife; and Species at Risk Surveys	25˚C			0	Dan Barcza
September 6, 2018	Flora and ELC; Incidental Wildlife; and Species at Risk Surveys	24˚C – 18˚C	100%		2	Dan Barcza
September 7, 2018	Flora and ELC; Incidental Wildlife; and Species at Risk Surveys	18˚C – 22˚C			0	Paul Pratt & Dan Barcza
September 23, 2018	Flora and ELC; Incidental Wildlife; and Species at Risk Surveys	7˚C – 20˚C			0	Dan Barcza
September 23, 2018	Flora and ELC; Incidental Wildlife; and Species at Risk Surveys	12˚C – 20˚C			0	Dan Barcza
October 27, 2018	Flora and ELC; Incidental Wildlife; and Species at Risk Surveys	5˚C – 7˚C			0	Dan Barcza
October 28, 2018	Flora and ELC; Incidental Wildlife; and Species at Risk Surveys	4˚C – 8˚C			0	Dan Barcza
October 29, 2018	Flora and ELC; Incidental Wildlife; and Species at Risk Surveys	2˚C – 11˚C			0	Dan Barcza

[1]Beaufort Wind Scale: 0 (calm); 1 (light air); 2 (light breeze); 3 (gentle breeze); 4 (moderate breeze); 5 (fresh breeze); 6 (strong breeze).
[2]Precipitation Codes: 0 (clear); 1 (fog); 2 (light drizzle); 3 (light rain); 4 (moderate rain); 5 (heavy rain); 6 (thunder or lighting)

TABLE 4: ELC VEGETATION COMMUNITIES OF BLACK OAK HERITAGE PARK

ELC Code	Description	S-rank	Area (Ha)	% of Total Area
MEFM4	Fresh - Moist Forb Meadow		4.28	4.5%
MEMM2	Fresh - Moist Mixed Tallgrass Prairie	**S1**	0.51	0.5%
MEMM3	Dry - Fresh Mixed Meadow		0.68	0.7%
MEMM4	Fresh - Moist Mixed Meadow		0.47	0.5%
SVD	Deciduous Savannah		3.67	3.9%
WODM6	Fresh - Moist Tallgrass Deciduous Woodland		2.30	2.4%
WODM5	Fresh - Moist Deciduous Woodland		1.16	1.2%
WODM5-1	Fresh - Moist Poplar Deciduous Woodland		1.86	2.0%
WODM5-3	Fresh - Moist Manitoba Maple Deciduous Woodland		1.10	1.2%
FODM2-2	Dry – Fresh Oak – Hickory Deciduous Forest	**S3S4**	14.25	15.1%
FODM7-4	Fresh – Moist Black Walnut Lowland Deciduous Forest	**S2S3**	25.98	27.5%
FODM7-7	Fresh - Moist Manitoba Maple Lowland Deciduous Forest		2.30	2.4%
FODM8-3	Fresh - Moist Cottonwood Deciduous Forest		0.62	0.7%
FODM10-2	Fresh - Moist Oak Carolinian Deciduous Forest		8.52	9.0%
SWDM1-1	Swamp White Oak Mineral Deciduous Swamp		10.27	10.9%
SWDM4-6	White Birch - Cottonwood Deciduous Swamp		14.36	15.2%
MAMM6	Tallgrass Meadow Marsh		0.95	1.0%
SAS_1-4	Water Milfoil Submerged Shallow Aquatic		1.02	1.1%
	Total area		**94.29**	**100.0%**
	Significant Vegetation Communities		**50.88**	**54.0%**

TABLE 5: SUMMARY OF ECOLOGICAL LAND CLASSIFICATION

Abbreviation	Vegetation Type	Species Association	Appendix B Photo Number
TERRESTRIAL SYSTEMS			
MEFM4	FRESH - MOIST FORB MEADOW ECOSITE	**Ground Cover:** The ground cover is dominated by Orchard Grass (*Dactylis glomerata*), Kentucky Bluegrass (*Poa pratensis ssp. pratensis*), Queen Anne's Lace (*Daucus carota*), White Sweet Clover (*Melilotus alba*), Yellow Sweet Clover (*Melilotus officinalis*), Tall Goldenrod (*Solidago altissima var. altissima*), Canada Goldenrod (*Solidago canadensis*), Wild Bergamot (*Monarda fistulosa*), Tall Boneset (*Eupatorium altissimum*) and Grass-Leaved Goldenrod (*Euthamia graminifolia*).	**1**
MEMM2	FRESH - MOIST MIXED TALLGRASS PRAIRIE ECOSITE	**Canopy:** The canopy is dominated by Common Milkweed (*Asclepias syriaca*), Smooth Brome (*Bromus inermis ssp. inermis*), Poverty Oat-Grass (*Danthonia spicata*), Few-flowered Panic Grass (*Panicum oligosanthes*), Kentucky Bluegrass (*Poa pratensis ssp. pratensis*), Canada Bluegrass (*Poa compressa*), Switch Grass (*Panicum virgatum*), and Riverbank Grape (*Vitis riparia*). There is abundant Allegheny Blackberry (*Rubus allegheniensis*), Northern Dewberry (*Rubus flagellaris*), Black Raspberry (*Rubus occidentalis*), Hairy Aster (*Aster pilosus var. pilosus*), Old-field Cinquefoil (*Potentilla simplex*), European Reed *(Phragmites australis ssp. australis)*, Tall Goldenrod (*Solidago altissima var. altissima*), Little Bluestem (*Schizachyrium scoparium*), and Riverbank Grape (*Vitis riparia*).	**2**
MEMM3	DRY - FRESH MIXED MEADOW ECOSITE	**Ground Cover:** The ground cover is dominated by Smooth Brome (*Bromus inermis ssp. inermis*), Canada Thistle (*Cirsium arvense*), Bird's-Foot Trefoil (*Lotus corniculatus*), Orchard Grass (*Dactylis glomerata*), Northern Dewberry (*Rubus flagellaris*), Tall Fescue (*Festuca arundinacea*), Switch Grass (*Panicum virgatum*), Canada Goldenrod (*Solidago canadensis*), Kentucky Bluegrass (*Poa pratensis ssp. pratensis*), Canada Bluegrass (*Poa compressa*), and English Plantain (*Plantago lanceolata*).	**3**
MEMM4	FRESH - MOIST MIXED MEADOW ECOSITE	**Canopy:** The ground cover is dominated by Showy Tick-Trefoil (*Desmodium canadense*), Grass-Leaved Goldenrod (*Euthamia graminifolia*), Wild Bergamot (*Monarda fistulosa*) , Tall Goldenrod (*Solidago altissima var. altissima*), Foxglove Beardtongue (*Penstemon digitalis*), Green Bristle Grass (*Setaria viridis*), Flat-Topped White Aster (*Aster umbellatus var. umbellatus*), Bracken Fern (*Pteridium aquilinum var. latiusculum*), Hairy Aster (*Aster pilosus var. pilosus*), and Canada Thistle (*Cirsium arvense*).	**4**

TABLE 5: SUMMARY OF ECOLOGICAL LAND CLASSIFICATION

Abbreviation	Vegetation Type	Species Association	Appendix B Photo Number
SVD	Deciduous Savannah	**Canopy**: The canopy contains abundant Black Locust (***Robinia pseudo-acacia***), Pignut Hickory (***Carya glabra***), Black Walnut (***Juglans nigra***), White Oak (***Quercus alba***), Bur Oak (***Quercus macrocarpa***), and Black Oak (***Quercus velutina***). **Understory:** The understory is abundant in Grey Dogwood (***Cornus foemina ssp. racemosa***), Black Cherry (***Prunus serotina***), Eastern Cottonwood (***Populus deltoides ssp. deltoides***), and Black Locust (***Robinia pseudo-acacia***). **Ground Cover:** The ground cover is dominated by Black Walnut (***Juglans nigra***), Kentucky Bluegrass (***Poa pratensis ssp. pratensis***), Tall Goldenrod (***Solidago altissima var. altissima***), Common Milkweed (***Asclepias syriaca***), Smooth Brome (***Bromus inermis ssp. inermis***), Downy Chess (***Bromus tectorum***), Orchard Grass (***Dactylis glomerata***), Canada Moonseed (***Menispermum canadense***), Lopseed (***Phryma leptostachya***), European Reed (***Phragmites australis ssp. australis***), Canada Honewort (***Cryptotaenia canadensis***), and Black Snakeroot (***Sanicula marilandica***).	**5**
WODM5	FRESH - MOIST DECIDUOUS WOODLAND ECOSITE	**Canopy:** The canopy contains dominant White Mulberry (***Morus alba***) with abundant Manitoba Maple (***Acer negundo***), and Freeman's Maple (***Acer x Freemanii***). **Subcanopy:** The subcanopy is abundant in Manitoba Maple (***Acer negundo***) and White Mulberry (***Morus alba***). **Understory:** The understory is abundant in Amur Honeysuckle (***Lonicera maackii***), European Reed (***Phragmites australis ssp. australis***), Gray Dogwood (***Cornus foemina ssp. racemosa***), Manitoba Maple (***Acer negundo***), Northern Prickly Ash (***Zanthoxylum americanum***), Rough-Leaved Dogwood (***Cornus drummondii***), and White Mulberry (***Morus alba***). **Ground Cover:** The ground cover is dominated by Tall Hairy Agrimony (***Agrimonia gryposepala***), Green Ash (***Fraxinus pennsylvanica***), European Privet (***Ligustrum vulgare***), Amur Honeysuckle (***Lonicera maackii***), Northern Dewberry (***Rubus flagellaris***), and Canada Goldenrod (***Solidago canadensis***).	**6**
WODM5-1	FRESH - MOIST POPLAR DECIDUOUS WOODLAND	**Canopy:** The canopy contains abundant Eastern Cottonwood (***Populus deltoides ssp. deltoides***). **Understory:** The understory is abundant in Gray Dogwood (***Cornus foemina ssp. racemosa***), Green Ash (***Fraxinus***	**7**

TABLE 5: SUMMARY OF ECOLOGICAL LAND CLASSIFICATION

Abbreviation	Vegetation Type	Species Association	Appendix B Photo Number
	TYPE	*pennsylvanica*), and Amur Honeysuckle (*Lonicera maackii*). **Ground Cover:** The ground cover is dominated by Lopseed (*Phryma leptostachya*), Thicket Creeper (*Parthenocissus inserta*), and Western Poison Ivy (*Rhus radicans ssp. rydbergii*).	
WODM5-3	FRESH - MOIST MANITOBA MAPLE DECIDUOUS WOODLAND TYPE	**Canopy:** The canopy contains abundant Manitoba Maple (*Acer negundo*), Eastern Cottonwood (*Populus deltoides ssp. deltoides*), and White Mulberry (*Morus alba*). **Understory:** The understory is abundant in Rough-Leaved Dogwood (*Cornus drummondii*), and Amur Honeysuckle (*Lonicera maackii*). **Ground Cover:** The ground cover is dominated by Amur Honeysuckle (*Lonicera maackii*), White Avens (*Geum canadense*), Black Snakeroot (*Sanicula marilandica*), Virginia Knotweed (*Polygonum virginianum*), and Western Poison Ivy (*Rhus radicans ssp. rydbergii*).	**8**
WODM6	FRESH - MOIST TALLGRASS DECIDUOUS WOODLAND TYPE	**Canopy:** The canopy contains abundant Eastern Cottonwood (*Populus deltoides ssp. deltoides*). **Understory:** The understory is abundant in Gray Dogwood (*Cornus foemina ssp. racemosa*), Green Ash (*Fraxinus pennsylvanica*), and Amur Honeysuckle (*Lonicera maackii*). **Ground Cover:** The ground cover is dominated by Lopseed (*Phryma leptostachya*), Thicket Creeper (*Parthenocissus inserta*), and Switch Grass (*Panicum virgatum*). Virginia Mountain-Mint (*Pycnanthemum virginianum*), Western Poison Ivy (*Rhus radicans ssp. rydbergii*), and Canada Goldenrod (*Solidago canadensis*) are abundant.	**9**
FODM2-2	DRY – FRESH OAK – HICKORY DECIDUOUS FOREST TYPE	**Canopy:** The canopy contains abundant Black Oak (*Quercus velutina*), Black Cherry (*Prunus serotina*), and Pignut Hickory (*Carya glabra*). **Subcanopy:** The subcanopy is abundant in Black Cherry (*Prunus serotina*), and Pignut Hickory (*Carya glabra*). **Understory:** The understory is abundant in Gray Dogwood (*Cornus foemina ssp. racemosa*), Herbaceous Greenbrier (*Smilax lasioneura*), and Black Cherry (*Prunus serotina*). **Ground Cover:** The ground cover is dominated by Wild Sarsaparilla (*Aralia nudicaulis*), Hog Peanut (*Amphicarpaea bracteata*), Bracken Fern (*Pteridium aquilinum var. latiusculum*),	**10**

TABLE 5: SUMMARY OF ECOLOGICAL LAND CLASSIFICATION

Abbreviation	Vegetation Type	Species Association	Appendix B Photo Number
		Flat-topped White Aster (*Aster umbellatus var. umbellatus*), Interrupted Fern (*Osmunda claytoniana*), and Black Snakeroot (*Sanicula marilandica*).	
FODM7-4	FRESH – MOIST BLACK WALNUT LOWLAND DECIDUOUS FOREST TYPE	**Canopy:** The canopy is dominated by Black Walnut (*Juglans nigra*) with abundant Black Locust (*Robinia pseudo-acacia*), Common Hackberry (*Celtis occidentalis*), Eastern Cottonwood (*Populus deltoides ssp. deltoides*), Black Cherry (*Prunus serotina*), and Black Oak (*Quercus velutina*). **Subcanopy:** The subcanopy is abundant in American Elm (*Ulmus americana*), Black Locust (*Robinia pseudo-acacia*), Black Walnut (*Juglans nigra*), Manitoba Maple (*Acer negundo*), Riverbank Grape (*Vitis riparia*) and White Mulberry (*Morus alba*). **Understory:** The understory is abundant in Amur Honeysuckle (*Lonicera maackii*), Black Locust (*Robinia pseudo-acacia*), Black Raspberry (*Rubus occidentalis*), Common Milkweed (*Asclepias syriaca*), European Reed (*Phragmites australis ssp. australis*), Riverbank Grape (*Vitis riparia*), Rough-Leaved Dogwood (*Cornus drummondii*), and, Silky Dogwood (*Cornus amomum ssp. obliqua*). **Ground Cover:** Black Snakeroot (*Sanicula marilandica*), Black Walnut (*Juglans nigra*), Canada Goldenrod (*Solidago canadensis*), Canada Moonseed (*Menispermum canadense*), Downy Chess (*Bromus tectorum*), Enchanter's Nightshade (*Circaea lutetiana ssp. canadensis*), Flat-Topped White Aster (*Aster umbellatus var. umbellatus*), Kentucky Bluegrass (*Poa pratensis ssp. pratensis*), Lopseed (*Phryma leptostachya*), Meadow Sedge (*Carex granularis*), Missouri Ironweed (*Vernonia missurica*), Orchard Grass (*Dactylis glomerata*), Pennsylvania Sedge (*Carex pennsylvanica*), Riverbank Grape (*Vitis riparian*), Smooth Brome (*Bromus inermis ssp. inermis*), Sweet-Scent Bedstraw (*Galium triflorum*), Tall Goldenrod (*Solidago altissima var. altissima*), Thicket Creeper (*Parthenocissus inserta*), Virginia Knotweed (*Polygonum virginianum*), White Avens (*Geum canadense*), White Cutgrass (*Leersia virginica*), Wild Bergamot (*Monarda fistulosa*) and Wild Geranium (*Geranium maculatum*) are abundant.	**11**
FODM7-7	FRESH - MOIST MANITOBA MAPLE LOWLAND	**Canopy:** The canopy contains abundant Manitoba Maple (*Acer negundo*). **Understory:** The understory is abundant in Manitoba Maple (*Acer negundo*), Rough-Leaved Dogwood (*Cornus drummondii*), and	**12**

TABLE 5: SUMMARY OF ECOLOGICAL LAND CLASSIFICATION

Abbreviation	Vegetation Type	Species Association	Appendix B Photo Number
	DECIDUOUS FOREST TYPE	Amur Honeysuckle (*Lonicera maackii*). **Ground Cover:** The ground cover is dominated by Lesser Burdock (*Arctium minus ssp. minus*), Garlic Mustard (*Alliaria petiolata*), White Avens (*Geum canadense*), and Thicket Creeper (*Parthenocissus inserta*).	
FODM8-3	FRESH - MOIST COTTONWOOD DECIDUOUS FOREST TYPE	**Canopy:** The canopy contains abundant Eastern Cottonwood (*Populus deltoides ssp. deltoides*). **Subcanopy:** The subcanopy is abundant in Manitoba Maple (*Acer negundo*) and White Mulberry (*Morus alba*). **Understory:** The understory is abundant in Rough-Leaved Dogwood (*Cornus drummondii*), Gray Dogwood (*Cornus foemina ssp. racemosa*), Amur Honeysuckle (*Lonicera maackii*), Northern Prickly Ash (*Zanthoxylum americanum*), and European Reed (*Phragmites australis ssp. australis*). **Ground Cover:** The ground cover is dominated by Tall Hairy Agrimony (*Agrimonia gryposepala*), Green Ash (*Fraxinus pennsylvanica*), European Privet (*Ligustrum vulgare*), Amur Honeysuckle (*Lonicera maackii*), Northern Dewberry (*Rubus flagellaris*), and Canada Goldenrod (*Solidago canadensis*).	**13**
FODM10-2	FRESH - MOIST OAK CAROLINIAN DECIDUOUS FOREST TYPE	**Canopy:** The canopy contains abundant Black Oak (*Quercus velutina*) and Bur Oak (*Quercus macrocarpa*). **Subcanopy:** The subcanopy is abundant in Pignut Hickory (*Carya glabra*), American Witch-Hazel (*Hamamelis virginiana*), White Mulberry (*Morus alba*), and Black Cherry (*Prunus serotina*). **Understory:** The understory is abundant in Gray Dogwood (*Cornus foemina ssp. racemosa*), Amur Honeysuckle (*Lonicera maackii*), White Mulberry (*Morus alba*), Black Cherry (*Prunus serotina*), and Choke Cherry (*Prunus virginiana ssp. virginiana*). **Ground Cover:** The ground cover is dominated by Enchanter's Nightshade (*Circaea lutetiana ssp. canadensis*), Flat-topped White Aster (*Aster umbellatus var. umbellatus*), Wild Geranium (*Geranium maculatum*), Thicket Creeper (*Parthenocissus inserta*), May Apple (*Podophyllum peltatum*), Northern Dewberry (*Rubus flagellaris*), and Early Meadowrue (*Thalictrum dioicum*).	**14**

TABLE 5: SUMMARY OF ECOLOGICAL LAND CLASSIFICATION

Abbreviation	Vegetation Type	Species Association	Appendix B Photo Number
WETLAND SYSTEM			
SWDM1-1	SWAMP WHITE OAK MINERAL DECIDUOUS SWAMP TYPE	**Canopy:** The canopy contains abundant Black Oak (*Quercus velutina*), Swamp White Oak (*Quercus bicolor*), Red Maple (*Acer rubrum*), Pin Oak (*Quercus palustris*), and Bitternut Hickory (*Carya cordiformis*). **Subcanopy:** The subcanopy is abundant in Sassafras (*Sassafras albidum*), White Mulberry (*Morus alba*), Manitoba Maple (*Acer negundo*), Downy Hawthorn (*Crataegus mollis*), and Black Cherry (*Prunus serotina*). **Understory:** The understory is abundant in Sassafras (*Sassafras albidum*), Red Maple (*Acer rubrum*), Black Cherry (*Prunus serotina*), Rough-Leaved Dogwood (*Cornus drummondii*), Silky Dogwood (*Cornus amomum ssp. obliqua*), Gray Dogwood (*Cornus foemina ssp. racemosa*), Allegheny Blackberry (*Rubus allegheniensis*), American Hazelnut (*Corylus americana*), Green Ash (*Fraxinus pennsylvanica*), and Amur Honeysuckle (*Lonicera maackii*). **Ground Cover:** The ground cover is dominated by Thicket Creeper (*Parthenocissus inserta*), Sensitive Fern (*Onoclea sensibilis*), Western Poison Ivy (*Rhus radicans ssp. rydbergii*), Lady Fern (*Athyrium filix-femina var. angustum*), Royal Fern (*Osmunda regalis var. spectabilis*), Wild Geranium (*Geranium maculatum*), Jack-in-the-Pulpit (*Arisaema triphyllum ssp. triphyllum*), and Early Meadowrue (*Thalictrum dioicum*).	**15**
SWDM4-6	COTTONWOOD DECIDUOUS SWAMP TYPE	**Canopy:** The canopy is dominated by Black Walnut (*Juglans nigra*) and Eastern Cottonwood (*Populus deltoides ssp. deltoides*). There are abundant Bitternut Hickory (*Carya cordiformis*). **Subcanopy:** The subcanopy is abundant in Black Walnut (*Juglans nigra*), White Mulberry (*Morus alba*), Manitoba Maple (*Acer negundo*), Downy Hawthorn (*Crataegus mollis*), and Black Cherry (*Prunus serotina*). **Understory:** The understory is abundant in American Plum (*Prunus americana*), Amur Honeysuckle (*Lonicera maackii*). Black Cherry (*Prunus serotina*), Black Walnut (*Juglans nigra*), Green Ash (*Fraxinus pennsylvanica*), Manitoba Maple (*Acer negundo*), Rough-Leaved Dogwood (*Cornus drummondii*), and Silky Dogwood (*Cornus amomum ssp. obliqua*). **Ground Cover:** The ground cover is dominated by Black	**16**

TABLE 5: SUMMARY OF ECOLOGICAL LAND CLASSIFICATION

Abbreviation	Vegetation Type	Species Association	Appendix B Photo Number
		Snakeroot (*Sanicula marilandica*), Blue-Joint Reedgrass (*Calamagrostis canadensis*), Devil' s Beggar's Ticks (*Bidens frondosa*), Enchanter's Nightshade (*Circaea lutetiana ssp. canadensis*), Flat-Topped White Aster (*Aster umbellatus var. umbellatus*), Foul Manna Grass (*Glyceria striata*), Northern Dewberry (*Rubus flagellaris*), Pennsylvania Sedge (*Carex pennsylvanica*), Riverbank Grape (*Vitis riparian*), Tall Hairy Agrimony (*Agrimonia gryposepala*), Thicket Creeper (*Parthenocissus inserta*), Western Poison Ivy (*Rhus radicans ssp. rydbergii*), White Avens (*Geum canadense*), and White Cutgrass (*Leersia virginica*).	
MAMM6	TALLGRASS MEADOW MARSH ECOSITE	**Ground Cover:** The ground cover is dominated by Rough Goldenrod (*Solidago rugosa ssp. rugosa*), Canada Goldenrod (*Solidago canadensis*), Grass-Leaved Goldenrod (*Euthamia graminifolia*), Field Horsetail (*Equisetum arvense*), Rough Bedstraw (*Galium asprellum*), Purple Joe-Pye-Weed (*Eupatorium purpureum var. purpureum*), Slender Rush (*Juncus tenuis*), European Reed (*Phragmites australis ssp. australis*), Great Blue Lobelia (*Lobelia siphilitica*), Virginia Mountain-Mint (Pycnanthemum virginianum), and Flat-Topped White Aster (*Aster umbellatus var. umbellatus*).	**17**
SAS1-4	Milfoil submerged aquatic	**Canopy:** Dominated by Broad Waterweed (*Elodea canadensis*) and Eurasian Water-Milfoil (*Myriophyllum spicatum*), with abundant Richardson's Pondweed (*Potamogeton richardsonii*) and Eel Grass (*Vallisneria americana*).	**18**

TABLE 6: FLORISTIC ANALYSIS

	Native	Introduced	Total Species
Number	306	127	434
Percent	70.51	29.26	100

TABLE 7: LIST OF PLANT SPECIES RECORDED

Scientific Name	Common Name	S Rank[1]	Type[2]
Abutilon theophrasti	Velvet-leaf	SE5	FO
Acalypha virginica var. rhomboidea	Three-seeded Mercury	S5	FO
Acer negundo	Manitoba Maple	S5	TR
Acer platanoides	Norway Maple	SE5	TR
Acer rubrum	Red Maple	S5	TR
Acer x freemanii	Freeman's Maple	SNA	TR
Achillea borealis	Woolly Yarrow	S5	FO
Achillea millefolium ssp. millefolium	Common Yarrow	SE	FO
Agalinis tenuifolia var. tenuifolia	Slender-leaved Agalinis	S4S5	FO
Agrimonia gryposepala	Tall Hairy Agrimony	S5	FO
Agrimonia parviflora	Small-flower Agrimony	S4	FO
Agrostis gigantea	Redtop	SE5	GR
Agrostis scabra	Rough Bentgrass	S5	GR
Ailanthus altissima	Tree-of-heaven	SE5	TR
Alisma plantago-aquatica	Broad-leaved Water-plantain	S5	FO
Alliaria petiolata	Garlic Mustard	SE5	FO
Allium canadense var. canadense	Wild Garlic	S5	FO
Ambrosia artemisiifolia	Annual Ragweed	S5	FO
Ambrosia trifida	Great Ragweed	S5	FO
Amphicarpaea bracteata	Hog-peanut	S5	VI
Andropogon gerardii	Big Bluestem	S4	GR
Andropogon virginicus	Broom-sedge	S4	GR
Anemone canadensis	Canada Anemone	S5	FO
Anemone quinquefolia var. quinquefolia	Wood Anemone	S5	FO
Anemone virginiana var. virginiana	Virginia Anemone	S5	FO
Antennaria parlinii ssp. fallax	Hairy Pussytoes	S5	FO
Anthemis arvensis	Corn Camomile	SE5	FO
Apios americana	American Groundnut	S5	VI
Apocynum androsaemifolium ssp. androsaemifolium	Spreading Dogbane	S5	FO
Apocynum cannabinum var. cannabinum	Clasping-leaf Dogbane	S5	FO
Aquilegia canadensis	Wild Columbine	S5	FO
Aralia nudicaulis	Wild Sarsaparilla	S5	FO
Arctium minus ssp. minus	Lesser Burdock	SE5	FO
Arisaema triphyllum ssp. triphyllum	Jack-in-the-pulpit	S5	FO
Artemisia vulgaris	Mugwort	SE5	FO

TABLE 7: LIST OF PLANT SPECIES RECORDED

Scientific Name	Common Name	S Rank[1]	Type[2]
Asclepias exaltata	Poke Milkweed	S4	FO
Asclepias purpurascens	Purple Milkweed	S2	FO
Asclepias sullivantii	Sullivant's Milkweed	S3	FO
Asclepias syriaca	Common Milkweed	S5	FO
Asclepias tuberosa	Butterfly Milkweed	S4	FO
Asclepias verticillata	Whorled Milkweed	S4	FO
Asparagus officinalis	Asparagus	SE5	FO
Asplenium platyneuron	Ebony Spleenwort	S4	FE
Aster ericoides ssp. ericoides	Heath Aster	S5	FO
Aster laevis var. laevis	Smooth Blue Aster	S5	FO
Aster lanceolatus ssp. lanceolatus	Panicled Aster	S5	FO
Aster lateriflorus var. lateriflorus	Calico Aster	S5	FO
Aster macrophyllus	Large-leaved Aster	S5	FO
Aster novae-angliae	New England Aster	S5	FO
Aster pilosus var. pilosus	Hairy Aster	S5	FO
Aster praealtus var. praealtus	Willow Aster	S2	FO
Aster umbellatus var. umbellatus	Flat-topped White Aster	S5	FO
Aster urophyllus	Arrow-leaved Aster	S4	FO
Athyrium filix-femina var. angustum	Lady-fern	S5	FE
Berberis vulgaris	European Barberry	SE5	SH
Berteroa incana	Hoary False-alyssum	SE5	FO
Bidens frondosa	Devil's Beggar's Ticks	S5	FO
Bidens tripartita	European Beggar's Ticks	S5	FO
Boehmeria cylindrica	False Nettle	S5	FO
Bromus inermis ssp. inermis	Smooth Brome	SE5	GR
Bromus japonicus	Japanese Brome	SE4	GR
Bromus tectorum	Downy Chess	SE5	GR
Butomus umbellatus	Flowering-rush	SE5	FO
Calamagrostis canadensis	Blue-joint Reedgrass	S5	GR
Calystegia sepium ssp. americanum	Hedge Bindweed	SU	FO
Campanula americana	Tall Bellflower	S4	FO
Campanula rapunculoides	Creeping Bellflower	SE5	FO
Campsis radicans	Trumpet Creeper	S2?	VW
Capsella bursa-pastoris	Common Shepherd's Purse	SE5	FO
Cardamine pensylvanica	Pennsylvania Bitter-cress	S5	FO
Carex albicans var. albicans	Closely-covered Sedge	S3	SE

TABLE 7: LIST OF PLANT SPECIES RECORDED

Scientific Name	Common Name	S Rank[1]	Type[2]
Carex bebbii	Bebb's Sedge	S5	SE
Carex blanda	Woodland Sedge	S5	SE
Carex buxbaumii	Buxbaum's Sedge	S5	SE
Carex cristatella	Crested Sedge	S5	SE
Carex granularis	Meadow Sedge	S5	SE
Carex normalis	Larger Straw Sedge	S4	SE
Carex pellita	Woolly Sedge	S5	SE
Carex pensylvanica	Pennsylvania Sedge	S5	SE
Carex rosea	Rosy Sedge	S5	SE
Carex tenera	Slender Sedge	S5	SE
Carex vulpinoidea	Fox Sedge	S5	SE
Carya cordiformis	Bitternut Hickory	S5	TR
Carya cordiformis X glabra	Damaree's Hickory		TR
Carya glabra	Pignut Hickory	S3	TR
Carya ovata var. ovata	Shagbark Hickory	S5	TR
Catalpa speciosa	Northern Catalpa	SE1	TR
Celastrus orbiculatus	Climbing Bittersweet	SE2	VW
Celastrus scandens	Climbing Bittersweet	S5	VW
Celtis occidentalis	Common Hackberry	S4	TR
Cenchrus longispinus	Long-spine Sandbur	S4	GR
Centaurea maculosa	Spotted Knapweed	SE5	FO
Centaurium pulchellum	Branching Centaury-plant	SE3	FO
Cerastium fontanum	Common Mouse-ear Chickweed	SE5	FO
Ceratophyllum demersum	Common Hornwort	S5	FO
Chamaesyce glyptosperma	Corrugate-seed Broomspurge	SE5	FO
Chelone glabra	Turtlehead	S5	FO
Chenopodium album var. album	White Goosefoot	SE5	FO
Chrysanthemum leucanthemum	Oxeye Daisy	SE5	FO
Cichorium intybus	Chicory	SE5	FO
Cicuta maculata	Spotted Water-hemlock	S5	FO
Circaea lutetiana ssp. canadensis	Enchanter's Nightshade	S5	FO
Cirsium arvense	Canada Thistle	SE5	FO
Cirsium discolor	Field Thistle	S3	FO
Cirsium vulgare	Bull Thistle	SE5	FO
Clematis virginiana	Virginia Virgin-bower	S5	VI
Clinopodium vulgare	Field Basil	S5	FO

TABLE 7: LIST OF PLANT SPECIES RECORDED

Scientific Name	Common Name	S Rank[1]	Type[2]
Comandra umbellata	Umbellate Bastard Toad-flax	S5	FO
Commelina communis	Asiatic Dayflower	SE3	FO
Convallaria majalis	European Lily-of-the-valley	SE5	FO
Convolvulus arvensis	Field Bindweed	SE5	VI
Conyza canadensis	Fleabane	S5	FO
Coreopsis lanceolata	Lance-leaved Coreopsis	S4?	FO
Coreopsis tripteris	Tall Coreopsis	S2	FO
Coreopsis verticillata	Whorled Tickseed	SE1	FO
Cornus amomum ssp. obliqua	Silky Dogwood	S5	SH
Cornus drummondii	Rough-leaved Dogwood	S4	SH
Cornus foemina ssp. racemosa	Gray Dogwood	S5	SH
Cornus stolonifera	Red-osier Dogwood	S5	SH
Coronilla varia	Crown-vetch	SE5	FO
Corylus americana	American Hazelnut	S5	SH
Crataegus mollis	Downy Hawthorn	S5	SH
Crataegus monogyna	English Hawthorn	SE5	SH
Crataegus punctata	Dotted Hawthorn	S5	SH
Crepis capillaris	Smooth Hawksbeard	SE1	FO
Cryptotaenia canadensis	Canada Honewort	S5	FO
Cuscuta sp.	Dodder Species		FO
Cuscuta gronovii var. gronovii	Swamp Dodder	S5	VI
Cyperus lupulinus ssp. macilentus	Slender Cyperus	S4	SE
Cyperus strigosus	Straw-colored Umbrella Sedge	S5	SE
Dactylis glomerata	Orchard Grass	SE5	GR
Danthonia spicata	Poverty Oat-grass	S5	GR
Daucus carota	Queen Anne's Lace	SE5	FO
Desmodium canadense	Showy Tick-trefoil	S4	FO
Desmodium cuspidatum var. cuspidatum	Smooth-bracted Tick-trefoil	S3	FO
Desmodium glutinosum	Pointed-leaved Tick-trefoil	S4	FO
Desmodium paniculatum var. paniculatum	Panicled Tick-trefoil	S4	FO
Dianthus armeria	Deptford-pink	SE5	FO
Digitaria ischaemum	Smooth Crabgrass	SE5	GR
Digitaria sanguinalis	Hairy Crabgrass	SE5	GR
Dioscorea quaternata	Fourleaf Wild-yam	S4	VI
Dipsacus fullonum ssp. sylvestris	Common Teasel	SE5	FO
Echinochloa crusgalli	Barnyard Grass	SE5	GR

TABLE 7: LIST OF PLANT SPECIES RECORDED

Scientific Name	Common Name	S Rank[1]	Type[2]
Echium vulgare	Common Viper's-bugloss	SE5	FO
Elaeagnus angustifolia	Russian Olive	SE3	SH
Elaeagnus umbellata	Autumn Olive	SE3	SH
Eleocharis smallii	Creeping Spikerush	S5	SE
Eleusine indica	India Goosegrass	SE3	GR
Elodea canadensis	Broad Waterweed	S5	FO
Elymus canadensis	Nodding Wild-rye	S4S5	GR
Elymus repens	Quack Grass	SE5	GR
Elymus virginicus var. virginicus	Virginia Wild-rye	S5	GR
Epilobium coloratum	Purple-leaf Willow-herb	S5	FO
Equisetum arvense	Field Horsetail	S5	FE
Equisetum laevigatum	Smooth Scouring-rush	S4	FE
Eragrostis pectinacea var. pectinacea	Tufted Love Grass	S5	GR
Eragrostis spectabilis	Purple Love Grass	S4	GR
Erigeron annuus	White-top Fleabane	S5	FO
Erigeron philadelphicus ssp. philadelphicus	Philadelphia Fleabane	S5	FO
Erigeron pulchellus	Robin's Plantain	S5	FO
Euonymus alata	Winged Spindle-tree	SE2	SH
Euonymus fortunei	Winter-creeper	SE1	SH
Eupatorium altissimum	Tall Boneset	S1	FO
Eupatorium maculatum ssp. maculatum	Spotted Joe-pye Weed	S5	FO
Eupatorium perfoliatum	Common Boneset	S5	FO
Eupatorium purpureum var. purpureum	Purple Joe-pye-weed	S4	FO
Eupatorium rugosum	White Snakeroot	S5	FO
Euphorbia corollata	Flowering Spurge	S4	FO
Euthamia graminifolia	Grass-leaved Goldenrod	S5	FO
Euthamia gymnospermoides	Flat-topped Goldenrod	S1	FO
Festuca arundinacea	Tall Fescue	SE5	GR
Fragaria virginiana ssp. virginiana	Virginia Strawberry	SU	FO
Fraxinus nigra	Black Ash	S5	TR
Fraxinus pennsylvanica	Green Ash	S5	TR
Galium aparine	Cleavers	S5	FO
Galium asprellum	Rough Bedstraw	S5	FO
Galium circaezans	Wild Licorice	S5	FO
Galium palustre	Marsh Bedstraw	S5	FO

TABLE 7: LIST OF PLANT SPECIES RECORDED

Scientific Name	Common Name	S Rank[1]	Type[2]
Galium trifidum ssp. trifidum	Small Bedstraw	S5	FO
Galium triflorum	Sweet-scent Bedstraw	S5	FO
Gaura biennis	Biennial Gaura	S3	FO
Geranium maculatum	Wild Geranium	S5	FO
Geum canadense	White Avens	S5	FO
Geum laciniatum	Rough Avens	S4	FO
Glechoma hederacea	Ground Ivy	SE5	FO
Gleditsia triacanthos	Honey Locust	S2	TR
Glyceria striata	Fowl Manna Grass	S5	GR
Gnaphalium obtusifolium	Fragrant Cudweed	S5	FO
Hackelia virginiana	Virginia Stickseed	S5	FO
Hamamelis virginiana	American Witch-hazel	S5	SH
Helenium autumnale	Common Sneezeweed	S5	FO
Helianthus divaricatus	Woodland Sunflower	S5	FO
Helianthus giganteus	Tall Sunflower	S5	FO
Heliopsis helianthoides	Ox-eye	S5	FO
Heracleum lanatum	Cow-parsnip	S5	FO
Hordeum jubatum ssp. jubatum	Fox-tail Barley	SE5	GR
Hypericum perforatum	St. John's-wort	SE5	FO
Hypericum punctatum	Common St. John's-wort	S5	FO
Impatiens capensis	Spotted Jewel-weed	S5	FO
Iris virginica	Virginia Blue Flag	S5	FO
Juglans nigra	Black Walnut	S4	TR
Juncus dudleyi	Dudley's Rush	S5	RU
Juncus tenuis	Slender Rush	S5	RU
Juncus torreyi	Torrey's Rush	S5	RU
Juniperus communis	Ground Juniper	S5	SH
Juniperus virginiana	Eastern Red Cedar	S5	TR
Koeleria macrantha	June Grass	S4	GR
Lactuca biennis	Tall Blue Lettuce	S5	FO
Lactuca floridana var. floridana	Woodland Lettuce	S1S2	FO
Lactuca serriola	Prickly Lettuce	SE5	FO
Leersia oryzoides	Rice Cutgrass	S5	GR
Leersia virginica	White Cutgrass	S4	GR
Lemna minor	Lesser Duckweed	S5	FO
Leonurus cardiaca ssp. cardiaca	Common Motherwort	SE5	FO

TABLE 7: LIST OF PLANT SPECIES RECORDED

Scientific Name	Common Name	S Rank[1]	Type[2]
Lepidium campestre	Field Pepper-grass	SE5	FO
Lespedeza capitata	Round-head Bushclover	S4	FO
Liatris spicata	Dense Blazing Star	S3	FO
Ligustrum vulgare	European Privet	SE5	SH
Linaria vulgaris	Butter-and-eggs	SE5	FO
Lindera benzoin	Spicebush	S5	SH
Liparis liliifolia	Purple Twayblade	S2	FO
Lobelia siphilitica	Great Blue Lobelia	S5	FO
Lobelia spicata	Pale-spiked Lobelia	S4	FO
Lonicera japonica	Japanese Honeysuckle	SE2	VW
Lonicera maackii	Amur Honeysuckle	SE2	SH
Lonicera tatarica	Tartarian Honeysuckle	SE5	SH
Lotus corniculatus	Bird's-foot Trefoil	SE5	FO
Luzula multiflora ssp. multiflora	Common Woodrush	S5	RU
Lycopus americanus	American Bugleweed	S5	FO
Lycopus uniflorus	Northern Bugleweed	S5	FO
Lycopus virginicus	Virginia Bugleweed	S3	FO
Lysimachia ciliata	Fringed Loosestrife	S5	FO
Lysimachia quadriflora	Four-flowered Loosestrife	S4	FO
Lysimachia quadrifolia	Whorled Loosestrife	S4	FO
Lythrum alatum	Winged Loosestrife	S3	FO
Lythrum salicaria	Slender-spike Loosestrife	SE5	FO
Maianthemum racemosum ssp. racemosum	False Solomon's Seal	S5	FO
Maianthemum stellatum	Starflower False Solomon's Seal	S5	FO
Malus baccata	Siberian Crabapple	SE1	SH
Malus coronaria	Sweet Crab-apple	S4	SH
Malus pumila	Common Apple	SE5	SH
Malva neglecta	Cheeses	SE5	FO
Medicago lupulina	Black Medic	SE5	FO
Medicago sativa ssp. sativa	Alfalfa	SE5	FO
Melilotus alba	White Sweet Clover	SE5	FO
Melilotus officinalis	Yellow Sweet Clover	SE5	FO
Menispermum canadense	Canada Moonseed	S4	VI
Mentha arvensis ssp. borealis	Corn Mint	S5	FO
Mentha spicata	Spearmint	SE4	FO
Mimulus ringens	Square-stem Monkey-flower	S5	FO

TABLE 7: LIST OF PLANT SPECIES RECORDED

Scientific Name	Common Name	S Rank[1]	Type[2]
Monarda fistulosa	Wild Bergamot	S5	FO
Morus alba	White Mulberry	SE5	TR
Morus alba X rubra	White X red mulberry		TR
Muhlenbergia mexicana var. mexicana	Mexican Satin Grass	S5	GR
Muhlenbergia sylvatica var. sylvatica	Woodland Satin Grass	S2	GR
Myriophyllum spicatum	Eurasian Water-milfoil	SE5	FO
Nepeta cataria	Catnip	SE5	FO
Oenothera biennis	Common Evening-primrose	S5	FO
Onoclea sensibilis	Sensitive Fern	S5	FE
Origanum vulgare	Wild Marjoram	SE5	FO
Osmorhiza claytonii	Hairy Sweet-cicely	S5	FO
Osmorhiza longistylis	Smooth Sweet-cicely	S5	FO
Osmunda claytoniana	Interrupted Fern	S5	FE
Osmunda regalis var. spectabilis	Royal Fern	S5	FE
Oxalis stricta	Upright Yellow Wood Sorrel	S5	FO
Panicum acuminatum var. acuminatum	Acuminate Panic Grass	S5	GR
Panicum capillare	Old Panic Grass	S5	GR
Panicum clandestinum	Broadleaf Panic Grass	S2	GR
Panicum columbianum var. siccanum	Panic Grass	S4	GR
Panicum dichotomiflorum	Spreading Panic Grass	SE5	GR
Panicum latifolium	Broad-leaf Panic Grass	S4	GR
Panicum oligosanthes	Few-flowered Panic Grass	S4	GR
Panicum virgatum	Switch Grass	S4	GR
Parthenocissus inserta	Thicket Creeper	S5	VW
Parthenocissus quinquefolia	Virginia Creeper	S4?	VW
Paspalum setaceum	Slender Paspalum	S2	GR
Pastinaca sativa	Wild Parsnip	SE5	FO
Penstemon digitalis	Foxglove Beardtongue	S4S5	FO
Phalaris arundinacea	Reed Canary Grass	S5	GR
Phleum pratense	Timothy	SE5	GR
Phragmites australis ssp. australis	European Reed	S5	GR
Phryma leptostachya	Lopseed	S4S5	FO
Physalis heterophylla	Clammy Ground-cherry	S4	FO
Physocarpus opulifolius	Eastern Ninebark	S5	SH
Phytolacca americana	Common Pokeweed	S4	FO
Pilea pumila	Canada Clearweed	S5	FO

TABLE 7: LIST OF PLANT SPECIES RECORDED

Scientific Name	Common Name	S Rank[1]	Type[2]
Plantago lanceolata	English Plantain	SE5	FO
Plantago major	Nipple-seed Plantain	SE5	FO
Plantago rugelii	Black-seed Plantain	S5	FO
Platanus occidentalis	Sycamore	S4	TR
Poa compressa	Canada Bluegrass	S5	GR
Poa pratensis ssp. pratensis	Kentucky Bluegrass	S5	GR
Podophyllum peltatum	May Apple	S5	FO
Polygonatum biflorum	Giant Solomon's Seal	S4	FO
Polygonatum pubescens	Downy Solomon's Seal	S5	FO
Polygonum aviculare	Prostrate Knotweed	SE5	FO
Polygonum caespitosum	Long-bristled Smartweed	SE1	FO
Polygonum lapathifolium	Dock-leaf Smartweed	S5	FO
Polygonum virginianum	Virginia Knotweed	S4	FO
Populus alba	White Poplar	SE5	TR
Populus deltoides ssp. deltoides	Eastern Cottonwood	SU	TR
Populus grandidentata	Large-tooth Aspen	S5	TR
Populus tremuloides	Quaking Aspen	S5	TR
Portulaca oleracea	Common Purslane	SE5	FO
Potamogeton richardsonii	Richardson's Pondweed	S5	FO
Potentilla anserina ssp. anserina	Silverweed	S5	FO
Potentilla norvegica ssp. monspeliensis	Norwegian Cinquefoil	S5	FO
Potentilla recta	Sulphur Cinquefoil	SE5	FO
Potentilla simplex	Old-field Cinquefoil	S5	FO
Prenanthes alba	White Rattlesnake-root	S5	FO
Prunella vulgaris ssp. lanceolata	Self-heal	S5	FO
Prunus americana	American Plum	S4	TR
Prunus serotina	Black Cherry	S5	TR
Prunus virginiana ssp. virginiana	Choke Cherry	S5	TR
Pteridium aquilinum var. latiusculum	Bracken Fern	S5	FE
Pycnanthemum verticillatum var. pillosum	Hairy Mountain-mint	S1	FO
Pycnanthemum virginianum	Virginia Mountain-mint	S4	FO
Pyrus communis	Common Pear	SE4	TR
Quercus alba	White Oak	S5	TR
Quercus bicolor	Swamp White Oak	S4	TR
Quercus macrocarpa	Bur Oak	S5	TR
Quercus palustris	Pin Oak	S4	TR

TABLE 7: LIST OF PLANT SPECIES RECORDED

Scientific Name	Common Name	S Rank[1]	Type[2]
Quercus shumardii	Shumard Oak	S3	TR
Quercus velutina	Black Oak	S4	TR
Ranunculus hispidus var. hispidus	Bristly Buttercup	S3	FO
Ranunculus sceleratus var. sceleratus	Cursed Crowfoot	S5	FO
Ratibida pinnata	Gray-headed Coneflower	S3	FO
Rhamnus cathartica	Buckthorn	SE5	SH
Rhamnus frangula	Glossy Buckthorn	SE5	SH
Rhus glabra	Smooth Sumac	S5	SH
Rhus radicans ssp. negundo	Poison Ivy	S5	VW
Rhus radicans ssp. rydbergii	Western Poison Ivy	S5	SH
Rhus typhina	Staghorn Sumac	S5	SH
Rhus x pulvinata	Hybrid Sumac	S2?	SH
Ribes americanum	Wild Black Currant	S5	SH
Robinia pseudo-acacia	Black Locust	SE5	TR
Rosa blanda	Smooth Rose	S5	SH
Rosa carolina	Carolina Rose	S4	SH
Rosa multiflora	Rambler Rose	SE4	SH
Rosa setigera	Climbing Prairie Rose	S3	SH
Rubus allegheniensis	Allegheny Blackberry	S5	SH
Rubus flagellaris	Northern Dewberry	S4	SH
Rubus idaeus ssp. melanolasius	Wild Red Raspberry	S5	SH
Rubus occidentalis	Black Raspberry	S5	SH
Rudbeckia hirta	Black-eyed Susan	S5	FO
Rudbeckia triloba	Brown-eyed Susan	SE4	FO
Rumex acetosella ssp. acetosella	Sheep Sorrel	SE5	FO
Rumex crispus	Curly Dock	SE5	FO
Rumex obtusifolius ssp. obtusifolius	Bitter Dock	SE5	FO
Salix amygdaloides	Peach-leaved Willow	S5	TR
Salix discolor	Pussy Willow	S5	SH
Salix eriocephala	Heart-leaved Willow	S5	SH
Salix exigua	Sandbar Willow	S5	SH
Salix matsudana	Corkscrew willow		TR
Salix nigra	Black Willow	S4?	TR
Salix X sepulcralis	Hybrid Willow	SE2	TR
Sambucus canadensis	Common Elderberry	S5	SH
Sanicula marilandica	Black Snakeroot	S5	FO

TABLE 7: LIST OF PLANT SPECIES RECORDED

Scientific Name	Common Name	S Rank[1]	Type[2]
Saponaria officinalis	Bouncing-bet	SE5	FO
Sassafras albidum	Sassafras	S4	TR
Schizachyrium scoparium	Little Bluestem	S4	GR
Scirpus atrovirens	Woolgrass Bulrush	S5	SE
Scirpus microcarpus	Small-fruit Bulrush	S5	SE
Scirpus pendulus	Pendulous Bulrush	S5	SE
Scutellaria lateriflora	Mad Dog Skullcap	S5	FO
Setaria faberi	Giant Foxtail	SE4	GR
Setaria pumila	Yellow Foxtail	SE5	GR
Setaria viridis	Green Bristle Grass	SE5	GR
Silene vulgaris	Maiden's Tears	SE5	FO
Sisyrinchium albidum	White Blue-eyed Grass	S1	FO
Sium suave	Hemlock Water-parsnip	S5	FO
Smilax ecirrhata	Upright Greenbrier	S3?	FO
Smilax hispida	Hispid Greenbrier	S4	VW
Smilax lasioneura	Herbaceous Greenbrier	S4	VI
Solanum carolinense	Carolina Horse-nettle	SE3	FO
Solanum dulcamara	Climbing Nightshade	SE5	VW
Solanum nigrum	Black Nightshade	SE1	FO
Solidago altissima var. altissima	Tall Goldenrod	S5	FO
Solidago canadensis	Canada Goldenrod	S5	FO
Solidago gigantea	Smooth Goldenrod	S5	FO
Solidago juncea	Early Goldenrod	S5	FO
Solidago nemoralis ssp. nemoralis	Field Goldenrod	S5	FO
Solidago riddellii	Riddell's Goldenrod	S3	FO
Solidago rugosa ssp. rugosa	Rough Goldenrod	S5	FO
Solidago sempervirens	Seaside Goldenrod	SE2	FO
Sonchus arvensis ssp. arvensis	Field Sowthistle	SE5	FO
Sonchus asper ssp. asper	Spiny-leaf Sowthistle	SE5	FO
Sorghastrum nutans	Yellow Indian-grass	S4	GR
Spartina pectinata	Fresh Water Cordgrass	S4	GR
Sporobolus asper	Longleaf Dropseed	S4	GR
Stellaria media	Common Starwort	SE5	FO
Strophostyles helvula	Wild Bean	S4	FO
Symphytum officinale ssp. officinale	Common Comfrey	SE5	FO
Taraxacum officinale	Common Dandelion	SE5	FO

TABLE 7: LIST OF PLANT SPECIES RECORDED

Scientific Name	Common Name	S Rank[1]	Type[2]
Thalictrum dasycarpum	Purple Meadowrue	S4?	FO
Thalictrum dioicum	Early Meadowrue	S5	FO
Thalictrum pubescens	Tall Meadowrue	S5	FO
Thalictrum revolutum	Wax-leaved Meadowrue	S2	FO
Thlaspi arvense	Field Penny-cress	SE5	FO
Tilia americana	American Basswood	S5	TR
Tragopogon dubius	Meadow Goat's-beard	SE5	FO
Trifolium aureum	Yellow Clover	SE5	FO
Trifolium pratense	Red Clover	SE5	FO
Trifolium repens	White Clover	SE5	FO
Triodanis perfoliata	Venus'-looking-glass	S4	FO
Tussilago farfara	Colt's Foot	SE5	FO
Typha angustifolia	Narrow-leaved Cattail	S5	FO
Typha latifolia	Broad-leaf Cattail	S5	FO
Typha x glauca	Blue Cattail	S4?	FO
Ulmus americana	American Elm	S5	TR
Ulmus pumila	Siberian Elm	SE3	TR
Ulmus rubra	Slippery Elm	S5	TR
Urtica dioica ssp. gracilis	Slender Stinging Nettle	S5	FO
Uvularia sessilifolia	Sessile-leaf Bellwort	S4	FO
Vaccinium pallidum	Early Lowbush Blueberry	S4	SH
Vallisneria americana	Eel-grass	S5	FO
Verbascum blattaria	White Moth Mullein	SE5	FO
Verbascum thapsus	Common Mullein	SE5	FO
Verbascum virgatum	Wand-like Mullein	SE1	FO
Verbena hastata	Blue Vervain	S5	FO
Verbena stricta	Hoary Vervain	S4	FO
Verbena urticifolia	White Vervain	S5	FO
Vernonia missurica	Missouri Ironweed	S3?	FO
Veronicastrum virginicum	Culver's-root	S2	FO
Viburnum lentago	Nannyberry	S5	SH
Viburnum trilobum	Highbush Cranberry	S5	SH
Vinca minor	Periwinkle	SE5	FO
Viola sororia	Woolly Blue Violet	S5	FO
Vitis aestivalis	Summer Grape	S4	VW
Vitis riparia	Riverbank Grape	S5	VW

TABLE 7: LIST OF PLANT SPECIES RECORDED

Scientific Name	Common Name	S Rank[1]	Type[2]
Xanthium strumarium	Rough Cockle-bur	S5	FO
Zanthoxylum americanum	Northern Prickly Ash	S5	SH

[1] S Rank determined by NHIC Ontario: S1 (Critically Imperiled); S2 (Imperiled); S3 (Vulnerable); S4 (Apparently Secure); S5 (Secure); S#? (Rank uncertain); and, SE# (Exotic).

[2] Type is FE=Ferns, FO=Forbs, RU=Rushes, SE=Sedges, SH=Shrubs, TR=Trees, VI=Herbaceous Vines, VW=Woody Vines Provincially Significant S1-3 or Species at Risk

TABLE 8: PROVINCIALLY SIGNIFICANT FLORA AND SPECIES AT RISK PLANTS

#	Scientific Name	Common Name	COSEWIC STATUS[1]	SARO STATUS[2]	SRANK[3]
1	*Asclepias purpurascens*	Purple Milkweed			S2
2	*Asclepias sullivantii*	Sullivant's Milkweed			S3
3	*Aster praealtus var. praealtus*	Willowleaf Aster	THR	THR	S2
4	*Campsis radicans*	Trumpet Creeper			S2?
5	*Carex albicans var. albicans*	Closely-covered Sedge			S3
6	*Carya glabra*	Pignut Hickory			S3
7	*Cirsium discolor*	Field Thistle			S3
8	*Coreopsis tripteris*	Tall Coreopsis			S2
9	*Desmodium cuspidatum var. cuspidatum*	Smooth-bracted Tick-trefoil			S3
10	*Eupatorium altissimum*	Tall Boneset			S1
11	*Euthamia gymnospermoides*	Flat-topped Goldenrod			S1
12	*Fraxinus nigra*	Black Ash	THR		S4
13	*Gaura biennis*	Biennial Gaura			S3
14	*Gleditsia triacanthos*	Honey Locust			S2
15	*Lactuca floridana var. floridana*	Woodland lettuce			S1S2
16	*Liatris spicata*	Dense Blazing Star	THR	THR	S3
17	*Liparis liliifolia*	Purple Twayblade	END	END	S2
18	*Lycopus virginicus*	Virginia Bugleweed			S3
19	*Lythrum alatum*	Winged Loosestrife			S3
20	*Muhlenbergia sylvatica var. sylvatica*	Woodland Satin Grass			S2
21	*Panicum clandestinum*	Broadleaf Panic Grass			S2
22	*Paspalum setaceum*	Slender Paspalum			S2
23	*Pycnanthemum verticillatum var. pillosum*	Hairy Mountain-mint			S1
24	*Quercus shumardii*	Shumard Oak	SC	SC	S3
25	*Ranunculus hispidus var. hispidus*	Bristly Buttercup			S3
26	*Ratibida pinnata*	Gray-headed Coneflower			S3
27	*Rhus x pulvinata*	Hybrid Sumac			S2?
28	*Rosa setigera*	Climbing Prairie Rose	SC	SC	S3
29	*Sisyrinchium albidum*	White Blue-eyed Grass			S1
30	*Smilax ecirrhata*	Upright Greenbrier			S3?
31	*Solidago riddellii*	Riddell's Goldenrod	SC	SC	S3
32	*Thalictrum revolutum*	Wax-leaved Meadowrue			S2
33	*Vernonia missurica*	Ironweed			S3?
34	*Veronicastrum virginicum*	Culver's-root			S2

[1] Committee on the Status of Endangered Wildlife in Canada (COSEWIC): END (Endangered); THR (Threatened); SC (Special Concern).
[2] Species at Risk in Ontario (SARO) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk)
[3] S-Rank (Provincial): S1 (Critically Imperiled), S2 (Imperiled), S3 (Vulnerable), S4 (Apparently Secure), S5 (Secure), S#B (breeding), SNA (species not suitable target for conservation activities)

TABLE 9: FLORISTIC DATA FOR ELC VEGETATION COMMUNITIES AT BLACK OAK HERITAGE PARK IN 2018

Data	**1.** Deciduous Savannah (SVD)	**2.** Fresh-Moist Black Walnut Lowland Deciduous Forest Type (FODM7-4)	**3.** Fresh-Moist Mixed Tallgrass Prairie Ecosite (MEMM2)	**4.** Dry – Fresh Oak – Hickory Deciduous Forest Type (FODM2-2)	**5.** Fresh – Moist Black Walnut Lowland Deciduous Forest Type (FODM7-4)	**6.** Fresh - Moist Oak Carolinian Deciduous Forest Type (FODM10-2)	**7.** Fresh - Moist Forb meadow ecosite (MEFM4)	**8a. & 8b.** Fresh – Moist Black Walnut Lowland Deciduous Forest Type (FODM7-4) adjacent to Cottonwood Deciduous Swamp Type (SWDM4-6)	**9a. & 9b.** Cottonwood Deciduous Swamp Type (SWDM4-6) and Swamp White Oak Mineral Deciduous Swamp Type (SWDM1-1)	**10a. & 10b.** Fresh - Moist Poplar Deciduous Woodland Type (WODM5-1) and Fresh-Moist Tallgrass Deciduous Woodland Type (WODM6)	**11a., 11b. & 11c.** Fresh - Moist Manitoba Maple Lowland Deciduous Forest Type (FODM7-7), Fresh-Moist Manitoba Maple Deciduous Woodland Type (WODM5-3), and Dry-Fresh Mixed Meadow Ecosite (MEMM3)	**12a., 12b. & 12c.** Fresh - Moist Deciduous Woodland Ecosite (WODM5) and Fresh-Moist Cottonwood Deciduous Forest Type (FODM8-3)	**13a. & 13b.** Fresh - Moist Mixed Meadow Ecosite (MEMM4) and Tallgrass Meadow Marsh Ecosite (MAMM6)	**14.** Water Milfoil Submerged Shallow Aquatic Type (SAS1-4)
Floristic Analysis														
Total Species	80	88	124	141	143	124	174	116	167	106	146	166	153	5
Native Species	69	50	76	123	118	98	104	96	132	84	92	126	116	4
% Native	86.3	56.8	61.3	87.2	82.5	79.0	59.8	82.8	79.0	79.3	63.0	75.9	75.8	80
Introduced Species	11	38	47	17	25	25	69	20	34	21	54	39	37	1
% Introduced	13.8	43.2	37.9	12.1	17.5	20.2	39.7	17.2	20.4	19.8	37.0	23.5	24.2	20
Coefficient of Conservatism														
SUM CC	301	178	331	559	528	450	402	373	577	363	356	530	444	19
Mean CC (Natives)	4.4	3.6	4.4	4.5	4.5	4.6	3.9	3.9	4.4	4.3	3.9	4.2	3.8	4.8
Mean CC (All Species)	3.8	2.0	2.7	4.0	3.7	3.6	2.3	3.2	3.5	3.4	2.4	3.2	3.0	3.8
FQI														
FQI (Natives)	36.2	25.2	38.0	50.4	48.6	45.5	39.4	38.1	50.2	40.1	37.1	47.2	41.2	9.5
FQI (All Species)	33.7	19.0	29.8	47.1	44.2	40.4	30.5	34.6	44.7	35.3	29.5	41.1	35.9	8.5
Mean Coefficient of Wetness														
Natives	0.9	-0.6	1.2	0.3	0.7	0.7	-0.5	0.1	0.5	0.8	0.1	-0.02	0.2	-5

All Species	1.2	0.9	1.9	0.5	1.1	1.1	0.9	0.4	1.0	1.3	1.0	0.6	0.9	-5

Floristic Quality Index Legend	
rare and extremely significant (FQI >50)	
high significance (37< FQI <49)	
moderate to high significance (25< FQI <36)	
moderate significance (13< FQI <24)	
low significance (FQI <12)	

TABLE 10: BREEDING BIRD SURVEY RESULTS

Scientific Name	Common Name	Status			Protection					
		June 15/16 2018	June 229/30 2018	Breeding Bird Evidence	S-Rank[1]	COSEWIC STATUS[2]	SARA (SCH. 1) STATUS[3]	SARO STATUS[4]	FWCA[5]	MBCA[6]
CONFIRMED BREEDERS										
Icterus galbula	Baltimore Oriole	X		X, H, S, CF	S4B					^
Pipilo erythropthalmus	Eastern Towhee	X	X	X, H, S, CF						^
Melospiza melodia	Song Sparrow	X	X	X, H, S, T, CF	S5B					^
PROBABLE BREEDERS										
Agelaius phoeniceus	Red-winged Blackbird	X	X	X, H, S, P, T	S4					
Baelophus bicolor	Tufted Titmouse	X	X	X, H, S, T	S4					^
Cardinalis cardinalis	Northern Cardinal	X	X	X, H, S, T	S5					^
Carduelis tristis	American Goldfinch	X	X	X, H, S, T	S5B					^
Colaptes auratus	Northern Flicker	X	X	X, H, S, P	S4B					^
Contopus virens	Eastern Wood-pewee	X	X	X, H, S, T	S4B	SC	SC	SC		^
Cyanocitta cristata	Blue Jay	X	X	X, H, S, T	S5				S	
Dumetella carolinensis	Grey Catbird	X	X	X, H, S, P, T	S4B					^
Melanerpes carolinus	Red-bellied Woodpecker	X	X	X, H, S, T	S4					^
Molothrus ater	Brown-headed Cowbird	X	X	X, H, S, T	S4B					
Passerina cyanea	Indigo Bunting	X	X	X, H, S, T	S4B					^
Picoides pubescens	Downy Woodpecker	X	X	X, H, S, T	S5					^
Piranga olivacea	Scarlet Tanager	X	X	X, H, S, T	S4B					^

TABLE 10: BREEDING BIRD SURVEY RESULTS

Scientific Name	Common Name	Status			Protection					
		June 15/16 2018	June 229/30 2018	Breeding Bird Evidence	S-Rank[1]	COSEWIC STATUS[2]	SARA (SCH. 1) STATUS[3]	SARO STATUS[4]	FWCA[5]	MBCA[6]
Polioptila caerulea	Blue-grey Gnatcatcher	X	X	X, H, S, T	S4B					^
Setophaga ruticilla	American Redstart	X	X	X, H, S, T	S5B					^
Sitta carolinensis	White-breasted Nuthatch	X	X	X, H, S, T	S5					^
Spizella pusilla	Field Sparrow	X	X	X, H, S, T	S4B					^
Troglodytes aedon	House Wren	X	X	X, H, S, T	S5B					^
Turdus migratorius	American Robin	X	X	X, H, S, T, A	S5B					^
Vireo flavirons	Yellow-throated Vireo	X	X	X, H, S, T	S4B					^
Vireo gilvus	Warbling Vireo	X	X	X, H, S, T	S5B					^
Vireo olivaceus	Red-eyed Vireo	X	X	X, H, S, T	S5B					^
POSSIBLE BREEDERS										
Actitas macularia	Spotted Sandpiper	X		X, H	S5B					^
Anas platyrhynchos	Mallard		X	X, H	S5					^
Branta canadensis	Canada Goose	X	X	X, H	S5					^
Bubo virginianus	Great Horned Owl			X, H	S5				S	
Buteo jamaicensis	Red-tailed Hawk	X		X, H	S5B	NAR			S	
Ceryle alcyon	Belted Kingfisher	X		X, H, S	S4B				S	
Meleagrus gallopavo	Wild Turkey		X	X, H, S	S5			NAR	G	
Charadrius vociferus	Killdeer		X	X, H	S5B, S5N					^

TABLE 10: BREEDING BIRD SURVEY RESULTS

Scientific Name	Common Name	Status			Protection					
		June 15/16 2018	June 229/30 2018	Breeding Bird Evidence	S-Rank[1]	COSEWIC STATUS[2]	SARA (SCH. 1) STATUS[3]	SARO STATUS[4]	FWCA[5]	MBCA[6]
Corvus brachyrhynchos	American Crow	X		X, H, S	S5B					
Cygnus olor	Mute Swan*		X	X, H	SNA					^
Dendroica petechia	Yellow Warbler		X	X, H, S	S5B					^
Empidonax traillii	Willow Flycatcher	X		X, H, S	S5B					^
Geothlypis trichas	Common Yellowthroat	X		X, H, S	S5B					^
Haliaeetus leucocephalus	Bald Eagle	X		X, H	S2N, S4B	NAR		SC	S	
Hylocichla mustelina	Wood Thrush		X	X, H, S	S4B	THR	THR	SC		^
Icterus spurius	Orchard Oriole		X	X, H, S	S4B					^
Larus delawarensis	Ring-billed Gull	X		X, H, S	S5B, S4N					^
Myiarchus crinitus	Great Crested Flycatcher	X	X	X. H, S	S4B					^
Pandion haliaetus	Osprey	X		X, H	S5B				S	
Passer domesticus	House Sparrow*	X		X, H, S	SNA					
Petrochelidon pyrrhonota	Cliff Swallow		X	X, H	S4B					^
Pheucticus ludovicianus	Rose-breasted Grosbeak	X		X, H, S	S4B					^
Picoides villosus	Hairy Woodpecker	X	X	X, H, S	S5					^
Poecile atricapillus	Black-capped Chickadee		X	X, S, H	S5					^
Progne subis	Purple Marten		X	X, H, S	S3S4B					^

TABLE 10: BREEDING BIRD SURVEY RESULTS

Scientific Name	Common Name	Status			Protection					
		June 15/16 2018	June 229/30 2018	Breeding Bird Evidence	S-Rank[1]	COSEWIC STATUS[2]	SARA (SCH. 1) STATUS[3]	SARO STATUS[4]	FWCA[5]	MBCA[6]
Quiscalus quiscula	Common Grackle			X, H, S	S5B					
Sialia sialis	Eastern Bluebird	X		X, H, S	S5B					^
Seiurus aurocapilla	Ovenbird	X		X, H, S	S4B					^
Stelidopteryx serripennis	Northern Rough-winged Swallow		X, H	X, H	S4B					^
Sturnus vulgaris	Eurasian Starling*		X	X, H, S	SNA					
Tachycineta bicolor	Tree Swallow		X	X, H	S4B					^
Tyrannus tyrannus	Eastern Kingbird	X		X, H, S	S4B					^
Zenaida macroura	Mourning Dove	X	X	X, H, S	S5					^
OBSERVED SPECIES										
Accipiter cooperi	Cooper's Hawk	X		X	S4	NAR			S	
Columba livia	Rock Pigeon*	X		X	SNA					
Hirundo rustica	Barn Swallow		X	X	S4B	THR	THR	THR		^

Observed:	X-Species observed in its breeding season (no evidence of breeding). Presumed migrants should not be recorded.
Possible Breeding:	H - Species observed in its breeding season in suitable nesting habitat. S - Singing male present in its breeding season in suitable nesting habitat.
Probable Breeding:	P-Pair observed in their breeding season in suitable nesting habitat T - Permanent territory presumed through registration of territorial song on at least two days, a week or so apart, at the same place.

TABLE 10: BREEDING BIRD SURVEY RESULTS

Scientific Name	Common Name	Status			Protection					
		June 15/16 2018	June 229/30 2018	Breeding Bird Evidence	S-Rank[1]	COSEWIC STATUS[2]	SARA (SCH. 1) STATUS[3]	SARO STATUS[4]	FWCA[5]	MBCA[6]
	D-Courtship or display between a male and a female or 2 males, including courtship feeding or copulation V-Visiting probable nest site A - Agitated behavior or anxiety calls of an adult. B-Brood patch on adult female or cloacal protuberance on adult male N-Nest-building or excavation of nest hole									
Confirmed Breeding:	DD-Distraction display or injury feigning NU - Used nest or egg shell found (occupied or laid within the period of study). FY - Recently fledged young or downy young, including young incapable of sustained flight. AE-Adults leaving or entering nest site in circumstances indicating occupied nest FS-Adult carrying faecal sac CF - Adult carrying food for young. NE - Nest containing eggs. NY - Nest with young seen or heard.									

[1] S-Rank (Provincial): S1 (Critically Imperiled), S2 (Imperiled), S3 (Vulnerable), S4 (Apparently Secure), S5 (Secure), S#B (breeding), SNA (species not suitable target for conservation activities)
[2] Species at Risk Act (SARA) Schedule 1 Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk)
[3] Species at Risk in Ontario (SARO) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk)
[4] Provincial *Fish and Wildlife Conservation Act* (FWCA): G (Game species); F (Furbearers); S (Specially protected species)
[5] Federal *Migratory Bird Convention Act* (MBCA)
[6] Nocturnal Bird Surveys were conducted on DATE

TABLE 11: OBSERVED WILDLIFE SPECIES

Scientific Name	Common Name	Status				
		S-Rank[1]	COSEWIC STATUS[2]	SARA (SCH. 1) STATUS[3]	SARO STATUS[4]	FWCA[5]
MAMMALS						
Blarina brevicauda	Northern Short-tailed Shrew	S5				
Canis latrans	Coyote	S5				F
Didelphis virginiana	Virginia Opossum	S4				F
Eptesicus fuscus	Big Brown Bat	S4				S
Marmota monax	Woodchuck	S5				
Mephitis mephitis	Striped Skunk	S5				F
Microtus pennsylvanicus	Meadow Vole	S5				
Mustela vison	American Mink	S4				F
Odocoileus virginianus	White-tailed Deer	S5				G
Ondatra zibethicus	Muskrat	S5				F
Peromyscus leucopus	White-footed Mouse	S5				
Peromyscus maniculatus	Deer Mouse	S5				
Procyon lotor	Raccoon	S5				F
Sciurus carolinensis	Gray Squirrel	S5				G
Sylvilagus floridanus	Eastern Cottontail	S5				G
Tamias striatus	Eastern Chipmunk	S5				S
Vulpes vulpes	Red Fox	S5				F
Zapus hudsonius	Meadow Jumping Mouse	S5				
REPTILES						
Chrysemys picta marginata	Midland Painted Turtle	S4	SC			S
Elaphe gloydi	Eastern Foxsnake (Carolinian Population) - 1 individual Observed during 2014-2016 Ojibway Shores field survey	S2	END	END	END	S

TABLE 11: OBSERVED WILDLIFE SPECIES

Scientific Name	Common Name	Status				
		S-Rank[1]	COSEWIC STATUS[2]	SARA (SCH. 1) STATUS[3]	SARO STATUS[4]	FWCA[5]
Graptemys geographica	Northern Map Turtle	S3	SC	SC	SC	S
Nerodia sipedon	Northern Watersnake	S5				S
Storeria dekayi	DeKay's Brownsnake	S5				
Storeria occipitomaculata	Red-bellied Snake	S5				
Thamnophis sirtalis	Eastern Gartersnake	S5				
AMPHIBIANS						
Anaxyrus americanus	American Toad					
Lithobates catesbeianus	American Bullfrog					G
Lithobates clamitans	Green Frog					
Lithobates pipiens	Northern Leopard Frog	NAR	NAR		NAR	
Pseudacris triseriata pop. 2	Western Chorus Frog - Carolinian Population					
LEPIDOPTERA						
Ancyloxypha numitor	Least Skipper	S5				
Celastrina neglecta	Summer Azure	S5				
Colias eurytheme	Orange Sulphur	S5				
Colias philodice	Clouded Sulphur	S5				
Danaus plexippus	Monarch	S2N, S4B	END	SC	SC	S (11)
Epargyreus clarus	Silver-spotted Skipper	S4				
Limenitis arthemis astyanax	Red-spotted Purple	S5				
Megisto cymela	Little Wood-Satyr	S5				
Papilio cresphontes	Giant Swallowtail	S4				S (11)
Papilio glaucus	Eastern Tiger Swallowtail	S5				S (11)
Papilio polyxenes	Black Swallowtail	S5				S (11)
Papilio troilus	Spicebush Swallowtail	S4				S (11)
Pieris rapae	Cabbage White	SNA				
Poanes hobomok	Hobomok Skipper	S5				
Polygonia comma	Eastern Comma	S5				

TABLE 11: OBSERVED WILDLIFE SPECIES

Scientific Name	Common Name	Status				
		S-Rank[1]	COSEWIC STATUS[2]	SARA (SCH. 1) STATUS[3]	SARO STATUS[4]	FWCA[5]
Polygonia interrogationis	Question Mark	S5				
Thymelicus lineola	European Skipper	SNA				
ODONATA						
Aeshna verticalis	Green-striped Darner	S3				
Anax junius	Common Green Darner	S5				
Enallagma carunculatum	Tule Bluet	S5				
Enallama signatum	Orange Bluet	S4				
Epiaeschna heros	Swamp Darner	S2S3				
Epitheca princeps	Prince Baskettail	S5				
Gomphus vastus	Cobra Clubtail	S1				
Ischnura hastata	Citrine Forktail	SNA				
Libellula pulchella	Twelve-spotted Skimmer	S5				
Pachydiplax longipennis	Blue Dasher	S5				
Stylurus notatus	Elusive Clubtail	S2				
Sympetrum rubicundulum	Ruby Meadowhawk	S5				
Sympetrum vicinum	Autumn Meadowhawk	S5				
Tramea carolina	Carolina Saddlebags	SNA				
Tramea lacerata	Black Saddlebags	S4				

[1] S-Rank (Provincial): S1 (Critically Imperiled), S2 (Imperiled), S3 (Vulnerable), S4 (Apparently Secure), S5 (Secure), S#B (breeding), SNA (species not suitable target for conservation activities)

[2] Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status: END (Endangered); THR (Threatened); SC (Special Concern)

[3] Species at Risk Act (SARA) Schedule 1 Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk)

[4] Species at Risk in Ontario (SARO) Status: END (Endangered); THR (Threatened); SC (Special Concern); NAR (Not at Risk)

[5] *Fish and Wildlife Conservation Act* (FWCA): G (Game species); F (Furbearers); S (Specially protected species)

TABLE 12: PROVINCIALLY SIGNIFICANT FAUNA AND SPECIES AT RISK WILDLIFE

Scientific Name	Common Name	Status					
		COSEWIC[1]	SARA[2]	SARO STATUS[3]	FWCA[4]	MBCA[5]	S-Rank[6]
BIRDS							
Contopus virens	Eastern Wood-pewee	SC	SC	SC		^	S4B
Haliaeetus leucocephalus	Bald Eagle	NAR		SC	S		S2N, S4B
Hirundo rustica	Barn Swallow	THR	THR	THR		^	S4B
Hylocichla mustelina	Wood Thrush	THR	THR	SC		^	S4B
Progne subis	Purple Marten					^	S3S4B
REPTILES							
Chrysemys picta marginata	Midland Painted Turtle	SC					S4
Elaphe gloydi	Eastern Foxsnake (Carolinian Population) - 1 individual Observed during 2014-2016 Ojibway Shores field survey < 250 m away.	END	END	END	S		S2
Graptemys geographica	Northern Map Turtle	SC	SC	SC			S3
INSECTS							
Danaus plexippus	Monarch	END	SC	SC			S2N, S4B
Aeshna verticalis	Green-striped Darner						S3
Epiaeschna heros	Swamp Darner						S2S3
Gomphus vastus	Cobra Clubtail						S1
Stylurus notatus	Elusive Clubtail						S2

TABLE 13: LIST OF INVASIVE PLANT SPECIES OF NOTABLE CONCERN

Scientific Name	Common Name
HIGH PRIORITY FOR CONTROL	
Ailanthus altissima	Tree-of-heaven
Alliaria petiolata	Garlic Mustard
Elaeagnus umbellata	Autumn Olive
Juglans nigra	Black Walnut
Lonicera japonica	Japanese Honeysuckle
Lonicera maackii	Amur Honeysuckle
Morus alba	White Mulberry
Phragmites australis	European Reed
Robinia pseudo-acacia	Black Locust
Ulmus pumila	Siberian Elm
MODERATE PRIORITY FOR CONTROL	
Celastrus orbiculatus	Climbing Bittersweet
Cirsium arvense	Canada Thistle
Lonicera tatarica	Tartarian Honeysuckle
Melilotus alba	White Sweet Clover
Melilotus officinalis	Yellow Sweet Clover
Populus alba	White Poplar
Rhamnus cathartica	Buckthorn
Rhamnus frangula	Glossy Buckthorn
Rosa multiflora	Rambler Rose
Vinca minor	Periwinkle

APPENDIX C:
NAME AND QUALIFICATIONS OF RETAINED CONSULTANTS

President, Terrestrial and Restoration Ecologist– Dan Barcza, Hon. B.Sc.

Mr Barcza has over 20 years of experience as a Terrestrial Ecologist, Botanist, Restoration Ecologist, Dendrologist, Horticulturalist, Wildlife Biologist and Species-at-Risk Biologist. He has managed numerous small-scale projects including Environmental Assessments, Environmental Impact Studies and Natural Heritage Evaluations. Mr. Barcza has been a key contributor in numerous large-scale projects including Environmental Assessments, Environmental Impact Studies, Natural Heritage Evaluations, Watershed Studies, Park Management Plans, Environmental Monitoring Programs, Aggregate Resource Assessments, Forest, Edge, Sediment and Erosion Management Plans, and Environmental Restoration Plans. His contributions include management, field investigations, environmental documentation preparation, secondary source review & coordinator of reports. Dan completed the Ecological Land Classification for Southern Ontario Training Course in September 2005, the Ontario Wetland Evaluation Training Course in June 2006, Butternut Health Assessor Course in 2014 and the Department of Fisheries and Oceans Freshwater Mussel Identification Course. Dan graduated as a certified RX-100 certified Forest Firefighter in April 2010 and Herbicide Technician in October 2009.

Terrestrial Ecologist and GIS Technician – Jessica Whyte, Hon. B.Sc.

Mrs. Jessica Whyte completed a 3-year diploma in Environmental Engineering at Humber College gaining skills such as land surveying, water and air quality monitoring, sampling techniques, environmental remediation, and environmental law. She followed this with an honors degree in Ecology at the University of Guelph. Jessica has experience with a variety of field studies that involved point-intercept vegetation surveys, invertebrate communities and diversity, soil cores and organic matter, water sampling and phosphorous analyses, invasive species, GIS mapping, and reporting. Also, having worked in agriculture for many years, she brings a unique perspective of the sector to environmental consulting. Jessica has completed certifications for ADET First Responder and CPR, Growers Pesticide Safety (GPSC), Environmental Compliance and Due Diligence (CANECT), and is a newly appointed Ontario Wetland Evaluator (OWES). She has strong interest in terrestrial ecosystems, conservation biology, and ArcGIS.

Wildlife Biologist – Nicole Wajmer, Hon. B.Sc., M.Sc.

Ms. Wajmer completed the Wildlife Biology undergraduate and Integrative Biology graduate program at the University of Guelph. Her Masters research focused on the relationship between personality and migration in different ecotypes of Lake Superior Brook Trout. Ms. Wajmer has a wide range of aquatic and terrestrial experiences from her time working in various sectors of biology including industry, government, and academia. She has strong interests in conservation biology and has been involved in recovery programs for the Endangered Northern Spotted Owl and Eastern Loggerhead Shrike. She has successfully completed certifications for First Aid and CPR, Ontario Benthos Biomonitoring (OBBN), Backpack 2 Electrofishing, Ontario Stream Assessment Protocol (Crew Leader), ACUC Dive Master, Level 1 Ontario Fish Identification (MNRF), and Department of Fisheries and Oceans Freshwater Mussel Identification Course.

Environmental Technician and Planning Ecologist –Jennifer Neill, BFA, Dip. Env. Technician

Ms. Jennifer Neill has 5.5 years of experience working within the Environmental sector. She is an honors graduate from the Environmental Technician - Sampling and Monitoring Program at Seneca College. She also holds a Bachelor of Fine Arts from the Ontario College of Art and Design (OCAD U). Jennifer is certified under the Ontario Stream Assessment Protocol (OSAP) Physical Habitat and Channel Structure Training 2014 (Version 9.0) and has completed several modules as Crew Leader. In association with the OSAP training she successfully completed Level 2 of the MNRF Ontario Fish Identification Workshop. Ms. Neill is also certified under the Ontario Benthos Biomonitoring Network (OBBN) and the MNRF Ontario Wetland Evaluation System (OWES). She demonstrates a high level of competence using the Ecological Land Classification for Southern Ontario (First Approximation and 2008 edition) (ELC) and her ability to analyze data using various statistical methods is an asset to her field skills. Her field skills are augmented with National Green Check GPS Certification (Level 1), backcountry outdoor skills training, St. Johns Ambulance Bear Aware and Canadian Red Cross Basic First Aid. Jennifer has been a valuable team member in numerous small and large-scale environmental projects throughout Ontario. She has composed entirely and contributed extensively to environmental documentation including; Environmental Assessments (EA), Development Assessment Reports (DAR), Environmental Impact Studies (EIS), Natural Heritage Evaluations (NHE) and Oak Ridges Moraine Conformity Statements. Jennifer exhibits a strong working knowledge of environmental planning and policy under various Federal and Provincial Statutes and Regulations as well as Municipal Official Plans and By-Laws. Her terrestrial contributions include plant propagation, planting and monitoring, detailed botanical inventories (native, invasive and exotic species), incidental wildlife surveys, Species at Risk individual identification and habitat evaluation, identification and monitoring of Species at Risk plant transplant locations and Species at Risk permitting applications including mitigation for Species at Risk habitat creation/restoration. Ms. Neill is also involved with the preparation and implementation of management plans for environmental restoration projects (Tallgrass ecosystems). Her aquatic contributions include macro-invertebrate benthic identification including sorting species and analysis of surface water quality, fish identification and aquatic vegetation identification. Jennifer holds a position on the Board of Directors for Tallgrass Ontario.

Sub-contracted Biologists

Sage Earth hired local Biologists to assist in the field surveys:

1. Paul Pratt former naturalist for 39 years working for Windsor Parks and Recreation helped with the field surveys for four days in the 2018 growing season.
2. Russ Jones of Essex Region Conservation Authority to help survey for one field day.

APPENDIX D:
PHOTOS OF ECOLOGICAL LAND CLASSIFICATION (ELC) VEGETATION COMMUNITIES



Photo 1: Fresh-Moist Forb Meadow (MEFM4) is located on the north Park boundary and on old farmland in the north-west side.



Photo 2: Fresh-Moist Mixed Tallgrass Prairie (MEMM2) located at the north east corner of Black Oak Heritage Park.



Photo 3: Fresh-Moist Mixed Meadow (MEMM3) located at the south west corner of Black Oak Heritage Park.



Photo 4: Fresh-Moist Mixed Meadow (MEMM4) is located near the centre of Black Oak Heritage Park adjacent to the Dainty Foods owned meadow.



Photo 5: Deciduous Savannah (SVD) is west-central in location, adjacent to the commercially used storage yard.



Photo 6: Fresh-Moist Deciduous Woodland (WODM5) is located along the south boundary adjacent to the train tracks.



Photo 7: Fresh-Moist Poplar Deciduous Forest (WODM5-1) located centrally, adjacent to the commercially used storage yard.



Photo 8: Fresh-Moist Manitoba Maple Deciduous Woodland (WODM5-3) is located near the south west corner adjacent to the train tracks.



Photo 9: Fresh-Moist Tallgrass Deciduous Woodland (WODM6) is centrally located, adjacent to the commercially used storage yard.



Photo 10: Dry-Fresh Oak-Hickory Deciduous Forest (FODM2-2) is centrally located.



Photo 11: Fresh-Moist Black Walnut Lowland Deciduous Forest (FODM7-4) occurs north-central and at the north-west corner of Black Oak Heritage Park.



Photo 12: Fresh-Moist Manitoba Maple Lowland Deciduous Forest (FODM7-7) located at the south west corner of Black Oak Heritage Park.



Photo 13: Fresh-Moist Cottonwood Deciduous Forest (FODM8-3) is centrally located adjacent to the bisecting train tracks.



Photo 14: Fresh-Moist Oak Carolinian Deciduous Forest (FODM10-2) is south-centrally located.



Photo 15: Swamp White Oak Mineral Deciduous Forest (SWDM1-1) is located near the south east corner.



Photo 16: Cottonwood Deciduous Swamp (SWDM4-6) occurs both on the north-west corner and the south-east corner.



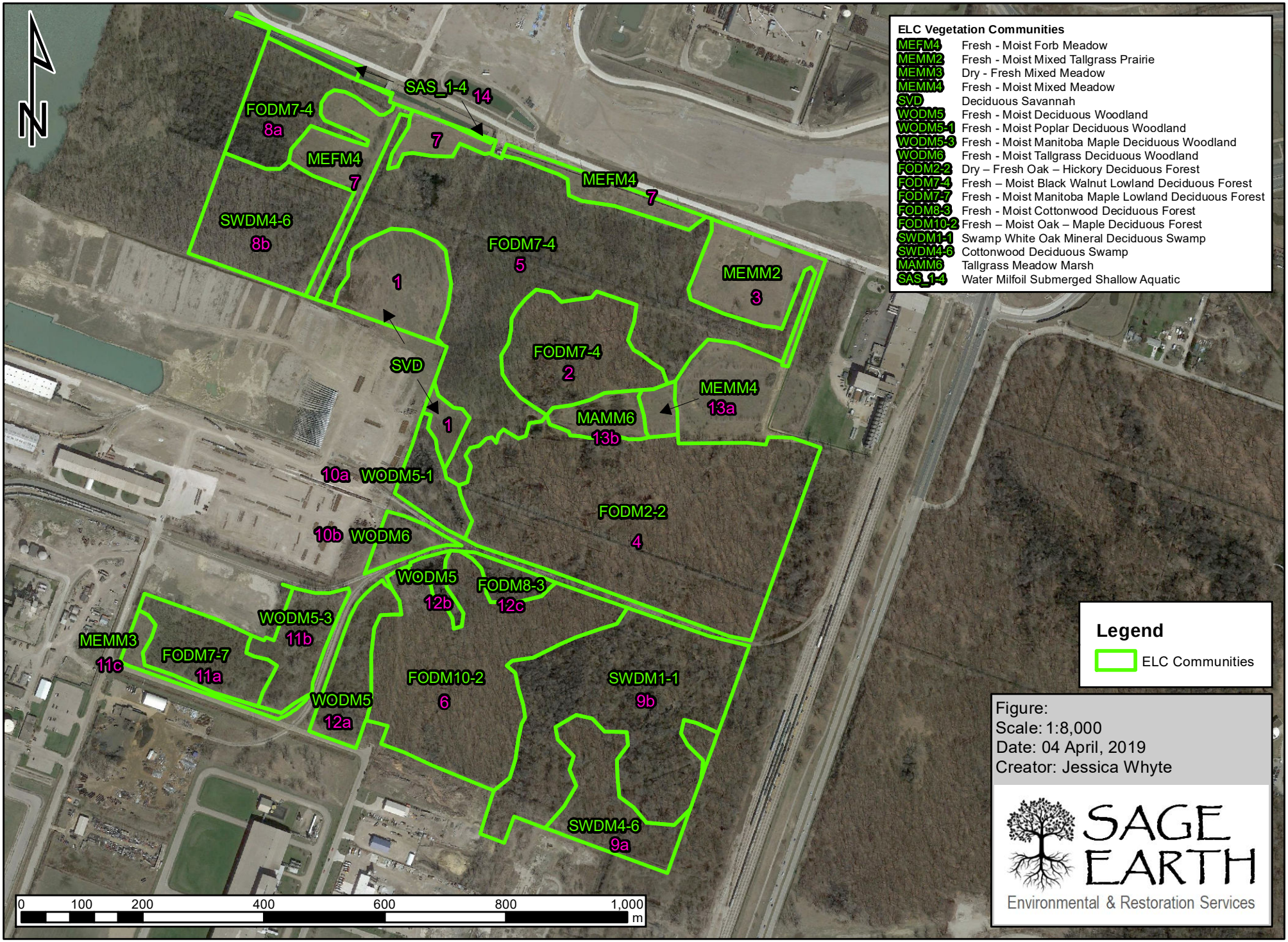
Photo 17: Tallgrass Meadow Marsh (MAMM6) is located near the centre of Black Oak Heritage Park.



Photo 18: Water Milfoil Submerged Shallow Aquatic (SAS_1-4) is located on the north-west Park boundary.

APPENDIX E: PLANT LISTS FOR EACH INDIVIDUAL ELC VEGETATION COMMUNITY POLYGON

ELC Polygon Numeric Assignments (for Reference)



Floral Inventory: SVD (ELC Community 1)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Acer negundo	Manitoba Maple			S5	TR	Y
Acer rubrum	Red Maple			S5	TR	
Alliaria petiolata	Garlic Mustard			SE5	FO	Y
Ambrosia trifida	Great Ragweed			S5	FO	
Amphicarpaea bracteata	Hog-peanut			S5	VI	
Anemone canadensis	Canada Anemone			S5	FO	
Arctium minus ssp. minus	Lesser Burdock			SE5	FO	
Arisaema triphyllum ssp. triphyllum	Jack-in-the-pulpit			S5	FO	
Aster ericoides ssp. ericoides	Heath Aster			S5	FO	
Aster lanceolatus ssp. lanceolatus	Panicled Aster			S5	FO	
Aster lateriflorus var. lateriflorus	Calico Aster			S5	FO	
Aster pilosus var. pilosus	Hairy Aster			S5	FO	
Aster umbellatus var. umbellatus	Flat-topped White Aster			S5	FO	
Carex blanda	Woodland Sedge			S5	SE	
Carex cristatella	Crested Sedge			S5	SE	
Carex rosea	Rosy Sedge			S5	SE	
Carya glabra	Pignut Hickory			S3	TR	
Celastrus orbiculatus	Climbing Bittersweet			SE2	VW	Y
Celtis occidentalis	Common Hackberry			S4	TR	
Cicuta maculata	Spotted Water-hemlock			S5	FO	
Comandra umbellata	Umbellate Bastard Toad-flax			S5	FO	
Cornus amomum ssp. obliqua	Silky Dogwood			S5	SH	
Cornus foemina ssp. racemosa	Gray Dogwood			S5	SH	
Corylus americana	American Hazelnut			S5	SH	
Crataegus mollis	Downy Hawthorn			S5	SH	
Cryptotaenia canadensis	Canada Honewort			S5	FO	
Dactylis glomerata	Orchard Grass			SE5	GR	
Desmodium glutinosum	Pointed-leaved Tick-trefoil			S4	FO	
Equisetum arvense	Field Horsetail			S5	FE	
Eragrostis pectinacea var. pectinacea	Tufted Love Grass			S5	GR	
Erigeron annuus	White-top Fleabane			S5	FO	
Euonymus alata	Winged Spindle-tree			SE2	SH	
Eupatorium rugosum	White Snakeroot			S5	FO	
Galium asprellum	Rough Bedstraw			S5	FO	
Geranium maculatum	Wild Geranium			S5	FO	
Geum canadense	White Avens			S5	FO	
Iris virginica	Virginia Blue Flag			S5	FO	
Juglans nigra	Black Walnut			S4	TR	
Lactuca biennis	Tall Blue Lettuce			S5	FO	
Lonicera maackii	Amur Honeysuckle			SE2	SH	Y
Lysimachia quadrifolia	Whorled Loosestrife			S4	FO	
Melilotus alba	White Sweet Clover			SE5	FO	Y
Menispermum canadense	Canada Moonseed			S4	VI	
Morus alba	White Mulberry			SE5	TR	Y
Osmorhiza longistylis	Smooth Sweet-cicely			S5	FO	
Oxalis stricta	Upright Yellow Wood Sorrel			S5	FO	
Parthenocissus inserta	Thicket Creeper			S5	VW	
Phragmites australis	Common Reed			S5	GR	Y
Phryma leptostachya	Lopseed			S4S5	FO	
Physalis heterophylla	Clammy Ground-cherry			S4	FO	
Platanus occidentalis	Sycamore			S4	TR	
Polygonum virginianum	Virginia Knotweed			S4	FO	
Populus deltoides ssp. deltoides	Eastern Cottonwood			SU	TR	
Prenanthes alba	White Rattlesnake-root			S5	FO	
Prunella vulgaris ssp. lanceolata	Self-heal			S5	FO	
Prunus serotina	Wild Black Cherry			S5	TR	
Pteridium aquilinum var. latiusculum	Bracken Fern			S5	FE	
Quercus alba	White Oak			S5	TR	

Floral Inventory: SVD (ELC Community 1)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Quercus bicolor	Swamp White Oak			S4	TR	
Quercus macrocarpa	Bur Oak			S5	TR	
Quercus velutina	Black Oak			S4	TR	
Rhus radicans ssp. rydbergii	Western Poison Ivy			S5	SH	
Robinia pseudo-acacia	Black Locust			SE5	TR	Y
Rosa carolina	Carolina Rose			S4	SH	
Rubus allegheniensis	Allegheny Blackberry			S5	SH	
Rubus occidentalis	Black Raspberry			S5	SH	
Sanicula marilandica	Black Snakeroot			S5	FO	
Smilax hispida	Hispid Greenbrier			S4	VW	
Smilax lasioneura	Herbaceous Greenbrier			S4	VI	
Solidago altissima var. altissima	Tall Goldenrod			S5	FO	
Spartina pectinata	Fresh Water Cordgrass			S4	GR	
Tilia americana	American Basswood			S5	TR	
Ulmus americana	American Elm			S5	TR	
Ulmus pumila	Siberian Elm			SE3	TR	Y
Uvularia sessilifolia	Sessile-leaf Bellwort			S4	FO	
Verbena stricta	Hoary Vervain			S4	FO	
Vernonia missurica	Ironweed			S3?	FO	
Veronicastrum virginicum	Culver's-root			S2	FO	
Vitis riparia	Riverbank Grape			S5	VW	
Zanthoxylum americanum	Northern Prickly Ash			S5	SH	

Floral Inventory: FODM7-4 (ELC Community 2)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Achillea millefolium ssp. millefolium	Common Yarrow			SE	FO	
Alisma plantago-aquatica	Broad-leaved Water-plantain			S5	FO	
Anthemis arvensis	Corn Camomile			SE5	FO	
Apocynum cannabinum var. cannabinum	Clasping-leaf Dogbane			S5	FO	
Asclepias syriaca	Common Milkweed			S5	FO	
Aster lanceolatus ssp. lanceolatus	Panicled Aster			S5	FO	
Aster novae-angliae	New England Aster			S5	FO	
Aster pilosus var. pilosus	Hairy Aster			S5	FO	
Berteroa incana	Hoary False-alyssum			SE5	FO	
Bromus inermis ssp. inermis	Smooth Brome			SE5	GR	
Bromus tectorum	Downy Chess			SE5	GR	
Carex albicans var. albicans	Closely-covered Sedge			S3	SE	
Carex cristatella	Crested Sedge			S5	SE	
Carex granularis	Meadow Sedge			S5	SE	
Carex normalis	Larger Straw Sedge			S4	SE	
Carex pellita	Woolly Sedge			S5	SE	
Carex vulpinoidea	Fox Sedge			S5	SE	
Centaurea maculosa	Spotted Knapweed			SE5	FO	
Chrysanthemum leucanthemum	Oxeye Daisy			SE5	FO	
Cichorium intybus	Chicory			SE5	FO	
Cornus drummondii	Rough-leaved Dogwood			S4	SH	
Dactylis glomerata	Orchard Grass			SE5	GR	
Daucus carota	Queen Anne's Lace			SE5	FO	
Desmodium canadense	Showy Tick-trefoil			S4	FO	
Dianthus armeria	Deptford-pink			SE5	FO	
Dipsacus fullonum ssp. sylvestris	Common Teasel			SE5	FO	
Echium vulgare	Common Viper's-bugloss			SE5	FO	
Elaeagnus angustifolia	Russian Olive			SE3	SH	
Eleocharis smallii	Creeping Spikerush			S5	SE	
Erigeron annuus	White-top Fleabane			S5	FO	
Eupatorium altissimum	Tall Boneset			S1	FO	
Eupatorium perfoliatum	Common Boneset			S5	FO	
Festuca arundinacea	Kentucky Fescue			SE5	GR	
Galium aparine	Cleavers			S5	FO	
Geum canadense	White Avens			S5	FO	
Hordeum jubatum ssp. jubatum	Fox-tail Barley			SE5	GR	
Juglans nigra	Black Walnut			S4	TR	
Juncus dudleyi	Dudley's Rush			S5	RU	
Lonicera maackii	Amur Honeysuckle			SE2	SH	Y
Lotus corniculatus	Bird's-foot Trefoil			SE5	FO	Y
Lycopus americanus	American Bugleweed			S5	FO	
Lythrum alatum	Winged Loosestrife			S3	FO	
Lythrum salicaria	Slender-spike Loosestrife			SE5	FO	Y
Medicago sativa ssp. sativa	Alfalfa			SE5	FO	
Melilotus alba	White Sweet Clover			SE5	FO	Y
Melilotus officinalis	Yellow Sweet Clover			SE5	FO	Y
Monarda fistulosa	Wild Bergamot			S5	FO	
Morus alba	White Mulberry			SE5	TR	Y
Oenothera biennis	Common Evening-primrose			S5	FO	
Panicum oligosanthes	Few-flowered Panic Grass			S4	GR	
Panicum virgatum	Switch Grass			S4	GR	
Parthenocissus inserta	Thicket Creeper			S5	VW	
Penstemon digitalis	Foxglove Beardtongue			S4S5	FO	
Phragmites australis	Common Reed			S5	GR	Y
Phryma leptostachya	Lopseed			S4S5	FO	
Plantago lanceolata	English Plantain			SE5	FO	
Plantago major	Nipple-seed Plantain			SE5	FO	
Platanus occidentalis	Sycamore			S4	TR	

Floral Inventory: FODM7-4 (ELC Community 2)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Poa pratensis ssp. pratensis	Kentucky Bluegrass			S5	GR	Y
Polygonum virginianum	Virginia Knotweed			S4	FO	
Populus deltoides ssp. deltoides	Eastern Cottonwood			SU	TR	
Rhus radicans ssp. rydbergii	Western Poison Ivy			S5	SH	
Robinia pseudo-acacia	Black Locust			SE5	TR	Y
Rosa multiflora	Rambler Rose			SE4	SH	Y
Rubus flagellaris	Northern Dewberry			S4	SH	
Rubus idaeus ssp. melanolasius	Wild Red Raspberry			S5	SH	
Rumex crispus	Curly Dock			SE5	FO	
Salix eriocephala	Heart-leaved Willow			S5	SH	
Salix exigua	Sandbar Willow			S5	SH	
Scirpus pendulus	Pendulous Bulrush			S5	SE	
Solidago altissima var. altissima	Tall Goldenrod			S5	FO	
Solidago sempervirens	Seaside Goldenrod			SE2	FO	
Spartina pectinata	Fresh Water Cordgrass			S4	GR	
Stellaria media	Common Starwort			SE5	FO	
Taraxacum officinale	Common Dandelion			SE5	FO	
Tragopogon dubius	Meadow Goat's-beard			SE5	FO	
Trifolium pratense	Red Clover			SE5	FO	
Trifolium repens	White Clover			SE5	FO	
Typha angustifolia	Narrow-leaved Cattail			S5	FO	
Ulmus americana	American Elm			S5	TR	
Ulmus pumila	Siberian Elm			SE3	TR	Y
Verbascum blattaria	White Moth Mullein			SE5	FO	
Verbascum thapsus	Common Mullein			SE5	FO	
Verbena stricta	Hoary Vervain			S4	FO	
Verbena urticifolia	White Vervain			S5	FO	
Vernonia missurica	Ironweed			S3?	FO	
Vitis riparia	Riverbank Grape			S5	VW	
Xanthium strumarium	Rough Cockle-bur			S5	FO	

Floral Inventory: MEMM2 (ELC Community 3)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Acer negundo	Manitoba Maple			S5	TR	Y
Achillea millefolium ssp. millefolium	Common Yarrow			SE	FO	
Agrimonia gryposepala	Tall Hairy Agrimony			S5	FO	
Ailanthus altissima	Tree-of-heaven			SE5	TR	Y
Alisma plantago-aquatica	Broad-leaved Water-plantain			S5	FO	
Allium canadense var. canadense	Wild Garlic			S5	FO	
Andropogon gerardii	Big Bluestem			S4	GR	
Andropogon virginicus	Broom-sedge			S4	GR	
Anemone virginiana var. virginiana	Virginia Anemone			S5	FO	
Antennaria parlinii ssp. fallax	Hairy Pussytoes			S5	FO	
Apios americana	American Groundnut			S5	VI	
Apocynum cannabinum var. cannabinum	Clasping-leaf Dogbane			S5	FO	
Arctium minus ssp. minus	Lesser Burdock			SE5	FO	
Asclepias sullivantii	Sullivant's Milkweed			S3	FO	
Asclepias syriaca	Common Milkweed			S5	FO	
Asclepias tuberosa	Butterfly Milkweed			S4	FO	
Asclepias verticillata	Whorled Milkweed			S4	FO	
Asparagus officinalis	Asparagus			SE5	FO	
Aster ericoides ssp. ericoides	Heath Aster			S5	FO	
Aster laevis var. laevis	Smooth Blue Aster			S5	FO	
Aster lanceolatus ssp. lanceolatus	Panicled Aster			S5	FO	
Aster pilosus var. pilosus	Hairy Aster			S5	FO	
Berteroa incana	Hoary False-alyssum			SE5	FO	
Bromus inermis ssp. inermis	Smooth Brome			SE5	GR	
Campanula rapunculoides	Creeping Bellflower			SE5	FO	
Capsella bursa-pastoris	Common Shepherd's Purse			SE5	FO	
Carex granularis	Meadow Sedge			S5	SE	
Carex sp.	Sedge Species				SE	
Carex tenera	Slender Sedge			S5	SE	
Carex vulpinoidea	Fox Sedge			S5	SE	
Carya glabra	Pignut Hickory			S3	TR	
Centaurea maculosa	Spotted Knapweed			SE5	FO	
Chenopodium album var. album	White Goosefoot			SE5	FO	
Cichorium intybus	Chicory			SE5	FO	
Cirsium arvense	Crepping Thistle			SE5	FO	Y
Cirsium discolor	Field Thistle			S3	FO	
Convolvulus arvensis	Field Bindweed			SE5	VI	
Cornus drummondii	Rough-leaved Dogwood			S4	SH	
Dactylis glomerata	Orchard Grass			SE5	GR	
Danthonia spicata	Poverty Oat-grass			S5	GR	
Daucus carota	Queen Anne's Lace			SE5	FO	
Desmodium canadense	Showy Tick-trefoil			S4	FO	
Elaeagnus angustifolia	Russian Olive			SE3	SH	
Elaeagnus umbellata	Autumn Olive			SE3	SH	Y
Eleusine indica	India Goosegrass			SE3	GR	
Elymus repens	Quack Grass			SE5	GR	
Equisetum laevigatum	Smooth Scouring-rush			S4	FE	
Erigeron annuus	White-top Fleabane			S5	FO	
Eupatorium altissimum	Tall Boneset			S1	FO	
Festuca arundinacea	Kentucky Fescue			SE5	GR	
Fragaria virginiana ssp. virginiana	Virginia Strawberry			SU	FO	
Galium asprellum	Rough Bedstraw			S5	FO	
Geum canadense	White Avens			S5	FO	
Glechoma hederacea	Ground Ivy			SE5	FO	
Gnaphalium obtusifolium	Fragrant Cudweed			S5	FO	
Hypericum perforatum	St. John's-wort			SE5	FO	
Hypericum punctatum	Common St. John's-wort			S5	FO	
Juglans nigra	Black Walnut			S4	TR	

Floral Inventory: MEMM2 (ELC Community 3)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Juncus dudleyi	Dudley's Rush			S5	RU	
Juniperus communis	Ground Juniper			S5	SH	
Koeleria macrantha	June Grass			S4	GR	
Lactuca serriola	Prickly Lettuce			SE5	FO	
Lespedeza capitata	Round-head Bushclover			S4	FO	
Lonicera maackii	Amur Honeysuckle			SE2	SH	Y
Lotus corniculatus	Bird's-foot Trefoil			SE5	FO	Y
Lycopus americanus	American Bugleweed			S5	FO	
Malus baccata	Siberian Crabapple			SE1	SH	
Medicago lupulina	Black Medic			SE5	FO	
Monarda fistulosa	Wild Bergamot			S5	FO	
Morus alba	White Mulberry			SE5	TR	Y
Panicum columbianum var. siccanum	Panic Grass			S4	GR	
Panicum oligosanthes	Few-flowered Panic Grass			S4	GR	
Panicum virgatum	Switch Grass			S4	GR	
Paspalum setaceum	Slender Paspalum			S2	GR	
Penstemon digitalis	Foxglove Beardtongue			S4S5	FO	
Phleum pratense	Timothy			SE5	GR	
Phragmites australis	Common Reed			S5	GR	Y
Physalis heterophylla	Clammy Ground-cherry			S4	FO	
Phytolacca americana	Common Pokeweed			S4	FO	
Plantago lanceolata	English Plantain			SE5	FO	
Plantago rugelii	Black-seed Plantain			S5	FO	
Platanus occidentalis	Sycamore			S4	TR	
Poa compressa	Canada Bluegrass			S5	GR	
Poa pratensis ssp. pratensis	Kentucky Bluegrass			S5	GR	Y
Populus deltoides ssp. deltoides	Eastern Cottonwood			SU	TR	
Potentilla recta	Sulphur Cinquefoil			SE5	FO	
Potentilla simplex	Old-field Cinquefoil			S5	FO	
Prunus serotina	Wild Black Cherry			S5	TR	
Pycnanthemum virginianum	Virginia Mountain-mint			S4	FO	
Quercus velutina	Black Oak			S4	TR	
Ranunculus sceleratus var. sceleratus	Cursed Crowfoot			S5	FO	
Rhamnus cathartica	Buckthorn			SE5	SH	Y
Rhus radicans ssp. rydbergii	Western Poison Ivy			S5	SH	
Rosa multiflora	Rambler Rose			SE4	SH	Y
Rubus allegheniensis	Allegheny Blackberry			S5	SH	
Rubus flagellaris	Northern Dewberry			S4	SH	
Rubus occidentalis	Black Raspberry			S5	SH	
Rudbeckia hirta	Black-eyed Susan			S5	FO	
Rumex acetosella ssp. acetosella	Sheep Sorrel			SE5	FO	
Rumex crispus	Curly Dock			SE5	FO	
Sanicula marilandica	Black Snakeroot			S5	FO	
Saponaria officinalis	Bouncing-bet			SE5	FO	
Schizachyrium scoparium	Little Bluestem			S4	GR	
Scirpus pendulus	Pendulous Bulrush			S5	SE	
Sisyrinchium albidum	White Blue-eyed Grass			S1	FO	
Solanum nigrum	Black Nightshade			SE1	FO	
Solidago altissima var. altissima	Tall Goldenrod			S5	FO	
Solidago gigantea	Smooth Goldenrod			S5	FO	
Solidago rugosa ssp. rugosa	Rough Goldenrod			S5	FO	
Stellaria media	Common Starwort			SE5	FO	
Taraxacum officinale	Common Dandelion			SE5	FO	
Thlaspi arvense	Field Penny-cress			SE5	FO	
Tragopogon dubius	Meadow Goat's-beard			SE5	FO	
Trifolium aureum	Yellow Clover			SE5	FO	
Trifolium pratense	Red Clover			SE5	FO	
Triodanis perfoliata	Venus'-looking-glass			S4	FO	

Floral Inventory: MEMM2 (ELC Community 3)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Ulmus pumila	Siberian Elm			SE3	TR	Y
Verbascum thapsus	Common Mullein			SE5	FO	
Verbena hastata	Blue Vervain			S5	FO	
Verbena stricta	Hoary Vervain			S4	FO	
Verbena urticifolia	White Vervain			S5	FO	
Vernonia missurica	Ironweed			S3?	FO	
Viola sororia	Woolly Blue Violet			S5	FO	
Vitis riparia	Riverbank Grape			S5	VW	

Floral Inventory: FODM2-2 (ELC Community 4)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Acer rubrum	Red Maple			S5	TR	
Agrimonia gryposepala	Tall Hairy Agrimony			S5	FO	
Alisma plantago-aquatica	Broad-leaved Water-plantain			S5	FO	
Alliaria petiolata	Garlic Mustard			SE5	FO	Y
Ambrosia trifida	Great Ragweed			S5	FO	
Amphicarpaea bracteata	Hog-peanut			S5	VI	
Anemone canadensis	Canada Anemone			S5	FO	
Anemone virginiana var. virginiana	Virginia Anemone			S5	FO	
Antennaria parlinii ssp. fallax	Hairy Pussytoes			S5	FO	
Apios americana	American Groundnut			S5	VI	
Apocynum cannabinum var. cannabinum	Clasping-leaf Dogbane			S5	FO	
Aquilegia canadensis	Wild Columbine			S5	FO	
Aralia nudicaulis	Wild Sarsaparilla			S5	FO	
Arctium minus ssp. minus	Lesser Burdock			SE5	FO	
Asclepias exaltata	Poke Milkweed			S4	FO	
Asclepias purpurascens	Purple Milkweed			S2	FO	
Asparagus officinalis	Asparagus			SE5	FO	
Aster lanceolatus ssp. lanceolatus	Panicled Aster			S5	FO	
Aster lateriflorus var. lateriflorus	Calico Aster			S5	FO	
Aster macrophyllus	Large-leaved Aster			S5	FO	
Aster novae-angliae	New England Aster			S5	FO	
Aster umbellatus var. umbellatus	Flat-topped White Aster			S5	FO	
Aster urophyllus	Arrow-leaved Aster			S4	FO	
Athyrium filix-femina var. cyclosorum	Northwestern Lady Fern			SH	FE	
Bidens frondosa	Devil's Beggar's Ticks			S5	FO	
Calamagrostis canadensis	Blue-joint Reedgrass			S5	GR	
Campsis radicans	Trumpet Creeper			S2?	VW	
Carex albicans var. albicans	Closely-covered Sedge			S3	SE	
Carex buxbaumii	Buxbaum's Sedge			S5	SE	
Carex cristatella	Crested Sedge			S5	SE	
Carex normalis	Larger Straw Sedge			S4	SE	
Carex pellita	Woolly Sedge			S5	SE	
Carex pensylvanica	Pennsylvania Sedge			S5	SE	
Carex tenera	Slender Sedge			S5	SE	
Carex vulpinoidea	Fox Sedge			S5	SE	
Carya laciniosa	Big Shellbark Hickory			S3	TR	
Celastrus scandens	Climbing Bittersweet			S5	VW	
Celtis occidentalis	Common Hackberry			S4	TR	
Cerastium fontanum	Common Mouse-ear Chickweed			SE5	FO	
Cicuta maculata	Spotted Water-hemlock			S5	FO	
Circaea lutetiana ssp. canadensis	Enchanter's Nightshade			S5	FO	
Cirsium arvense	Crepping Thistle			SE5	FO	Y
Clematis virginiana	Virginia Virgin-bower			S5	VI	
Coreopsis tripteris	Tall Coreopsis			S2	FO	
Cornus drummondii	Rough-leaved Dogwood			S4	SH	
Cornus foemina ssp. racemosa	Gray Dogwood			S5	SH	
Corylus americana	American Hazelnut			S5	SH	
Cryptotaenia canadensis	Canada Honewort			S5	FO	
Dactylis glomerata	Orchard Grass			SE5	GR	
Daucus carota	Queen Anne's Lace			SE5	FO	
Desmodium canadense	Showy Tick-trefoil			S4	FO	
Desmodium glutinosum	Pointed-leaved Tick-trefoil			S4	FO	
Dioscorea quaternata	Fourleaf Wild-yam			S4	VI	
Erigeron annuus	White-top Fleabane			S5	FO	
Eupatorium maculatum ssp. maculatum	Spotted Joe-pye Weed			S5	FO	
Euphorbia corollata	Flowering Spurge			S4	FO	
Euthamia graminifolia	Grass-leaved Goldenrod			S5	FO	
Fragaria virginiana ssp. virginiana	Virginia Strawberry			SU	FO	

Floral Inventory: FODM2-2 (ELC Community 4)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Fraxinus pennsylvanica	Green Ash			S5	TR	
Galium asprellum	Rough Bedstraw			S5	FO	
Galium circaezans	Wild Licorice			S5	FO	
Galium triflorum	Sweet-scent Bedstraw			S5	FO	
Geranium maculatum	Wild Geranium			S5	FO	
Geum canadense	White Avens			S5	FO	
Glyceria striata	Fowl Manna Grass			S5	GR	
Hamamelis virginiana	American Witch-hazel			S5	SH	
Helianthus divaricatus	Woodland Sunflower			S5	FO	
Impatiens capensis	Spotted Jewel-weed			S5	FO	
Iris virginica	Virginia Blue Flag			S5	FO	
Juncus tenuis	Slender Rush			S5	RU	
Leersia virginica	White Cutgrass			S4	GR	
Liparis liliifolia	Purple Twayblade	END	END	S2	FO	
Lobelia siphilitica	Great Blue Lobelia			S5	FO	
Luzula multiflora ssp. multiflora	Common Woodrush			S5	RU	
Lycopus americanus	American Bugleweed			S5	FO	
Lysimachia quadrifolia	Whorled Loosestrife			S4	FO	
Lythrum alatum	Winged Loosestrife			S3	FO	
Lythrum salicaria	Slender-spike Loosestrife			SE5	FO	Y
Menispermum canadense	Canada Moonseed			S4	VI	
Morus alba	White Mulberry			SE5	TR	Y
Onoclea sensibilis	Sensitive Fern			S5	FE	
Osmorhiza claytonii	Hairy Sweet-cicely			S5	FO	
Osmorhiza longistylis	Smooth Sweet-cicely			S5	FO	
Osmunda regalis var. spectabilis	Royal Fern			S5	FE	
Oxalis stricta	Upright Yellow Wood Sorrel			S5	FO	
Panicum acuminatum var. acuminatum	Acuminate Panic Grass			S5	GR	
Panicum clandestinum	Broadleaf Panic Grass			S2	GR	
Parthenocissus quinquefolia	Virginia Creeper			S4?	VW	
Phryma leptostachya	Lopseed			S4S5	FO	
Plantago rugelii	Black-seed Plantain			S5	FO	
Poa sp.	Bluegrass Species				GR	
Podophyllum peltatum	May Apple			S5	FO	
Polygonatum pubescens	Downy Solomon's Seal			S5	FO	
Polygonum persicaria	Lady's Thumb			SE5	FO	
Polygonum virginianum	Virginia Knotweed			S4	FO	
Populus tremuloides	Quaking Aspen			S5	TR	
Potentilla simplex	Old-field Cinquefoil			S5	FO	
Prenanthes alba	White Rattlesnake-root			S5	FO	
Prunella vulgaris ssp. lanceolata	Self-heal			S5	FO	
Prunus serotina	Wild Black Cherry			S5	TR	
Pteridium aquilinum var. latiusculum	Bracken Fern			S5	FE	
Pycnanthemum virginianum	Virginia Mountain-mint			S4	FO	
Quercus palustris	Pin Oak			S4	TR	
Quercus velutina	Black Oak			S4	TR	
Ranunculus sceleratus var. sceleratus	Cursed Crowfoot			S5	FO	
Rhamnus cathartica	Buckthorn			SE5	SH	Y
Rhamnus frangula	Glossy Buckthorn			SE5	SH	Y
Rhus radicans ssp. rydbergii	Western Poison Ivy			S5	SH	
Rhus typhina	Staghorn Sumac			S5	SH	
Ribes americanum	Wild Black Currant			S5	SH	
Robinia pseudo-acacia	Black Locust			SE5	TR	Y
Rosa blanda	Smooth Rose			S5	SH	
Rosa multiflora	Rambler Rose			SE4	SH	Y
Rubus allegheniensis	Allegheny Blackberry			S5	SH	
Rubus flagellaris	Northern Dewberry			S4	SH	
Rubus occidentalis	Black Raspberry			S5	SH	

Floral Inventory: FODM2-2 (ELC Community 4)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Rumex crispus	Curly Dock			SE5	FO	
Salix discolor	Pussy Willow			S5	SH	
Sanicula marilandica	Black Snakeroot			S5	FO	
Sassafras albidum	Sassafras			S4	TR	
Scirpus pendulus	Pendulous Bulrush			S5	SE	
Smilax hispida	Hispid Greenbrier			S4	VW	
Smilax lasioneura	Herbaceous Greenbrier			S4	VI	
Solidago gigantea	Smooth Goldenrod			S5	FO	
Solidago rugosa ssp. rugosa	Rough Goldenrod			S5	FO	
Symphytum officinale ssp. officinale	Common Comfrey			SE5	FO	
Taraxacum officinale	Common Dandelion			SE5	FO	
Thalictrum dioicum	Early Meadowrue			S5	FO	
Thalictrum pubescens	Tall Meadowrue			S5	FO	
Thalictrum revolutum	Wax-leaved Meadowrue			S2	FO	
Ulmus americana	American Elm			S5	TR	
Uvularia sessilifolia	Sessile-leaf Bellwort			S4	FO	
Vaccinium pallidum	Early Lowbush Blueberry			S4	SH	
Verbena urticifolia	White Vervain			S5	FO	
Vernonia missurica	Ironweed			S3?	FO	
Veronicastrum virginicum	Culver's-root			S2	FO	
Viburnum lentago	Nannyberry			S5	SH	
Viburnum trilobum	Highbush Cranberry			S5	SH	
Viola sororia	Woolly Blue Violet			S5	FO	
Vitis riparia	Riverbank Grape			S5	VW	
Zanthoxylum americanum	Northern Prickly Ash			S5	SH	

Floral Inventory: FODM7-4 (ELC Community 5)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Acer negundo	Manitoba Maple			S5	TR	Y
Acer platanoides	Norway Maple			SE5	TR	Y
Acer rubrum	Red Maple			S5	TR	
Agrimonia gryposepala	Tall Hairy Agrimony			S5	FO	
Ailanthus altissima	Tree-of-heaven			SE5	TR	Y
Ambrosia trifida	Great Ragweed			S5	FO	
Amphicarpaea bracteata	Hog-peanut			S5	VI	
Apios americana	American Groundnut			S5	VI	
Apocynum androsaemifolium ssp. androsaemifolium	Spreading Dogbane			S5	FO	
Apocynum cannabinum var. cannabinum	Clasping-leaf Dogbane			S5	FO	
Arctium minus ssp. minus	Lesser Burdock			SE5	FO	
Arisaema triphyllum ssp. triphyllum	Jack-in-the-pulpit			S5	FO	
Asclepias exaltata	Poke Milkweed			S4	FO	
Asclepias verticillata	Whorled Milkweed			S4	FO	
Asplenium platyneuron	Ebony Spleenwort			S4	FE	
Aster lanceolatus ssp. lanceolatus	Panicled Aster			S5	FO	
Aster lateriflorus var. lateriflorus	Calico Aster			S5	FO	
Aster umbellatus var. umbellatus	Flat-topped White Aster			S5	FO	
Aster urophyllus	Arrow-leaved Aster			S4	FO	
Bidens frondosa	Devil's Beggar's Ticks			S5	FO	
Bromus inermis ssp. inermis	Smooth Brome			SE5	GR	
Bromus japonicus	Japanese Brome			SE4	GR	
Calystegia sepium ssp. americanum	Hedge Bindweed			SU	FO	
Campsis radicans	Trumpet Creeper			S2?	VW	
Carex cristatella	Crested Sedge			S5	SE	
Carex pensylvanica	Pennsylvania Sedge			S5	SE	
Carex rosea	Rosy Sedge			S5	SE	
Carya cordiformis	Bitternut Hickory			S5	TR	
Carya glabra	Pignut Hickory			S3	TR	
Carya ovata var. ovata	Shagbark Hickory			S5	TR	
Celastrus orbiculatus	Climbing Bittersweet			SE2	VW	Y
Celastrus scandens	Climbing Bittersweet			S5	VW	
Celtis occidentalis	Common Hackberry			S4	TR	
Cicuta maculata	Spotted Water-hemlock			S5	FO	
Circaea lutetiana ssp. canadensis	Enchanter's Nightshade			S5	FO	
Cirsium arvense	Crepping Thistle			SE5	FO	Y
Cirsium discolor	Field Thistle			S3	FO	
Cirsium vulgare	Bull Thistle			SE5	FO	
Comandra umbellata	Umbellate Bastard Toad-flax			S5	FO	
Convallaria majalis	European Lily-of-the-valley			SE5	FO	
Cornus drummondii	Rough-leaved Dogwood			S4	SH	
Cornus foemina ssp. racemosa	Gray Dogwood			S5	SH	
Corylus americana	American Hazelnut			S5	SH	
Crataegus mollis	Downy Hawthorn			S5	SH	
Crataegus punctata	Dotted Hawthorn			S5	SH	
Cryptotaenia canadensis	Canada Honewort			S5	FO	
Dactylis glomerata	Orchard Grass			SE5	GR	
Daucus carota	Queen Anne's Lace			SE5	FO	
Desmodium glutinosum	Pointed-leaved Tick-trefoil			S4	FO	
Dioscorea quaternata	Fourleaf Wild-yam			S4	VI	
Elaeagnus umbellata	Autumn Olive			SE3	SH	Y
Equisetum laevigatum	Smooth Scouring-rush			S4	FE	
Erigeron annuus	White-top Fleabane			S5	FO	
Erigeron philadelphicus ssp. philadelphicus	Philadelphia Fleabane			S5	FO	
Eupatorium rugosum	White Snakeroot			S5	FO	
Festuca arundinacea	Kentucky Fescue			SE5	GR	
Fraxinus pennsylvanica	Green Ash			S5	TR	

Floral Inventory: FODM7-4 (ELC Community 5)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Galium asprellum	Rough Bedstraw			S5	FO	
Galium palustre	Marsh Bedstraw			S5	FO	
Galium triflorum	Sweet-scent Bedstraw			S5	FO	
Geranium maculatum	Wild Geranium			S5	FO	
Geum canadense	White Avens			S5	FO	
Glechoma hederacea	Ground Ivy			SE5	FO	
Glyceria striata	Fowl Manna Grass			S5	GR	
Hackelia virginiana	Virginia Stickseed			S5	FO	
Heliopsis helianthoides	Ox-eye			S5	FO	
Hypericum punctatum	Common St. John's-wort			S5	FO	
Juglans nigra	Black Walnut			S4	TR	
Lactuca biennis	Tall Blue Lettuce			S5	FO	
Leersia virginica	White Cutgrass			S4	GR	
Leonurus cardiaca ssp. cardiaca	Common Motherwort			SE5	FO	
Lindera benzoin	Spicebush			S5	SH	
Lobelia siphilitica	Great Blue Lobelia			S5	FO	
Lonicera maackii	Amur Honeysuckle			SE2	SH	Y
Lycopus americanus	American Bugleweed			S5	FO	
Maianthemum racemosum ssp. racemosum	False Solomon's Seal			S5	FO	
Maianthemum stellatum	Starflower False Solomon's Seal			S5	FO	
Malus coronaria	Sweet Crab-apple			S4	SH	
Menispermum canadense	Canada Moonseed			S4	VI	
Monarda fistulosa	Wild Bergamot			S5	FO	
Morus alba	White Mulberry			SE5	TR	Y
Muhlenbergia sylvatica var. sylvatica	Woodland Satin Grass			S2	GR	
Onoclea sensibilis	Sensitive Fern			S5	FE	
Osmunda regalis var. spectabilis	Royal Fern			S5	FE	
Oxalis stricta	Upright Yellow Wood Sorrel			S5	FO	
Panicum columbianum var. siccanum	Panic Grass			S4	GR	
Parthenocissus inserta	Thicket Creeper			S5	VW	
Parthenocissus quinquefolia	Virginia Creeper			S4?	VW	
Penstemon digitalis	Foxglove Beardtongue			S4S5	FO	
Phragmites australis	Common Reed			S5	GR	Y
Phryma leptostachya	Lopseed			S4S5	FO	
Physalis heterophylla	Clammy Ground-cherry			S4	FO	
Phytolacca americana	Common Pokeweed			S4	FO	
Plantago rugelii	Black-seed Plantain			S5	FO	
Platanus occidentalis	Sycamore			S4	TR	
Poa pratensis ssp. pratensis	Kentucky Bluegrass			S5	GR	Y
Podophyllum peltatum	May Apple			S5	FO	
Polygonatum biflorum	Giant Solomon's Seal			S4	FO	
Polygonum persicaria	Lady's Thumb			SE5	FO	
Polygonum virginianum	Virginia Knotweed			S4	FO	
Populus deltoides ssp. deltoides	Eastern Cottonwood			SU	TR	
Prunus serotina	Wild Black Cherry			S5	TR	
Prunus virginiana ssp. virginiana	Choke Cherry			S5	TR	
Pyrus communis	Common Pear			SE4	TR	
Quercus alba	White Oak			S5	TR	
Quercus bicolor	Swamp White Oak			S4	TR	
Quercus macrocarpa	Bur Oak			S5	TR	
Quercus palustris	Pin Oak			S4	TR	
Quercus velutina	Black Oak			S4	TR	
Ranunculus sceleratus var. sceleratus	Cursed Crowfoot			S5	FO	
Rhamnus cathartica	Buckthorn			SE5	SH	Y
Rhus glabra	Smooth Sumac			S5	SH	
Rhus radicans ssp. negundo	Poison Ivy			S5	VW	
Rhus radicans ssp. rydbergii	Western Poison Ivy			S5	SH	
Rhus typhina	Staghorn Sumac			S5	SH	

Floral Inventory: FODM7-4 (ELC Community 5)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Rhus x pulvinata	Hybrid Sumac			S2?	SH	
Ribes americanum	Wild Black Currant			S5	SH	
Robinia pseudo-acacia	Black Locust			SE5	TR	Y
Rosa multiflora	Rambler Rose			SE4	SH	Y
Rubus allegheniensis	Allegheny Blackberry			S5	SH	
Rubus flagellaris	Northern Dewberry			S4	SH	
Rubus occidentalis	Black Raspberry			S5	SH	
Rudbeckia hirta	Black-eyed Susan			S5	FO	
Rumex crispus	Curly Dock			SE5	FO	
Sambucus canadensis	Common Elderberry			S5	SH	
Sanicula marilandica	Black Snakeroot			S5	FO	
Smilax hispida	Hispid Greenbrier			S4	VW	
Smilax lasioneura	Herbaceous Greenbrier			S4	VI	
Solidago altissima var. altissima	Tall Goldenrod			S5	FO	
Solidago canadensis	Canada Goldenrod			S5	FO	
Solidago gigantea	Smooth Goldenrod			S5	FO	
Taraxacum officinale	Common Dandelion			SE5	FO	
Thalictrum dasycarpum	Purple Meadowrue			S4?	FO	
Thalictrum dioicum	Early Meadowrue			S5	FO	
Thalictrum revolutum	Wax-leaved Meadowrue			S2	FO	
Ulmus americana	American Elm			S5	TR	
Ulmus rubra	Slippery Elm			S5	TR	
Uvularia sessilifolia	Sessile-leaf Bellwort			S4	FO	
Verbena urticifolia	White Vervain			S5	FO	
Viburnum trilobum	Highbush Cranberry			S5	SH	
Vitis riparia	Riverbank Grape			S5	VW	
Xanthium strumarium	Rough Cockle-bur			S5	FO	
Zanthoxylum americanum	Northern Prickly Ash			S5	SH	

Floral Inventory: FODM10-2 (ELC Community 6)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Acer negundo	Manitoba Maple			S5	TR	Y
Acer rubrum	Red Maple			S5	TR	
Agrimonia gryposepala	Tall Hairy Agrimony			S5	FO	
Alliaria petiolata	Garlic Mustard			SE5	FO	Y
Anemone canadensis	Canada Anemone			S5	FO	
Anemone quinquefolia var. quinquefolia	Wood Anemone			S5	FO	
Anemone virginiana var. virginiana	Virginia Anemone			S5	FO	
Arctium minus ssp. minus	Lesser Burdock			SE5	FO	
Arisaema triphyllum ssp. triphyllum	Jack-in-the-pulpit			S5	FO	
Artemisia vulgaris	Mugwort			SE5	FO	
Asclepias exaltata	Poke Milkweed			S4	FO	
Asparagus officinalis	Asparagus			SE5	FO	
Aster lanceolatus ssp. lanceolatus	Panicled Aster			S5	FO	
Aster lateriflorus var. lateriflorus	Calico Aster			S5	FO	
Aster pilosus var. pilosus	Hairy Aster			S5	FO	
Aster umbellatus var. umbellatus	Flat-topped White Aster			S5	FO	
Aster urophyllus	Arrow-leaved Aster			S4	FO	
Cardamine pensylvanica	Pennsylvania Bitter-cress			S5	FO	
Carex bebbii	Bebb's Sedge			S5	SE	
Carya cordiformis	Bitternut Hickory			S5	TR	
Carya glabra	Pignut Hickory			S3	TR	
Carya ovata var. ovata	Shagbark Hickory			S5	TR	
Celastrus scandens	Climbing Bittersweet			S5	VW	
Celtis occidentalis	Common Hackberry			S4	TR	
Circaea lutetiana ssp. canadensis	Enchanter's Nightshade			S5	FO	
Cirsium arvense	Crepping Thistle			SE5	FO	Y
Cornus drummondii	Rough-leaved Dogwood			S4	SH	
Cornus foemina ssp. racemosa	Gray Dogwood			S5	SH	
Corylus americana	American Hazelnut			S5	SH	
Crataegus mollis	Downy Hawthorn			S5	SH	
Dactylis glomerata	Orchard Grass			SE5	GR	
Daucus carota	Queen Anne's Lace			SE5	FO	
Desmodium cuspidatum var. cuspidatum	Smooth-bracted Tick-trefoil			S3	FO	
Dioscorea quaternata	Fourleaf Wild-yam			S4	VI	
Dipsacus fullonum ssp. sylvestris	Common Teasel			SE5	FO	
Elaeagnus umbellata	Autumn Olive			SE3	SH	Y
Erigeron annuus	White-top Fleabane			S5	FO	
Erigeron pulchellus	Robin's Plantain			S5	FO	
Eupatorium altissimum	Tall Boneset			S1	FO	
Fraxinus pennsylvanica	Green Ash			S5	TR	
Galium asprellum	Rough Bedstraw			S5	FO	
Galium trifidum ssp. trifidum	Small Bedstraw			S5	FO	
Geranium maculatum	Wild Geranium			S5	FO	
Geum canadense	White Avens			S5	FO	
Gleditsia triacanthos	Honey Locust			S2	TR	
Glyceria striata	Fowl Manna Grass			S5	GR	
Hackelia virginiana	Virginia Stickseed			S5	FO	
Hamamelis virginiana	American Witch-hazel			S5	SH	
Helianthus divaricatus	Woodland Sunflower			S5	FO	
Heracleum maximum	Cow-parsnip			S5	FO	
Juglans nigra	Black Walnut			S4	TR	
Leersia virginica	White Cutgrass			S4	GR	
Lobelia siphilitica	Great Blue Lobelia			S5	FO	
Lonicera japonica	Japanese Honeysuckle			SE2	VW	Y
Lonicera maackii	Amur Honeysuckle			SE2	SH	Y
Lonicera tatarica	Tartarian Honeysuckle			SE5	SH	Y
Luzula multiflora ssp. multiflora	Common Woodrush			S5	RU	
Lysimachia quadrifolia	Whorled Loosestrife			S4	FO	

Floral Inventory: FODM10-2 (ELC Community 6)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Maianthemum racemosum ssp. racemosum	False Solomon's Seal			S5	FO	
Maianthemum stellatum	Starflower False Solomon's Seal			S5	FO	
Malus coronaria	Sweet Crab-apple			S4	SH	
Menispermum canadense	Canada Moonseed			S4	VI	
Morus alba	White Mulberry			SE5	TR	Y
Nepeta cataria	Catnip			SE5	FO	
Oenothera biennis	Common Evening-primrose			S5	FO	
Osmunda claytoniana	Interrupted Fern			S5	FE	
Osmunda regalis var. spectabilis	Royal Fern			S5	FE	
Oxalis stricta	Upright Yellow Wood Sorrel			S5	FO	
Panicum columbianum var. siccanum	Panic Grass			S4	GR	
Parthenocissus inserta	Thicket Creeper			S5	VW	
Pastinaca sativa	Wild Parsnip			SE5	FO	
Phragmites australis	Common Reed			S5	GR	Y
Phytolacca americana	Common Pokeweed			S4	FO	
Platanus occidentalis	Sycamore			S4	TR	
Podophyllum peltatum	May Apple			S5	FO	
Polygonatum biflorum	Giant Solomon's Seal			S4	FO	
Polygonum virginianum	Virginia Knotweed			S4	FO	
Potentilla simplex	Old-field Cinquefoil			S5	FO	
Prunus virginiana ssp. virginiana	Choke Cherry			S5	TR	
Quercus alba	White Oak			S5	TR	
Quercus bicolor	Swamp White Oak			S4	TR	
Quercus macrocarpa	Bur Oak			S5	TR	
Quercus palustris	Pin Oak			S4	TR	
Quercus velutina	Black Oak			S4	TR	
Ranunculus sceleratus var. sceleratus	Cursed Crowfoot			S5	FO	
Rhamnus cathartica	Buckthorn			SE5	SH	Y
Rhus radicans ssp. negundo	Poison Ivy			S5	VW	
Rhus radicans ssp. rydbergii	Western Poison Ivy			S5	SH	
Ribes americanum	Wild Black Currant			S5	SH	
Rosa blanda	Smooth Rose			S5	SH	
Rosa carolina	Carolina Rose			S4	SH	
Rosa multiflora	Rambler Rose			SE4	SH	Y
Rosa setigera	Climbing Prairie Rose	SC	SC	S3	SH	
Rubus allegheniensis	Allegheny Blackberry			S5	SH	
Rubus flagellaris	Northern Dewberry			S4	SH	
Rubus occidentalis	Black Raspberry			S5	SH	
Rudbeckia triloba	Brown-eyed Susan			SE4	FO	
Rumex crispus	Curly Dock			SE5	FO	
Salix X sepulcralis	Hybrid Willow			SE2	TR	
Sambucus canadensis	Common Elderberry			S5	SH	
Sanicula marilandica	Black Snakeroot			S5	FO	
Sassafras albidum	Sassafras			S4	TR	
Setaria pumila	Yellow Foxtail			SE5	GR	
Smilax ecirrhata	Upright Greenbrier			S3?	FO	
Smilax hispida	Hispid Greenbrier			S4	VW	
Smilax lasioneura	Herbaceous Greenbrier			S4	VI	
Solidago altissima var. altissima	Tall Goldenrod			S5	FO	
Solidago canadensis	Canada Goldenrod			S5	FO	
Solidago sempervirens	Seaside Goldenrod			SE2	FO	
Taraxacum officinale	Common Dandelion			SE5	FO	
Thalictrum dioicum	Early Meadowrue			S5	FO	
Typha latifolia	Broad-leaf Cattail			S5	FO	
Ulmus americana	American Elm			S5	TR	
Urtica dioica ssp. gracilis	Slender Stinging Nettle			S5	FO	
Uvularia sessilifolia	Sessile-leaf Bellwort			S4	FO	
Vernonia missurica	Ironweed			S3?	FO	

Floral Inventory: FODM10-2 (ELC Community 6)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Veronicastrum virginicum	Culver's-root			S2	FO	
Viburnum lentago	Nannyberry			S5	SH	
Viburnum trilobum	Highbush Cranberry			S5	SH	
Vinca minor	Periwinkle			SE5	FO	Y
Vitis riparia	Riverbank Grape			S5	VW	
Xanthium strumarium	Rough Cockle-bur			S5	FO	
Zanthoxylum americanum	Northern Prickly Ash			S5	SH	
Carya cordiformis X glabra	Bitternut X Pignut Hickory					

Floral Inventory: MEFM4 (ELC Community 7)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Abutilon theophrasti	Velvet-leaf			SE5	FO	
Acalypha virginica var. rhomboidea	Three-seeded Mercury			S5	FO	
Acer negundo	Manitoba Maple			S5	TR	Y
Acer x freemanii	Freeman's Maple			SNA	TR	
Achillea millefolium ssp. millefolium	Common Yarrow			SE	FO	
Agrimonia gryposepala	Tall Hairy Agrimony			S5	FO	
Agrimonia parviflora	Small-flower Agrimony			S4	FO	
Agrostis gigantea	Redtop			SE5	GR	
Ailanthus altissima	Tree-of-heaven			SE5	TR	Y
Ambrosia artemisiifolia	Annual Ragweed			S5	FO	
Ambrosia trifida	Great Ragweed			S5	FO	
Apocynum cannabinum var. cannabinum	Clasping-leaf Dogbane			S5	FO	
Arctium minus ssp. minus	Lesser Burdock			SE5	FO	
Artemisia vulgaris	Mugwort			SE5	FO	
Asparagus officinalis	Asparagus			SE5	FO	
Aster ericoides ssp. ericoides	Heath Aster			S5	FO	
Aster lanceolatus ssp. lanceolatus	Panicled Aster			S5	FO	
Aster novae-angliae	New England Aster			S5	FO	
Aster pilosus var. pilosus	Hairy Aster			S5	FO	
Aster praealtus var. praealtus	Willow Aster	THR	THR	S2	FO	
Berteroa incana	Hoary False-alyssum			SE5	FO	
Bidens frondosa	Devil's Beggar's Ticks			S5	FO	
Bromus inermis ssp. inermis	Smooth Brome			SE5	GR	
Bromus tectorum	Downy Chess			SE5	GR	
Butomus umbellatus	Flowering-rush			SE5	FO	Y
Campsis radicans	Trumpet Creeper			S2?	VW	
Carex cristatella	Crested Sedge			S5	SE	
Carex granularis	Meadow Sedge			S5	SE	
Carex vulpinoidea	Fox Sedge			S5	SE	
Catalpa speciosa	Northern Catalpa			SE1	TR	
Celtis occidentalis	Common Hackberry			S4	TR	
Centaurea maculosa	Spotted Knapweed			SE5	FO	
Centaurium pulchellum	Branching Centaury-plant			SE3	FO	
Chrysanthemum leucanthemum	Oxeye Daisy			SE5	FO	
Cichorium intybus	Chicory			SE5	FO	
Cicuta maculata	Spotted Water-hemlock			S5	FO	
Circaea lutetiana ssp. canadensis	Enchanter's Nightshade			S5	FO	
Cirsium arvense	Crepping Thistle			SE5	FO	Y
Cirsium discolor	Field Thistle			S3	FO	
Cirsium vulgare	Bull Thistle			SE5	FO	
Convolvulus arvensis	Field Bindweed			SE5	VI	
Conyza canadensis	Fleabane			S5	FO	
Coreopsis lanceolata	Lance-leaved Coreopsis			S4?	FO	
Coreopsis verticillata	Whorled Tickseed			SE1	FO	
Cornus amomum ssp. obliqua	Silky Dogwood			S5	SH	
Cornus drummondii	Rough-leaved Dogwood			S4	SH	
Cornus foemina ssp. racemosa	Gray Dogwood			S5	SH	
Cyperus strigosus	Straw-colored Umbrella Sedge			S5	SE	
Dactylis glomerata	Orchard Grass			SE5	GR	
Danthonia spicata	Poverty Oat-grass			S5	GR	
Daucus carota	Queen Anne's Lace			SE5	FO	
Desmodium canadense	Showy Tick-trefoil			S4	FO	
Dianthus armeria	Deptford-pink			SE5	FO	
Dipsacus fullonum ssp. sylvestris	Common Teasel			SE5	FO	
Echinochloa crusgalli	Barnyard Grass			SE5	GR	
Elaeagnus angustifolia	Russian Olive			SE3	SH	
Elaeagnus umbellata	Autumn Olive			SE3	SH	Y
Elymus canadensis	Nodding Wild-rye			S4S5	GR	

Floral Inventory: MEFM4 (ELC Community 7)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Elymus virginicus var. virginicus	Virginia Wild-rye			S5	GR	
Epilobium coloratum	Purple-leaf Willow-herb			S5	FO	
Equisetum arvense	Field Horsetail			S5	FE	
Erigeron annuus	White-top Fleabane			S5	FO	
Erigeron philadelphicus ssp. philadelphicus	Philadelphia Fleabane			S5	FO	
Eupatorium altissimum	Tall Boneset			S1	FO	
Eupatorium perfoliatum	Common Boneset			S5	FO	
Euphorbia corollata	Flowering Spurge			S4	FO	
Euthamia graminifolia	Grass-leaved Goldenrod			S5	FO	
Festuca arundinacea	Kentucky Fescue			SE5	GR	
Fragaria virginiana ssp. virginiana	Virginia Strawberry			SU	FO	
Galium asprellum	Rough Bedstraw			S5	FO	
Geum canadense	White Avens			S5	FO	
Glechoma hederacea	Ground Ivy			SE5	FO	
Gleditsia triacanthos	Honey Locust			S2	TR	
Gnaphalium obtusifolium	Fragrant Cudweed			S5	FO	
Hackelia virginiana	Virginia Stickseed			S5	FO	
Heliopsis helianthoides	Ox-eye			S5	FO	
Hordeum jubatum ssp. jubatum	Fox-tail Barley			SE5	GR	
Hypericum perforatum	St. John's-wort			SE5	FO	
Hypericum punctatum	Common St. John's-wort			S5	FO	
Juglans nigra	Black Walnut			S4	TR	
Juncus dudleyi	Dudley's Rush			S5	RU	
Juncus torreyi	Torrey's Rush			S5	RU	
Juniperus virginiana	Eastern Red Cedar			S5	TR	
Lactuca serriola	Prickly Lettuce			SE5	FO	
Leersia oryzoides	Rice Cutgrass			S5	GR	
Leersia virginica	White Cutgrass			S4	GR	
Lepidium campestre	Field Pepper-grass			SE5	FO	
Liatris spicata	Spiked Blazing Star	THR	THR	S3	FO	
Ligustrum vulgare	European Privet			SE5	SH	
Linaria vulgaris	Butter-and-eggs			SE5	FO	
Lobelia siphilitica	Great Blue Lobelia			S5	FO	
Lonicera japonica	Japanese Honeysuckle			SE2	VW	Y
Lonicera maackii	Amur Honeysuckle			SE2	SH	Y
Lotus corniculatus	Bird's-foot Trefoil			SE5	FO	Y
Lycopus americanus	American Bugleweed			S5	FO	
Lycopus uniflorus	Northern Bugleweed			S5	FO	
Lycopus virginicus	Virginia Bugleweed			S3	FO	
Lythrum alatum	Winged Loosestrife			S3	FO	
Lythrum salicaria	Slender-spike Loosestrife			SE5	FO	Y
Malus baccata	Siberian Crabapple			SE1	SH	
Malva neglecta	Cheeses			SE5	FO	
Medicago lupulina	Black Medic			SE5	FO	
Medicago sativa ssp. sativa	Alfalfa			SE5	FO	
Melilotus alba	White Sweet Clover			SE5	FO	Y
Melilotus officinalis	Yellow Sweet Clover			SE5	FO	Y
Mentha arvensis ssp. borealis	Corn Mint			S5	FO	
Mimulus ringens	Square-stem Monkey-flower			S5	FO	
Monarda fistulosa	Wild Bergamot			S5	FO	
Morus alba	White Mulberry			SE5	TR	Y
Nepeta cataria	Catnip			SE5	FO	
Oenothera biennis	Common Evening-primrose			S5	FO	
Oxalis stricta	Upright Yellow Wood Sorrel			S5	FO	
Panicum virgatum	Switch Grass			S4	GR	
Parthenocissus inserta	Thicket Creeper			S5	VW	
Pastinaca sativa	Wild Parsnip			SE5	FO	
Penstemon digitalis	Foxglove Beardtongue			S4S5	FO	

Floral Inventory: MEFM4 (ELC Community 7)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Phleum pratense	Timothy			SE5	GR	
Phragmites australis	Common Reed			S5	GR	Y
Phryma leptostachya	Lopseed			S4S5	FO	
Plantago lanceolata	English Plantain			SE5	FO	
Plantago major	Nipple-seed Plantain			SE5	FO	
Plantago rugelii	Black-seed Plantain			S5	FO	
Platanus occidentalis	Sycamore			S4	TR	
Poa pratensis ssp. pratensis	Kentucky Bluegrass			S5	GR	Y
Polygonum aviculare	Prostrate Knotweed			SE5	FO	
Polygonum virginianum	Virginia Knotweed			S4	FO	
Populus deltoides ssp. deltoides	Eastern Cottonwood			SU	TR	
Potentilla anserina ssp. anserina	Silverweed			S5	FO	
Potentilla recta	Sulphur Cinquefoil			SE5	FO	
Prunella vulgaris ssp. lanceolata	Self-heal			S5	FO	
Pycnanthemum virginianum	Virginia Mountain-mint			S4	FO	
Quercus bicolor	Swamp White Oak			S4	TR	
Quercus palustris	Pin Oak			S4	TR	
Quercus velutina	Black Oak			S4	TR	
Ratibida pinnata	Gray-headed Coneflower			S3	FO	
Rhamnus cathartica	Buckthorn			SE5	SH	Y
Rhus radicans ssp. rydbergii	Western Poison Ivy			S5	SH	
Rhus typhina	Staghorn Sumac			S5	SH	
Robinia pseudo-acacia	Black Locust			SE5	TR	Y
Rosa multiflora	Rambler Rose			SE4	SH	Y
Rubus allegheniensis	Allegheny Blackberry			S5	SH	
Rubus flagellaris	Northern Dewberry			S4	SH	
Rubus occidentalis	Black Raspberry			S5	SH	
Rudbeckia hirta	Black-eyed Susan			S5	FO	
Rumex crispus	Curly Dock			SE5	FO	
Salix eriocephala	Heart-leaved Willow			S5	SH	
Salix exigua	Sandbar Willow			S5	SH	
Salix nigra	Black Willow			S4?	TR	
Saponaria officinalis	Bouncing-bet			SE5	FO	
Scirpus microcarpus	Small-fruit Bulrush			S5	SE	
Scirpus pendulus	Pendulous Bulrush			S5	SE	
Setaria faberi	Giant Foxtail			SE4	GR	
Setaria pumila	Yellow Foxtail			SE5	GR	
Silene vulgaris	Maiden's Tears			SE5	FO	
Solidago altissima var. altissima	Tall Goldenrod			S5	FO	
Solidago canadensis	Canada Goldenrod			S5	FO	
Solidago rugosa ssp. rugosa	Rough Goldenrod			S5	FO	
Strophostyles helvula	Wild Bean			S4	FO	
Taraxacum officinale	Common Dandelion			SE5	FO	
Tragopogon dubius	Meadow Goat's-beard			SE5	FO	
Trifolium pratense	Red Clover			SE5	FO	
Trifolium repens	White Clover			SE5	FO	
Typha angustifolia	Narrow-leaved Cattail			S5	FO	
Typha x glauca	Blue Cattail			S4?	FO	
Ulmus americana	American Elm			S5	TR	
Ulmus pumila	Siberian Elm			SE3	TR	Y
Verbascum blattaria	White Moth Mullein			SE5	FO	
Verbascum thapsus	Common Mullein			SE5	FO	
Verbena hastata	Blue Vervain			S5	FO	
Verbena stricta	Hoary Vervain			S4	FO	
Verbena urticifolia	White Vervain			S5	FO	
Vernonia missurica	Ironweed			S3?	FO	
Vitis riparia	Riverbank Grape			S5	VW	
Origanum majorana	Sweet marjoram					

Floral Inventory: FODM7-4 (ELC Community 8a) and SWDM4-6 (ELC Community 8b)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Acalypha virginica var. rhomboidea	Three-seeded Mercury			S5	TRUE	FALSE
Acer negundo	Manitoba Maple			S5	TRUE	FALSE
Acer x freemanii	Freeman's Maple			SNA	TRUE	FALSE
Agalinis tenuifolia var. tenuifolia	Slender-leaved Agalinis			S4S5	TRUE	FALSE
Agrimonia gryposepala	Tall Hairy Agrimony			S5	TRUE	FALSE
Agrostis gigantea	Redtop			SE5	TRUE	FALSE
Ailanthus altissima	Tree-of-heaven			SE5	TRUE	FALSE
Ambrosia trifida	Great Ragweed			S5	TRUE	FALSE
Anemone virginiana var. virginiana	Virginia Anemone			S5	TRUE	FALSE
Arctium minus ssp. minus	Lesser Burdock			SE5	TRUE	FALSE
Arisaema triphyllum ssp. triphyllum	Jack-in-the-pulpit			S5	TRUE	FALSE
Aster lanceolatus ssp. lanceolatus	Panicled Aster			S5	TRUE	FALSE
Aster lateriflorus var. lateriflorus	Calico Aster			S5	TRUE	FALSE
Aster novae-angliae	New England Aster			S5	TRUE	FALSE
Aster umbellatus var. umbellatus	Flat-topped White Aster			S5	TRUE	FALSE
Bidens frondosa	Devil's Beggar's Ticks			S5	TRUE	FALSE
Calamagrostis canadensis	Blue-joint Reedgrass			S5	TRUE	FALSE
Carex granularis	Meadow Sedge			S5	TRUE	FALSE
Carex rosea	Rosy Sedge			S5	TRUE	FALSE
Carya glabra	Pignut Hickory			S3	TRUE	FALSE
Celastrus scandens	Climbing Bittersweet			S5	TRUE	FALSE
Celtis occidentalis	Common Hackberry			S4	TRUE	FALSE
Cicuta maculata	Spotted Water-hemlock			S5	TRUE	FALSE
Circaea lutetiana ssp. canadensis	Enchanter's Nightshade			S5	TRUE	FALSE
Cirsium discolor	Field Thistle			S3	TRUE	FALSE
Cornus amomum ssp. obliqua	Silky Dogwood			S5	TRUE	FALSE
Cornus drummondii	Rough-leaved Dogwood			S4	TRUE	FALSE
Dactylis glomerata	Orchard Grass			SE5	TRUE	FALSE
Danthonia spicata	Poverty Oat-grass			S5	TRUE	FALSE
Dianthus armeria	Deptford-pink			SE5	TRUE	FALSE
Elaeagnus umbellata	Autumn Olive			SE3	TRUE	FALSE
Erigeron annuus	White-top Fleabane			S5	TRUE	FALSE
Eupatorium altissimum	Tall Boneset			S1	TRUE	FALSE
Eupatorium perfoliatum	Common Boneset			S5	TRUE	FALSE
Euphorbia corollata	Flowering Spurge			S4	TRUE	FALSE
Euthamia graminifolia	Grass-leaved Goldenrod			S5	TRUE	FALSE
Festuca arundinacea	Kentucky Fescue			SE5	TRUE	FALSE
Fraxinus pennsylvanica	Green Ash			S5	TRUE	FALSE
Galium asprellum	Rough Bedstraw			S5	TRUE	FALSE
Geum canadense	White Avens			S5	TRUE	FALSE
Geum laciniatum	Rough Avens			S4	TRUE	FALSE
Glyceria striata	Fowl Manna Grass			S5	TRUE	FALSE
Hackelia virginiana	Virginia Stickseed			S5	TRUE	FALSE
Heliopsis helianthoides	Ox-eye			S5	TRUE	FALSE
Iris virginica	Virginia Blue Flag			S5	TRUE	FALSE
Juglans nigra	Black Walnut			S4	TRUE	FALSE
Juncus dudleyi	Dudley's Rush			S5	TRUE	FALSE
Juncus torreyi	Torrey's Rush			S5	TRUE	FALSE
Lactuca biennis	Tall Blue Lettuce			S5	TRUE	FALSE
Leersia oryzoides	Rice Cutgrass			S5	TRUE	FALSE
Leersia virginica	White Cutgrass			S4	TRUE	FALSE
Ligustrum vulgare	European Privet			SE5	TRUE	FALSE
Lobelia siphilitica	Great Blue Lobelia			S5	TRUE	FALSE
Lobelia spicata	Pale-spiked Lobelia			S4	TRUE	FALSE
Lonicera japonica	Japanese Honeysuckle			SE2	TRUE	FALSE
Lonicera maackii	Amur Honeysuckle			SE2	TRUE	FALSE
Lonicera tatarica	Tartarian Honeysuckle			SE5	TRUE	FALSE
Lycopus americanus	American Bugleweed			S5	TRUE	FALSE

Floral Inventory: FODM7-4 (ELC Community 8a) and SWDM4-6 (ELC Community 8b)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Lysimachia quadriflora	Four-flowered Loosestrife			S4	TRUE	FALSE
Menispermum canadense	Canada Moonseed			S4	TRUE	FALSE
Monarda fistulosa	Wild Bergamot			S5	TRUE	FALSE
Morus alba	White Mulberry			SE5	TRUE	FALSE
Osmorhiza longistylis	Smooth Sweet-cicely			S5	TRUE	FALSE
Oxalis stricta	Upright Yellow Wood Sorrel			S5	TRUE	FALSE
Panicum acuminatum var. acuminatum	Acuminate Panic Grass			S5	TRUE	FALSE
Panicum latifolium	Broad-leaf Panic Grass			S4	TRUE	FALSE
Parthenocissus inserta	Thicket Creeper			S5	TRUE	FALSE
Parthenocissus quinquefolia	Virginia Creeper			S4?	TRUE	FALSE
Penstemon digitalis	Foxglove Beardtongue			S4S5	TRUE	FALSE
Phalaris arundinacea	Reed Canary Grass			S5	TRUE	FALSE
Phragmites australis	Common Reed			S5	TRUE	FALSE
Phryma leptostachya	Lopseed			S4S5	TRUE	FALSE
Physalis heterophylla	Clammy Ground-cherry			S4	TRUE	FALSE
Physocarpus opulifolius	Eastern Ninebark			S5	TRUE	FALSE
Phytolacca americana	Common Pokeweed			S4	TRUE	FALSE
Pilea pumila	Canada Clearweed			S5	TRUE	FALSE
Plantago rugelii	Black-seed Plantain			S5	TRUE	FALSE
Poa compressa	Canada Bluegrass			S5	TRUE	FALSE
Poa pratensis ssp. pratensis	Kentucky Bluegrass			S5	TRUE	FALSE
Polygonum lapathifolium	Dock-leaf Smartweed			S5	TRUE	FALSE
Polygonum persicaria	Lady's Thumb			SE5	TRUE	FALSE
Polygonum virginianum	Virginia Knotweed			S4	TRUE	FALSE
Populus alba	White Poplar			SE5	TRUE	FALSE
Populus deltoides ssp. deltoides	Eastern Cottonwood			SU	TRUE	FALSE
Prunella vulgaris ssp. lanceolata	Self-heal			S5	TRUE	FALSE
Prunus serotina	Wild Black Cherry			S5	TRUE	FALSE
Ratibida pinnata	Gray-headed Coneflower			S3	TRUE	FALSE
Rhus glabra	Smooth Sumac			S5	TRUE	FALSE
Rhus radicans ssp. negundo	Poison Ivy			S5	TRUE	FALSE
Rhus radicans ssp. rydbergii	Western Poison Ivy			S5	TRUE	FALSE
Rhus typhina	Staghorn Sumac			S5	TRUE	FALSE
Robinia pseudo-acacia	Black Locust			SE5	TRUE	FALSE
Rosa multiflora	Rambler Rose			SE4	TRUE	FALSE
Rubus allegheniensis	Allegheny Blackberry			S5	TRUE	FALSE
Rubus flagellaris	Northern Dewberry			S4	TRUE	FALSE
Rubus occidentalis	Black Raspberry			S5	TRUE	FALSE
Rudbeckia hirta	Black-eyed Susan			S5	TRUE	FALSE
Sanicula marilandica	Black Snakeroot			S5	TRUE	FALSE
Scirpus pendulus	Pendulous Bulrush			S5	TRUE	FALSE
Scutellaria lateriflora	Mad Dog Skullcap			S5	TRUE	FALSE
Smilax hispida	Hispid Greenbrier			S4	TRUE	FALSE
Smilax lasioneura	Herbaceous Greenbrier			S4	TRUE	FALSE
Solanum dulcamara	Climbing Nightshade			SE5	TRUE	FALSE
Solidago altissima var. altissima	Tall Goldenrod			S5	TRUE	FALSE
Solidago canadensis	Canada Goldenrod			S5	TRUE	FALSE
Solidago rugosa ssp. rugosa	Rough Goldenrod			S5	TRUE	FALSE
Ulmus americana	American Elm			S5	TRUE	FALSE
Urtica dioica ssp. dioica	Stinging Nettle			SE2	TRUE	FALSE
Verbena hastata	Blue Vervain			S5	TRUE	FALSE
Verbena urticifolia	White Vervain			S5	TRUE	FALSE
Vernonia missurica	Ironweed			S3?	TRUE	FALSE
Veronicastrum virginicum	Culver's-root			S2	TRUE	FALSE
Viburnum trilobum	Highbush Cranberry			S5	TRUE	FALSE
Viola sororia	Woolly Blue Violet			S5	TRUE	FALSE
Vitis riparia	Riverbank Grape			S5	TRUE	FALSE
Zanthoxylum americanum	Northern Prickly Ash			S5	TRUE	FALSE

Floral Inventory: SWDM4-6 (ELC Community 9a) and SWDM1-1 (ELC Community 9b)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Acer negundo	Manitoba Maple			S5	TR	Y
Acer rubrum	Red Maple			S5	TR	
Acer x freemanii	Freeman's Maple			SNA	TR	
Agrimonia gryposepala	Tall Hairy Agrimony			S5	FO	
Agrostis gigantea	Redtop			SE5	GR	
Ailanthus altissima	Tree-of-heaven			SE5	TR	Y
Ambrosia trifida	Great Ragweed			S5	FO	
Amphicarpaea bracteata	Hog-peanut			S5	VI	
Anemone canadensis	Canada Anemone			S5	FO	
Anemone virginiana var. virginiana	Virginia Anemone			S5	FO	
Apocynum cannabinum var. cannabinum	Clasping-leaf Dogbane			S5	FO	
Aralia nudicaulis	Wild Sarsaparilla			S5	FO	
Asparagus officinalis	Asparagus			SE5	FO	
Aster ericoides ssp. ericoides	Heath Aster			S5	FO	
Aster lanceolatus ssp. lanceolatus	Panicled Aster			S5	FO	
Aster lateriflorus var. lateriflorus	Calico Aster			S5	FO	
Aster novae-angliae	New England Aster			S5	FO	
Aster praealtus var. praealtus	Willow Aster	THR	THR	S2	FO	
Aster umbellatus var. umbellatus	Flat-topped White Aster			S5	FO	
Aster urophyllus	Arrow-leaved Aster			S4	FO	
Athyrium filix-femina var. angustum	Lady-fern			S5	FE	
Berberis vulgaris	European Barberry			SE5	SH	
Boehmeria cylindrica	False Nettle			S5	FO	
Bromus inermis ssp. inermis	Smooth Brome			SE5	GR	
Campanula rapunculoides	Creeping Bellflower			SE5	FO	
Cardamine pensylvanica	Pennsylvania Bitter-cress			S5	FO	
Carex granularis	Meadow Sedge			S5	SE	
Carex rosea	Rosy Sedge			S5	SE	
Carex tenera	Slender Sedge			S5	SE	
Carya cordiformis	Bitternut Hickory			S5	TR	
Carya glabra	Pignut Hickory			S3	TR	
Carya ovata var. ovata	Shagbark Hickory			S5	TR	
Celastrus orbiculatus	Climbing Bittersweet			SE2	VW	Y
Celastrus scandens	Climbing Bittersweet			S5	VW	
Celtis occidentalis	Common Hackberry			S4	TR	
Chrysanthemum leucanthemum	Oxeye Daisy			SE5	FO	
Cichorium intybus	Chicory			SE5	FO	
Cicuta maculata	Spotted Water-hemlock			S5	FO	
Circaea lutetiana ssp. canadensis	Enchanter's Nightshade			S5	FO	
Cirsium arvense	Crepping Thistle			SE5	FO	Y
Cirsium discolor	Field Thistle			S3	FO	
Convallaria majalis	European Lily-of-the-valley			SE5	FO	
Conyza canadensis	Fleabane			S5	FO	
Cornus amomum ssp. obliqua	Silky Dogwood			S5	SH	
Cornus drummondii	Rough-leaved Dogwood			S4	SH	
Cornus foemina ssp. racemosa	Gray Dogwood			S5	SH	
Corylus americana	American Hazelnut			S5	SH	
Crataegus mollis	Downy Hawthorn			S5	SH	
Crataegus monogyna	English Hawthorn			SE5	SH	
Cryptotaenia canadensis	Canada Honewort			S5	FO	
Dactylis glomerata	Orchard Grass			SE5	GR	
Desmodium glutinosum	Pointed-leaved Tick-trefoil			S4	FO	
Dianthus armeria	Deptford-pink			SE5	FO	
Dioscorea quaternata	Fourleaf Wild-yam			S4	VI	
Equisetum arvense	Field Horsetail			S5	FE	
Equisetum pratense	Meadow Horsetail			S5	FE	
Erigeron annuus	White-top Fleabane			S5	FO	
Erigeron philadelphicus ssp. philadelphicus	Philadelphia Fleabane			S5	FO	

Floral Inventory: SWDM4-6 (ELC Community 9a) and SWDM1-1 (ELC Community 9b)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Eupatorium altissimum	Tall Boneset			S1	FO	
Eupatorium maculatum ssp. maculatum	Spotted Joe-pye Weed			S5	FO	
Euphorbia corollata	Flowering Spurge			S4	FO	
Euthamia graminifolia	Grass-leaved Goldenrod			S5	FO	
Euthamia gymnospermoides	Flat-topped Goldenrod			S1	FO	
Fraxinus pennsylvanica	Green Ash			S5	TR	
Galium palustre	Marsh Bedstraw			S5	FO	
Geranium maculatum	Wild Geranium			S5	FO	
Geum canadense	White Avens			S5	FO	
Gleditsia triacanthos	Honey Locust			S2	TR	
Glyceria striata	Fowl Manna Grass			S5	GR	
Hackelia virginiana	Virginia Stickseed			S5	FO	
Hamamelis virginiana	American Witch-hazel			S5	SH	
Hypericum perforatum	St. John's-wort			SE5	FO	
Iris virginica	Virginia Blue Flag			S5	FO	
Juncus dudleyi	Dudley's Rush			S5	RU	
Juniperus virginiana	Eastern Red Cedar			S5	TR	
Leersia virginica	White Cutgrass			S4	GR	
Leonurus cardiaca ssp. cardiaca	Common Motherwort			SE5	FO	
Lespedeza capitata	Round-head Bushclover			S4	FO	
Ligustrum vulgare	European Privet			SE5	SH	
Linaria vulgaris	Butter-and-eggs			SE5	FO	
Lobelia siphilitica	Great Blue Lobelia			S5	FO	
Lonicera japonica	Japanese Honeysuckle			SE2	VW	Y
Lonicera maackii	Amur Honeysuckle			SE2	SH	Y
Maianthemum racemosum ssp. racemosum	False Solomon's Seal			S5	FO	
Maianthemum stellatum	Starflower False Solomon's Seal			S5	FO	
Malus coronaria	Sweet Crab-apple			S4	SH	
Menispermum canadense	Canada Moonseed			S4	VI	
Mentha spicata	Spearmint			SE4	FO	
Monarda fistulosa	Wild Bergamot			S5	FO	
Morus alba	White Mulberry			SE5	TR	Y
Oenothera biennis	Common Evening-primrose			S5	FO	
Onoclea sensibilis	Sensitive Fern			S5	FE	
Osmorhiza longistylis	Smooth Sweet-cicely			S5	FO	
Osmunda claytoniana	Interrupted Fern			S5	FE	
Osmunda regalis var. spectabilis	Royal Fern			S5	FE	
Oxalis stricta	Upright Yellow Wood Sorrel			S5	FO	
Panicum acuminatum var. acuminatum	Acuminate Panic Grass			S5	GR	
Parthenocissus inserta	Thicket Creeper			S5	VW	
Penstemon digitalis	Foxglove Beardtongue			S4S5	FO	
Phragmites australis	Common Reed			S5	GR	Y
Phryma leptostachya	Lopseed			S4S5	FO	
Physalis heterophylla	Clammy Ground-cherry			S4	FO	
Plantago lanceolata	English Plantain			SE5	FO	
Platanus occidentalis	Sycamore			S4	TR	
Poa pratensis ssp. pratensis	Kentucky Bluegrass			S5	GR	Y
Podophyllum peltatum	May Apple			S5	FO	
Polygonum virginianum	Virginia Knotweed			S4	FO	
Populus deltoides ssp. deltoides	Eastern Cottonwood			SU	TR	
Populus grandidentata	Large-tooth Aspen			S5	TR	
Potentilla recta	Sulphur Cinquefoil			SE5	FO	
Prunella vulgaris ssp. lanceolata	Self-heal			S5	FO	
Prunus americana	American Plum			S4	TR	
Prunus serotina	Wild Black Cherry			S5	TR	
Prunus virginiana ssp. virginiana	Choke Cherry			S5	TR	
Pteridium aquilinum var. latiusculum	Bracken Fern			S5	FE	
Pycnanthemum virginianum	Virginia Mountain-mint			S4	FO	

Floral Inventory: SWDM4-6 (ELC Community 9a) and SWDM1-1 (ELC Community 9b)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Quercus bicolor	Swamp White Oak			S4	TR	
Quercus palustris	Pin Oak			S4	TR	
Quercus shumardii	Shumard's Oak	SC	SC	S3	TR	
Quercus velutina	Black Oak			S4	TR	
Ranunculus hispidus var. hispidus	Bristly Buttercup			S3	FO	
Ranunculus sceleratus var. sceleratus	Cursed Crowfoot			S5	FO	
Rhamnus cathartica	Buckthorn			SE5	SH	Y
Rhus glabra	Smooth Sumac			S5	SH	
Rhus radicans ssp. negundo	Poison Ivy			S5	VW	
Rhus radicans ssp. rydbergii	Western Poison Ivy			S5	SH	
Rhus x pulvinata	Hybrid Sumac			S2?	SH	
Ribes americanum	Wild Black Currant			S5	SH	
Robinia pseudo-acacia	Black Locust			SE5	TR	Y
Rosa carolina	Carolina Rose			S4	SH	
Rosa multiflora	Rambler Rose			SE4	SH	Y
Rosa setigera	Climbing Prairie Rose	SC	SC	S3	SH	
Rubus allegheniensis	Allegheny Blackberry			S5	SH	
Rubus flagellaris	Northern Dewberry			S4	SH	
Rubus occidentalis	Black Raspberry			S5	SH	
Rudbeckia hirta	Black-eyed Susan			S5	FO	
Rumex obtusifolius ssp. obtusifolius	Bitter Dock			SE5	FO	
Sambucus canadensis	Common Elderberry			S5	SH	
Sanicula marilandica	Black Snakeroot			S5	FO	
Sassafras albidum	Sassafras			S4	TR	
Scirpus atrovirens	Woolgrass Bulrush			S5	SE	
Smilax ecirrhata	Upright Greenbrier			S3?	FO	
Smilax hispida	Hispid Greenbrier			S4	VW	
Smilax lasioneura	Herbaceous Greenbrier			S4	VI	
Solanum dulcamara	Climbing Nightshade			SE5	VW	
Solidago altissima var. altissima	Tall Goldenrod			S5	FO	
Solidago canadensis	Canada Goldenrod			S5	FO	
Solidago gigantea	Smooth Goldenrod			S5	FO	
Solidago juncea	Early Goldenrod			S5	FO	
Solidago sempervirens	Seaside Goldenrod			SE2	FO	
Sonchus arvensis ssp. arvensis	Field Sowthistle			SE5	FO	
Thalictrum dasycarpum	Purple Meadowrue			S4?	FO	
Thalictrum dioicum	Early Meadowrue			S5	FO	
Tilia americana	American Basswood			S5	TR	
Tussilago farfara	Colt's Foot			SE5	FO	
Ulmus americana	American Elm			S5	TR	
Verbascum blattaria	White Moth Mullein			SE5	FO	
Verbena urticifolia	White Vervain			S5	FO	
Vernonia missurica	Ironweed			S3?	FO	
Veronicastrum virginicum	Culver's-root			S2	FO	
Viburnum lentago	Nannyberry			S5	SH	
Viburnum trilobum	Highbush Cranberry			S5	SH	
Vitis aestivalis	Summer Grape			S4	VW	
Vitis riparia	Riverbank Grape			S5	VW	
Xanthium strumarium	Rough Cockle-bur			S5	FO	
Zanthoxylum americanum	Northern Prickly Ash			S5	SH	
Carya glabra X cordiformis	Pignut X Bitternut					

Floral Inventory: WODM5-1 (ELC Community 10a) and WODM6 (ELC Community 10b)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Acalypha virginica var. rhomboidea	Three-seeded Mercury			S5	FO	
Acer negundo	Manitoba Maple			S5	TR	Y
Achillea millefolium ssp. millefolium	Common Yarrow			SE	FO	
Agrimonia gryposepala	Tall Hairy Agrimony			S5	FO	
Ailanthus altissima	Tree-of-heaven			SE5	TR	Y
Alisma plantago-aquatica	Broad-leaved Water-plantain			S5	FO	
Andropogon gerardii	Big Bluestem			S4	GR	
Anemone virginiana var. virginiana	Virginia Anemone			S5	FO	
Arctium minus ssp. minus	Lesser Burdock			SE5	FO	
Asclepias syriaca	Common Milkweed			S5	FO	
Asclepias tuberosa	Butterfly Milkweed			S4	FO	
Aster laevis var. laevis	Smooth Blue Aster			S5	FO	
Aster lateriflorus var. lateriflorus	Calico Aster			S5	FO	
Aster novae-angliae	New England Aster			S5	FO	
Aster praealtus var. praealtus	Willow Aster	THR	THR	S2	FO	
Aster umbellatus var. umbellatus	Flat-topped White Aster			S5	FO	
Berteroa incana	Hoary False-alyssum			SE5	FO	
Bidens frondosa	Devil's Beggar's Ticks			S5	FO	
Campanula americana	Tall Bellflower			S4	FO	
Carya cordiformis	Bitternut Hickory			S5	TR	
Carya glabra	Pignut Hickory			S3	TR	
Carya ovata var. ovata	Shagbark Hickory			S5	TR	
Celastrus orbiculatus	Climbing Bittersweet			SE2	VW	Y
Centaurium pulchellum	Branching Centaury-plant			SE3	FO	
Cichorium intybus	Chicory			SE5	FO	
Cicuta maculata	Spotted Water-hemlock			S5	FO	
Cirsium discolor	Field Thistle			S3	FO	
Conyza canadensis	Fleabane			S5	FO	
Cornus amomum ssp. obliqua	Silky Dogwood			S5	SH	
Cornus drummondii	Rough-leaved Dogwood			S4	SH	
Cornus foemina ssp. racemosa	Gray Dogwood			S5	SH	
Cornus stolonifera	Red-osier Dogwood			S5	SH	
Corylus americana	American Hazelnut			S5	SH	
Crataegus mollis	Downy Hawthorn			S5	SH	
Dactylis glomerata	Orchard Grass			SE5	GR	
Daucus carota	Queen Anne's Lace			SE5	FO	
Desmodium canadense	Showy Tick-trefoil			S4	FO	
Desmodium paniculatum var. paniculatum	Panicled Tick-trefoil			S4	FO	
Eragrostis spectabilis	Purple Love Grass			S4	GR	
Erigeron annuus	White-top Fleabane			S5	FO	
Euonymus fortunei	Winter-creeper			SE1	SH	
Eupatorium altissimum	Tall Boneset			S1	FO	
Eupatorium maculatum ssp. maculatum	Spotted Joe-pye Weed			S5	FO	
Euphorbia corollata	Flowering Spurge			S4	FO	
Euthamia graminifolia	Grass-leaved Goldenrod			S5	FO	
Fraxinus pennsylvanica	Green Ash			S5	TR	
Galium asprellum	Rough Bedstraw			S5	FO	
Geum canadense	White Avens			S5	FO	
Glyceria striata	Fowl Manna Grass			S5	GR	
Helianthus divaricatus	Woodland Sunflower			S5	FO	
Juglans nigra	Black Walnut			S4	TR	
Juncus dudleyi	Dudley's Rush			S5	RU	
Leersia virginica	White Cutgrass			S4	GR	
Lespedeza capitata	Round-head Bushclover			S4	FO	
Liatris spicata	Spiked Blazing Star	THR	THR	S3	FO	
Lonicera maackii	Amur Honeysuckle			SE2	SH	Y
Lycopus americanus	American Bugleweed			S5	FO	
Lythrum alatum	Winged Loosestrife			S3	FO	

Floral Inventory: WODM5-1 (ELC Community 10a) and WODM6 (ELC Community 10b)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Lythrum salicaria	Slender-spike Loosestrife			SE5	FO	Y
Maianthemum racemosum ssp. racemosum	False Solomon's Seal			S5	FO	
Maianthemum stellatum	Starflower False Solomon's Seal			S5	FO	
Malus coronaria	Sweet Crab-apple			S4	SH	
Melilotus alba	White Sweet Clover			SE5	FO	Y
Menispermum canadense	Canada Moonseed			S4	VI	
Monarda fistulosa	Wild Bergamot			S5	FO	
Osmorhiza longistylis	Smooth Sweet-cicely			S5	FO	
Oxalis stricta	Upright Yellow Wood Sorrel			S5	FO	
Panicum virgatum	Switch Grass			S4	GR	
Parthenocissus inserta	Thicket Creeper			S5	VW	
Phryma leptostachya	Lopseed			S4S5	FO	
Plantago major	Nipple-seed Plantain			SE5	FO	
Plantago rugelii	Black-seed Plantain			S5	FO	
Poa compressa	Canada Bluegrass			S5	GR	
Populus deltoides ssp. deltoides	Eastern Cottonwood			SU	TR	
Prunus americana	American Plum			S4	TR	
Prunus serotina	Wild Black Cherry			S5	TR	
Prunus virginiana ssp. virginiana	Choke Cherry			S5	TR	
Pycnanthemum virginianum	Virginia Mountain-mint			S4	FO	
Quercus velutina	Black Oak			S4	TR	
Ratibida pinnata	Gray-headed Coneflower			S3	FO	
Rhamnus cathartica	Buckthorn			SE5	SH	Y
Rhus radicans ssp. negundo	Poison Ivy			S5	VW	
Rhus radicans ssp. rydbergii	Western Poison Ivy			S5	SH	
Rhus typhina	Staghorn Sumac			S5	SH	
Ribes americanum	Wild Black Currant			S5	SH	
Robinia pseudo-acacia	Black Locust			SE5	TR	Y
Rosa multiflora	Rambler Rose			SE4	SH	Y
Rudbeckia hirta	Black-eyed Susan			S5	FO	
Sanicula marilandica	Black Snakeroot			S5	FO	
Saponaria officinalis	Bouncing-bet			SE5	FO	
Smilax ecirrhata	Upright Greenbrier			S3?	FO	
Smilax lasioneura	Herbaceous Greenbrier			S4	VI	
Solidago altissima var. altissima	Tall Goldenrod			S5	FO	
Solidago canadensis	Canada Goldenrod			S5	FO	
Solidago gigantea	Smooth Goldenrod			S5	FO	
Sorghastrum nutans	Yellow Indian-grass			S4	GR	
Sporobolus asper	Longleaf Dropseed			S4	GR	
Taraxacum officinale	Common Dandelion			SE5	FO	
Ulmus americana	American Elm			S5	TR	
Verbascum thapsus	Common Mullein			SE5	FO	
Verbena urticifolia	White Vervain			S5	FO	
Viburnum lentago	Nannyberry			S5	SH	
Viburnum trilobum	Highbush Cranberry			S5	SH	
Vitis riparia	Riverbank Grape			S5	VW	
Zanthoxylum americanum	Northern Prickly Ash			S5	SH	
Morus alba X rubra	White X red mulberry					

Floral Inventory: FODM7-7 (ELC Community 11a), WODM5-3 (11b), and MEMM3 (11c)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Acer negundo	Manitoba Maple			S5	TR	Y
Achillea millefolium ssp. millefolium	Common Yarrow			SE	FO	
Agrimonia gryposepala	Tall Hairy Agrimony			S5	FO	
Agrostis gigantea	Redtop			SE5	GR	
Agrostis scabra	Rough Bentgrass			S5	GR	
Alliaria petiolata	Garlic Mustard			SE5	FO	Y
Ambrosia artemisiifolia	Annual Ragweed			S5	FO	
Ambrosia trifida	Great Ragweed			S5	FO	
Anemone canadensis	Canada Anemone			S5	FO	
Anemone virginiana var. virginiana	Virginia Anemone			S5	FO	
Apios americana	American Groundnut			S5	VI	
Artemisia vulgaris	Mugwort			SE5	FO	
Asclepias syriaca	Common Milkweed			S5	FO	
Asparagus officinalis	Asparagus			SE5	FO	
Aster ericoides ssp. ericoides	Heath Aster			S5	FO	
Aster lanceolatus ssp. lanceolatus	Panicled Aster			S5	FO	
Aster pilosus var. pilosus	Hairy Aster			S5	FO	
Aster praealtus var. praealtus	Willow Aster	THR	THR	S2	FO	
Aster urophyllus	Arrow-leaved Aster			S4	FO	
Berberis vulgaris	European Barberry			SE5	SH	
Bidens frondosa	Devil's Beggar's Ticks			S5	FO	
Bromus inermis ssp. inermis	Smooth Brome			SE5	GR	
Calamagrostis canadensis	Blue-joint Reedgrass			S5	GR	
Carex granularis	Meadow Sedge			S5	SE	
Carya glabra	Pignut Hickory			S3	TR	
Celastrus orbiculatus	Climbing Bittersweet			SE2	VW	Y
Celastrus scandens	Climbing Bittersweet			S5	VW	
Celtis occidentalis	Common Hackberry			S4	TR	
Centaurea maculosa	Spotted Knapweed			SE5	FO	
Centaurium pulchellum	Branching Centaury-plant			SE3	FO	
Chelone glabra	Turtlehead			S5	FO	
Chenopodium album var. album	White Goosefoot			SE5	FO	
Cichorium intybus	Chicory			SE5	FO	
Cirsium arvense	Crepping Thistle			SE5	FO	Y
Cirsium discolor	Field Thistle			S3	FO	
Cirsium vulgare	Bull Thistle			SE5	FO	
Clematis virginiana	Virginia Virgin-bower			S5	VI	
Convolvulus arvensis	Field Bindweed			SE5	VI	
Conyza canadensis	Fleabane			S5	FO	
Cornus amomum ssp. obliqua	Silky Dogwood			S5	SH	
Cornus drummondii	Rough-leaved Dogwood			S4	SH	
Cornus foemina ssp. racemosa	Gray Dogwood			S5	SH	
Coronilla varia	Crown-vetch			SE5	FO	Y
Crataegus monogyna	English Hawthorn			SE5	SH	
Crepis capillaris	Smooth Hawksbeard			SE1	FO	
Cyperus strigosus	Straw-colored Umbrella Sedge			S5	SE	
Dactylis glomerata	Orchard Grass			SE5	GR	
Daucus carota	Queen Anne's Lace			SE5	FO	
Desmodium glutinosum	Pointed-leaved Tick-trefoil			S4	FO	
Digitaria sanguinalis	Hairy Crabgrass			SE5	GR	
Dipsacus fullonum ssp. sylvestris	Common Teasel			SE5	FO	
Echinochloa crusgalli	Barnyard Grass			SE5	GR	
Elymus repens	Quack Grass			SE5	GR	
Elymus virginicus var. virginicus	Virginia Wild-rye			S5	GR	
Equisetum arvense	Field Horsetail			S5	FE	
Equisetum pratense	Meadow Horsetail			S5	FE	
Erigeron annuus	White-top Fleabane			S5	FO	
Eupatorium altissimum	Tall Boneset			S1	FO	

Floral Inventory: FODM7-7 (ELC Community 11a), WODM5-3 (11b), and MEMM3 (11c)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Eupatorium perfoliatum	Common Boneset			S5	FO	
Euthamia graminifolia	Grass-leaved Goldenrod			S5	FO	
Festuca arundinacea	Kentucky Fescue			SE5	GR	
Fragaria virginiana ssp. virginiana	Virginia Strawberry			SU	FO	
Fraxinus pennsylvanica	Green Ash			S5	TR	
Galium asprellum	Rough Bedstraw			S5	FO	
Galium circaezans	Wild Licorice			S5	FO	
Gaura biennis	Biennial Gaura			S3	FO	
Geum canadense	White Avens			S5	FO	
Glechoma hederacea	Ground Ivy			SE5	FO	
Gleditsia triacanthos	Honey Locust			S2	TR	
Lactuca serriola	Prickly Lettuce			SE5	FO	
Leersia virginica	White Cutgrass			S4	GR	
Leonurus cardiaca ssp. cardiaca	Common Motherwort			SE5	FO	
Ligustrum vulgare	European Privet			SE5	SH	
Linaria vulgaris	Butter-and-eggs			SE5	FO	
Lobelia siphilitica	Great Blue Lobelia			S5	FO	
Lonicera japonica	Japanese Honeysuckle			SE2	VW	Y
Lonicera maackii	Amur Honeysuckle			SE2	SH	Y
Lonicera tatarica	Tartarian Honeysuckle			SE5	SH	Y
Lotus corniculatus	Bird's-foot Trefoil			SE5	FO	Y
Maianthemum stellatum	Starflower False Solomon's Seal			S5	FO	
Malus baccata	Siberian Crabapple			SE1	SH	
Malus coronaria	Sweet Crab-apple			S4	SH	
Malus pumila	Common Apple			SE5	SH	
Medicago sativa ssp. sativa	Alfalfa			SE5	FO	
Menispermum canadense	Canada Moonseed			S4	VI	
Monarda fistulosa	Wild Bergamot			S5	FO	
Morus alba	White Mulberry			SE5	TR	Y
Nepeta cataria	Catnip			SE5	FO	
Onoclea sensibilis	Sensitive Fern			S5	FE	
Panicum capillare	Old Panic Grass			S5	GR	
Panicum dichotomiflorum	Spreading Panic Grass			SE5	GR	
Panicum virgatum	Switch Grass			S4	GR	
Parthenocissus inserta	Thicket Creeper			S5	VW	
Penstemon digitalis	Foxglove Beardtongue			S4S5	FO	
Phalaris arundinacea	Reed Canary Grass			S5	GR	
Phragmites australis	Common Reed			S5	GR	Y
Phryma leptostachya	Lopseed			S4S5	FO	
Physalis heterophylla	Clammy Ground-cherry			S4	FO	
Phytolacca americana	Common Pokeweed			S4	FO	
Plantago lanceolata	English Plantain			SE5	FO	
Plantago major	Nipple-seed Plantain			SE5	FO	
Platanus occidentalis	Sycamore			S4	TR	
Poa compressa	Canada Bluegrass			S5	GR	
Poa pratensis ssp. pratensis	Kentucky Bluegrass			S5	GR	Y
Podophyllum peltatum	May Apple			S5	FO	
Polygonum virginianum	Virginia Knotweed			S4	FO	
Populus deltoides ssp. deltoides	Eastern Cottonwood			SU	TR	
Potentilla anserina ssp. anserina	Silverweed			S5	FO	
Prunella vulgaris ssp. lanceolata	Self-heal			S5	FO	
Prunus serotina	Wild Black Cherry			S5	TR	
Pycnanthemum virginianum	Virginia Mountain-mint			S4	FO	
Quercus bicolor	Swamp White Oak			S4	TR	
Ranunculus sceleratus var. sceleratus	Cursed Crowfoot			S5	FO	
Ratibida pinnata	Gray-headed Coneflower			S3	FO	
Rhamnus cathartica	Buckthorn			SE5	SH	Y
Rhus radicans ssp. rydbergii	Western Poison Ivy			S5	SH	

Floral Inventory: FODM7-7 (ELC Community 11a), WODM5-3 (11b), and MEMM3 (11c)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Rhus typhina	Staghorn Sumac			S5	SH	
Rhus x pulvinata	Hybrid Sumac			S2?	SH	
Ribes americanum	Wild Black Currant			S5	SH	
Rosa multiflora	Rambler Rose			SE4	SH	Y
Rubus allegheniensis	Allegheny Blackberry			S5	SH	
Rubus idaeus ssp. melanolasius	Wild Red Raspberry			S5	SH	
Rudbeckia hirta	Black-eyed Susan			S5	FO	
Rumex crispus	Curly Dock			SE5	FO	
Salix exigua	Sandbar Willow			S5	SH	
Sanicula marilandica	Black Snakeroot			S5	FO	
Sassafras albidum	Sassafras			S4	TR	
Setaria pumila	Yellow Foxtail			SE5	GR	
Setaria viridis	Green Bristle Grass			SE5	GR	
Smilax lasioneura	Herbaceous Greenbrier			S4	VI	
Solanum dulcamara	Climbing Nightshade			SE5	VW	
Solidago altissima var. altissima	Tall Goldenrod			S5	FO	
Solidago canadensis	Canada Goldenrod			S5	FO	
Solidago gigantea	Smooth Goldenrod			S5	FO	
Solidago sempervirens	Seaside Goldenrod			SE2	FO	
Sonchus asper ssp. asper	Spiny-leaf Sowthistle			SE5	FO	
Sporobolus asper	Longleaf Dropseed			S4	GR	
Thalictrum pubescens	Tall Meadowrue			S5	FO	
Ulmus americana	American Elm			S5	TR	
Ulmus pumila	Siberian Elm			SE3	TR	Y
Verbascum thapsus	Common Mullein			SE5	FO	
Verbena hastata	Blue Vervain			S5	FO	
Verbena urticifolia	White Vervain			S5	FO	
Viburnum trilobum	Highbush Cranberry			S5	SH	
Viola sororia	Woolly Blue Violet			S5	FO	
Vitis riparia	Riverbank Grape			S5	VW	

Floral Inventory: WODM5 (ELC Community 12a and 12b), FODM8-3 (12c)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Acer negundo	Manitoba Maple			S5	TR	Y
Acer rubrum	Red Maple			S5	TR	
Acer x freemanii	Freeman's Maple			SNA	TR	
Achillea millefolium ssp. millefolium	Common Yarrow			SE	FO	
Agrimonia gryposepala	Tall Hairy Agrimony			S5	FO	
Alliaria petiolata	Garlic Mustard			SE5	FO	Y
Anemone virginiana var. virginiana	Virginia Anemone			S5	FO	
Apios americana	American Groundnut			S5	VI	
Apocynum androsaemifolium ssp. androsaemifolium	Spreading Dogbane			S5	FO	
Arctium minus ssp. minus	Lesser Burdock			SE5	FO	
Arisaema triphyllum ssp. triphyllum	Jack-in-the-pulpit			S5	FO	
Artemisia vulgaris	Mugwort			SE5	FO	
Asclepias purpurascens	Purple Milkweed			S2	FO	
Asclepias syriaca	Common Milkweed			S5	FO	
Asclepias tuberosa	Butterfly Milkweed			S4	FO	
Asparagus officinalis	Asparagus			SE5	FO	
Aster ericoides ssp. ericoides	Heath Aster			S5	FO	
Aster lanceolatus ssp. lanceolatus	Panicled Aster			S5	FO	
Aster lateriflorus var. lateriflorus	Calico Aster			S5	FO	
Aster novae-angliae	New England Aster			S5	FO	
Aster pilosus var. pilosus	Hairy Aster			S5	FO	
Aster praealtus var. praealtus	Willow Aster	THR	THR	S2	FO	
Aster umbellatus var. umbellatus	Flat-topped White Aster			S5	FO	
Aster urophyllus	Arrow-leaved Aster			S4	FO	
Bidens frondosa	Devil's Beggar's Ticks			S5	FO	
Calamagrostis canadensis	Blue-joint Reedgrass			S5	GR	
Cardamine pensylvanica	Pennsylvania Bitter-cress			S5	FO	
Carex granularis	Meadow Sedge			S5	SE	
Carya cordiformis	Bitternut Hickory			S5	TR	
Carya glabra	Pignut Hickory			S3	TR	
Carya ovata var. ovata	Shagbark Hickory			S5	TR	
Catalpa speciosa	Northern Catalpa			SE1	TR	
Chenopodium album var. album	White Goosefoot			SE5	FO	
Cichorium intybus	Chicory			SE5	FO	
Cicuta maculata	Spotted Water-hemlock			S5	FO	
Cirsium discolor	Field Thistle			S3	FO	
Clematis virginiana	Virginia Virgin-bower			S5	VI	
Clinopodium vulgare	Field Basil			S5	FO	
Commelina communis	Asiatic Dayflower			SE3	FO	
Conyza canadensis	Fleabane			S5	FO	
Cornus amomum ssp. obliqua	Silky Dogwood			S5	SH	
Cornus drummondii	Rough-leaved Dogwood			S4	SH	
Cornus foemina ssp. racemosa	Gray Dogwood			S5	SH	
Corylus americana	American Hazelnut			S5	SH	
Crataegus mollis	Downy Hawthorn			S5	SH	
Crataegus monogyna	English Hawthorn			SE5	SH	
Cyperus strigosus	Straw-colored Umbrella Sedge			S5	SE	
Dactylis glomerata	Orchard Grass			SE5	GR	
Daucus carota	Queen Anne's Lace			SE5	FO	
Desmodium canadense	Showy Tick-trefoil			S4	FO	
Desmodium glutinosum	Pointed-leaved Tick-trefoil			S4	FO	
Digitaria ischaemum	Smooth Crabgrass			SE5	GR	
Digitaria sanguinalis	Hairy Crabgrass			SE5	GR	
Dipsacus fullonum ssp. sylvestris	Common Teasel			SE5	FO	
Echinochloa crusgalli	Barnyard Grass			SE5	GR	
Elaeagnus umbellata	Autumn Olive			SE3	SH	Y
Epilobium coloratum	Purple-leaf Willow-herb			S5	FO	

Floral Inventory: WODM5 (ELC Community 12a and 12b), FODM8-3 (12c)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Equisetum arvense	Field Horsetail			S5	FE	
Eragrostis pectinacea var. pectinacea	Tufted Love Grass			S5	GR	
Eragrostis spectabilis	Purple Love Grass			S4	GR	
Erigeron annuus	White-top Fleabane			S5	FO	
Eupatorium altissimum	Tall Boneset			S1	FO	
Eupatorium maculatum ssp. maculatum	Spotted Joe-pye Weed			S5	FO	
Eupatorium perfoliatum	Common Boneset			S5	FO	
Euphorbia corollata	Flowering Spurge			S4	FO	
Euthamia graminifolia	Grass-leaved Goldenrod			S5	FO	
Fraxinus nigra	Black Ash			S5	TR	
Fraxinus pennsylvanica	Green Ash			S5	TR	
Galium asprellum	Rough Bedstraw			S5	FO	
Gaura biennis	Biennial Gaura			S3	FO	
Geranium maculatum	Wild Geranium			S5	FO	
Geum canadense	White Avens			S5	FO	
Gleditsia triacanthos	Honey Locust			S2	TR	
Glyceria striata	Fowl Manna Grass			S5	GR	
Hackelia virginiana	Virginia Stickseed			S5	FO	
Helenium autumnale	Common Sneezeweed			S5	FO	
Helianthus divaricatus	Woodland Sunflower			S5	FO	
Helianthus giganteus	Tall Sunflower			S5	FO	
Heliopsis helianthoides	Ox-eye			S5	FO	
Heracleum lanatum	Cow-parsnip			S5	FO	
Hypericum perforatum	St. John's-wort			SE5	FO	
Iris virginica	Virginia Blue Flag			S5	FO	
Lactuca serriola	Prickly Lettuce			SE5	FO	
Ligustrum vulgare	European Privet			SE5	SH	
Linaria vulgaris	Butter-and-eggs			SE5	FO	
Lobelia siphilitica	Great Blue Lobelia			S5	FO	
Lonicera japonica	Japanese Honeysuckle			SE2	VW	Y
Lonicera maackii	Amur Honeysuckle			SE2	SH	Y
Lonicera tatarica	Tartarian Honeysuckle			SE5	SH	Y
Lycopus americanus	American Bugleweed			S5	FO	
Lycopus uniflorus	Northern Bugleweed			S5	FO	
Maianthemum racemosum ssp. racemosum	False Solomon's Seal			S5	FO	
Maianthemum stellatum	Starflower False Solomon's Seal			S5	FO	
Malus coronaria	Sweet Crab-apple			S4	SH	
Malus pumila	Common Apple			SE5	SH	
Mentha arvensis ssp. borealis	Corn Mint			S5	FO	
Mimulus ringens	Square-stem Monkey-flower			S5	FO	
Morus alba	White Mulberry			SE5	TR	Y
Muhlenbergia mexicana var. mexicana	Mexican Satin Grass			S5	GR	
Oenothera biennis	Common Evening-primrose			S5	FO	
Onoclea sensibilis	Sensitive Fern			S5	FE	
Oxalis stricta	Upright Yellow Wood Sorrel			S5	FO	
Panicum virgatum	Switch Grass			S4	GR	
Parthenocissus inserta	Thicket Creeper			S5	VW	
Pastinaca sativa	Wild Parsnip			SE5	FO	
Phalaris arundinacea	Reed Canary Grass			S5	GR	
Phragmites australis	Common Reed			S5	GR	Y
Physalis heterophylla	Clammy Ground-cherry			S4	FO	
Plantago rugelii	Black-seed Plantain			S5	FO	
Platanus occidentalis	Sycamore			S4	TR	
Podophyllum peltatum	May Apple			S5	FO	
Polygonum persicaria	Lady's Thumb			SE5	FO	
Polygonum virginianum	Virginia Knotweed			S4	FO	
Populus deltoides ssp. deltoides	Eastern Cottonwood			SU	TR	
Portulaca oleracea	Common Purslane			SE5	FO	

Floral Inventory: WODM5 (ELC Community 12a and 12b), FODM8-3 (12c)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Prunus serotina	Wild Black Cherry			S5	TR	
Prunus virginiana ssp. virginiana	Choke Cherry			S5	TR	
Pycnanthemum virginianum	Virginia Mountain-mint			S4	FO	
Quercus alba	White Oak			S5	TR	
Quercus bicolor	Swamp White Oak			S4	TR	
Quercus palustris	Pin Oak			S4	TR	
Quercus velutina	Black Oak			S4	TR	
Rhamnus cathartica	Buckthorn			SE5	SH	Y
Rhus glabra	Smooth Sumac			S5	SH	
Ribes americanum	Wild Black Currant			S5	SH	
Robinia pseudo-acacia	Black Locust			SE5	TR	Y
Rosa blanda	Smooth Rose			S5	SH	
Rosa multiflora	Rambler Rose			SE4	SH	Y
Rubus allegheniensis	Allegheny Blackberry			S5	SH	
Rubus flagellaris	Northern Dewberry			S4	SH	
Rubus occidentalis	Black Raspberry			S5	SH	
Salix amygdaloides	Peach-leaved Willow			S5	TR	
Salix eriocephala	Heart-leaved Willow			S5	SH	
Sanicula marilandica	Black Snakeroot			S5	FO	
Saponaria officinalis	Bouncing-bet			SE5	FO	
Sassafras albidum	Sassafras			S4	TR	
Scirpus atrovirens	Woolgrass Bulrush			S5	SE	
Scirpus pendulus	Pendulous Bulrush			S5	SE	
Setaria faberi	Giant Foxtail			SE4	GR	
Setaria viridis	Green Bristle Grass			SE5	GR	
Sium suave	Hemlock Water-parsnip			S5	FO	
Smilax ecirrhata	Upright Greenbrier			S3?	FO	
Smilax hispida	Hispid Greenbrier			S4	VW	
Smilax lasioneura	Herbaceous Greenbrier			S4	VI	
Solidago altissima var. altissima	Tall Goldenrod			S5	FO	
Solidago canadensis	Canada Goldenrod			S5	FO	
Solidago rugosa ssp. rugosa	Rough Goldenrod			S5	FO	
Solidago sempervirens	Seaside Goldenrod			SE2	FO	
Sporobolus asper	Longleaf Dropseed			S4	GR	
Thalictrum dioicum	Early Meadowrue			S5	FO	
Thalictrum pubescens	Tall Meadowrue			S5	FO	
Tilia americana	American Basswood			S5	TR	
Typha angustifolia	Narrow-leaved Cattail			S5	FO	
Ulmus americana	American Elm			S5	TR	
Ulmus rubra	Slippery Elm			S5	TR	
Uvularia sessilifolia	Sessile-leaf Bellwort			S4	FO	
Verbascum blattaria	White Moth Mullein			SE5	FO	
Verbascum virgatum	Wand-like Mullein			SE1	FO	
Verbena hastata	Blue Vervain			S5	FO	
Verbena urticifolia	White Vervain			S5	FO	
Vernonia missurica	Ironweed			S3?	FO	
Viburnum trilobum	Highbush Cranberry			S5	SH	
Viola sororia	Woolly Blue Violet			S5	FO	
Vitis riparia	Riverbank Grape			S5	VW	
Zanthoxylum americanum	Northern Prickly Ash			S5	SH	
Salix matsudana	Corkscrew willow					

Floral Inventory: MEMM4 (ELC Community 13a) and MAMM6 (13b)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Acalypha virginica var. rhomboidea	Three-seeded Mercury			S5	FO	
Acer negundo	Manitoba Maple			S5	TR	Y
Achillea millefolium ssp. millefolium	Common Yarrow			SE	FO	
Agalinis tenuifolia var. tenuifolia	Slender-leaved Agalinis			S4S5	FO	
Agrimonia parviflora	Small-flower Agrimony			S4	FO	
Agrostis gigantea	Redtop			SE5	GR	
Alliaria petiolata	Garlic Mustard			SE5	FO	Y
Ambrosia artemisiifolia	Annual Ragweed			S5	FO	
Amphicarpaea bracteata	Hog-peanut			S5	VI	
Andropogon gerardii	Big Bluestem			S4	GR	
Anemone virginiana var. virginiana	Virginia Anemone			S5	FO	
Apios americana	American Groundnut			S5	VI	
Apocynum cannabinum var. cannabinum	Clasping-leaf Dogbane			S5	FO	
Asclepias sullivantii	Sullivant's Milkweed			S3	FO	
Asclepias syriaca	Common Milkweed			S5	FO	
Aster ericoides ssp. ericoides	Heath Aster			S5	FO	
Aster laevis var. laevis	Smooth Blue Aster			S5	FO	
Aster novae-angliae	New England Aster			S5	FO	
Aster pilosus var. pilosus	Hairy Aster			S5	FO	
Aster praealtus var. praealtus	Willow Aster	THR	THR	S2	FO	
Aster umbellatus var. umbellatus	Flat-topped White Aster			S5	FO	
Aster urophyllus	Arrow-leaved Aster			S4	FO	
Bidens frondosa	Devil's Beggar's Ticks			S5	FO	
Bidens tripartita	European Beggar's Ticks			S5	FO	
Calamagrostis canadensis	Blue-joint Reedgrass			S5	GR	
Calystegia sepium ssp. americanum	Hedge Bindweed			SU	FO	
Carex cristatella	Crested Sedge			S5	SE	
Carex granularis	Meadow Sedge			S5	SE	
Carya glabra	Pignut Hickory			S3	TR	
Carya ovata var. ovata	Shagbark Hickory			S5	TR	
Catalpa speciosa	Northern Catalpa			SE1	TR	
Celastrus scandens	Climbing Bittersweet			S5	VW	
Cenchrus longispinus	Long-spine Sandbur			S4	GR	
Chamaesyce glyptosperma	Corrugate-seed Broomspurge			SE5	FO	
Cichorium intybus	Chicory			SE5	FO	
Cirsium arvense	Crepping Thistle			SE5	FO	Y
Cirsium discolor	Field Thistle			S3	FO	
Cirsium vulgare	Bull Thistle			SE5	FO	
Clematis virginiana	Virginia Virgin-bower			S5	VI	
Commelina communis	Asiatic Dayflower			SE3	FO	
Conyza canadensis	Fleabane			S5	FO	
Coreopsis tripteris	Tall Coreopsis			S2	FO	
Cornus amomum ssp. obliqua	Silky Dogwood			S5	SH	
Cornus foemina ssp. racemosa	Gray Dogwood			S5	SH	
Corylus americana	American Hazelnut			S5	SH	
Cuscuta gronovii	Gronovius Dodder			S5	FO	
Cyperus lupulinus ssp. lupulinus	Slender Cyperus			SNA	SE	
Cyperus strigosus	Straw-colored Umbrella Sedge			S5	SE	
Dactylis glomerata	Orchard Grass			SE5	GR	
Daucus carota	Queen Anne's Lace			SE5	FO	
Desmodium canadense	Showy Tick-trefoil			S4	FO	
Desmodium glutinosum	Pointed-leaved Tick-trefoil			S4	FO	
Dianthus armeria	Deptford-pink			SE5	FO	
Dipsacus fullonum ssp. sylvestris	Common Teasel			SE5	FO	
Echium vulgare	Common Viper's-bugloss			SE5	FO	
Elaeagnus umbellata	Autumn Olive			SE3	SH	Y
Equisetum arvense	Field Horsetail			S5	FE	
Erigeron annuus	White-top Fleabane			S5	FO	

Floral Inventory: MEMM4 (ELC Community 13a) and MAMM6 (13b)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Eupatorium altissimum	Tall Boneset			S1	FO	
Eupatorium maculatum ssp. maculatum	Spotted Joe-pye Weed			S5	FO	
Eupatorium purpureum var. purpureum	Sweet Joe-pye-weed			S4	FO	
Euphorbia corollata	Flowering Spurge			S4	FO	
Euthamia graminifolia	Grass-leaved Goldenrod			S5	FO	
Fragaria virginiana ssp. virginiana	Virginia Strawberry			SU	FO	
Fraxinus pennsylvanica	Green Ash			S5	TR	
Galium asprellum	Rough Bedstraw			S5	FO	
Gaura biennis	Biennial Gaura			S3	FO	
Geum laciniatum	Rough Avens			S4	FO	
Gnaphalium obtusifolium	Fragrant Cudweed			S5	FO	
Hackelia virginiana	Virginia Stickseed			S5	FO	
Helianthus divaricatus	Woodland Sunflower			S5	FO	
Helianthus giganteus	Tall Sunflower			S5	FO	
Hypericum perforatum	St. John's-wort			SE5	FO	
Hypericum punctatum	Common St. John's-wort			S5	FO	
Juglans nigra	Black Walnut			S4	TR	
Juncus tenuis	Slender Rush			S5	RU	
Juncus torreyi	Torrey's Rush			S5	RU	
Juniperus virginiana	Eastern Red Cedar			S5	TR	
Lactuca biennis	Tall Blue Lettuce			S5	FO	
Leersia virginica	White Cutgrass			S4	GR	
Lemna minor	Lesser Duckweed			S5	FO	
Lepidium campestre	Field Pepper-grass			SE5	FO	
Linaria vulgaris	Butter-and-eggs			SE5	FO	
Lobelia siphilitica	Great Blue Lobelia			S5	FO	
Lycopus americanus	American Bugleweed			S5	FO	
Lycopus uniflorus	Northern Bugleweed			S5	FO	
Lysimachia ciliata	Fringed Loosestrife			S5	FO	
Lythrum alatum	Winged Loosestrife			S3	FO	
Lythrum salicaria	Slender-spike Loosestrife			SE5	FO	Y
Malus coronaria	Sweet Crab-apple			S4	SH	
Melilotus officinalis	Yellow Sweet Clover			SE5	FO	Y
Monarda fistulosa	Wild Bergamot			S5	FO	
Muhlenbergia mexicana var. mexicana	Mexican Satin Grass			S5	GR	
Oenothera biennis	Common Evening-primrose			S5	FO	
Origanum vulgare	Wild Marjoram			SE5	FO	
Oxalis stricta	Upright Yellow Wood Sorrel			S5	FO	
Panicum acuminatum var. acuminatum	Acuminate Panic Grass			S5	GR	
Panicum virgatum	Switch Grass			S4	GR	
Parthenocissus inserta	Thicket Creeper			S5	VW	
Penstemon digitalis	Foxglove Beardtongue			S4S5	FO	
Phalaris arundinacea	Reed Canary Grass			S5	GR	
Phleum pratense	Timothy			SE5	GR	
Phragmites australis	Common Reed			S5	GR	Y
Phryma leptostachya	Lopseed			S4S5	FO	
Physalis heterophylla	Clammy Ground-cherry			S4	FO	
Plantago lanceolata	English Plantain			SE5	FO	
Plantago rugelii	Black-seed Plantain			S5	FO	
Poa pratensis ssp. pratensis	Kentucky Bluegrass			S5	GR	Y
Populus alba	White Poplar			SE5	TR	Y
Populus deltoides ssp. deltoides	Eastern Cottonwood			SU	TR	
Potentilla norvegica ssp. monspeliensis	Norwegian Cinquefoil			S5	FO	
Potentilla simplex	Old-field Cinquefoil			S5	FO	
Prenanthes alba	White Rattlesnake-root			S5	FO	
Prunella vulgaris ssp. lanceolata	Self-heal			S5	FO	
Pteridium aquilinum var. latiusculum	Bracken Fern			S5	FE	
Pycnanthemum virginianum	Virginia Mountain-mint			S4	FO	

Floral Inventory: MEMM4 (ELC Community 13a) and MAMM6 (13b)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Quercus velutina	Black Oak			S4	TR	
Rhus radicans ssp. rydbergii	Western Poison Ivy			S5	SH	
Ribes americanum	Wild Black Currant			S5	SH	
Robinia pseudo-acacia	Black Locust			SE5	TR	Y
Rosa multiflora	Rambler Rose			SE4	SH	Y
Rubus allegheniensis	Allegheny Blackberry			S5	SH	
Rubus flagellaris	Northern Dewberry			S4	SH	
Rubus occidentalis	Black Raspberry			S5	SH	
Salix discolor	Pussy Willow			S5	SH	
Salix eriocephala	Heart-leaved Willow			S5	SH	
Salix exigua	Sandbar Willow			S5	SH	
Salix nigra	Black Willow			S4?	TR	
Sanicula marilandica	Black Snakeroot			S5	FO	
Saponaria officinalis	Bouncing-bet			SE5	FO	
Setaria pumila	Yellow Foxtail			SE5	GR	
Setaria viridis	Green Bristle Grass			SE5	GR	
Silene vulgaris	Maiden's Tears			SE5	FO	
Solanum carolinense	Carolina Horse-nettle			SE3	FO	
Solidago altissima var. altissima	Tall Goldenrod			S5	FO	
Solidago gigantea	Smooth Goldenrod			S5	FO	
Solidago juncea	Early Goldenrod			S5	FO	
Solidago nemoralis ssp. nemoralis	Field Goldenrod			S5	FO	
Solidago rugosa ssp. rugosa	Rough Goldenrod			S5	FO	
Sonchus arvensis ssp. arvensis	Field Sowthistle			SE5	FO	
Sorghastrum nutans	Yellow Indian-grass			S4	GR	
Strophostyles helvula	Wild Bean			S4	FO	
Trifolium pratense	Red Clover			SE5	FO	
Ulmus americana	American Elm			S5	TR	
Ulmus pumila	Siberian Elm			SE3	TR	Y
Verbascum blattaria	White Moth Mullein			SE5	FO	
Verbascum thapsus	Common Mullein			SE5	FO	
Verbena hastata	Blue Vervain			S5	FO	
Verbena urticifolia	White Vervain			S5	FO	
Vernonia missurica	Ironweed			S3?	FO	
Veronicastrum virginicum	Culver's-root			S2	FO	
Vitis riparia	Riverbank Grape			S5	VW	
Xanthium strumarium	Rough Cockle-bur			S5	FO	

Floral Inventory: SAS1-4 (ELC Community 14)						
Scientific Name	**Common Name**	**COSEWIC**	**MNR (SARO)**	**SRank**	**Type**	**Invasive**
Ceratophyllum demersum	Common Hornwort			S5	FO	
Elodea canadensis	Broad Waterweed			S5	FO	
Myriophyllum spicatum	Eurasian Water-milfoil			SE5	FO	Y
Potamogeton richardsonii	Richardson's Pondweed			S5	FO	
Vallisneria americana	Eel-grass			S5	FO	

APPENDIX F: PHYSIOGNOMY FOR EACH INDIVIDUAL ELC VEGETATION COMMUNITY POLYGON

Physiognomy of ELC Communities in Black Oak Heritage Park, 2018						
Deciduous Savannah (SVD)						
Plant Form	**Native**		**Introduced**		**All Species**	
	Number	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**
Trees	14	17.50	3	3.75	17	21.25
Shrubs	9	11.25	2	2.50	11	13.75
Woody Vines	3	3.75	1	1.25	4	5.00
Total Woody	**26**	**32.50**	**6**	**7.50**	**32**	**40.00**
Herb. Vines	3	3.75	0	0.00	3	3.75
Forbs	33	41.25	3	3.75	36	45.00
Ferns	2	2.50	0	0.00	2	2.50
Total Herbaceous Non-Graminoids	**38**	**47.50**	**3**	**3.75**	**41**	**51.25**
Grasses	2	2.50	2	2.50	4	5.00
Rushes	0	0.00	0	0.00	0	0.00
Sedges	3	3.75	0	0.00	3	3.75
Total Graminoids	**5**	**6.25**	**2**	**2.50**	**7**	**8.75**
Total Non-Woody	**43**	**53.75**	**5**	**6.25**	**48**	**60.00**
Total All Forms	**69**	**86.25**	**11**	**13.75**	**80**	**100.00**

Fresh-Moist Black Walnut Lowland Deciduous Forest Type (FODM7-4)						
Plant Form	**Native**		**Introduced**		**All Species**	
	Number	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**
Trees	4	4.55	3	3.41	7	7.95
Shrubs	6	6.82	3	3.41	9	10.23
Woody Vines	2	2.27	0	0.00	2	2.27
Total Woody	**12**	**13.64**	**6**	**6.82**	**18**	**20.45**
Herb. Vines	0	0.00	0	0.00	0	0.00
Forbs	25	28.41	26	29.55	51	57.95
Ferns	0	0.00	0	0.00	0	0.00
Total Herbaceous Non-Graminoids	**25**	**28.41**	**26**	**29.55**	**51**	**57.95**
Grasses	4	4.55	6	6.82	10	11.36
Rushes	1	1.14	0	0.00	1	1.14
Sedges	8	9.09	0	0.00	8	9.09
Total Graminoids	**13**	**14.77**	**6**	**6.82**	**19**	**21.59**
Total Non-Woody	**38**	**43.18**	**32**	**36.36**	**70**	**79.55**
Total All Forms	**50**	**56.82**	**38**	**43.18**	**88**	**100.00**

Physiognomy of ELC Communities in Black Oak Heritage Park, 2018						
Fresh-Moist Mixed Tallgrass Prairie Ecosite (MEMM2)						
Plant Form	**Native**		**Introduced**		**All Species**	
	Number	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**
Trees	7	5.65	3	2.42	10	8.06
Shrubs	6	4.84	6	4.84	12	9.68
Woody Vines	1	0.81	0	0.00	1	0.81
Total Woody	**14**	**11.29**	**9**	**7.26**	**23**	**18.55**
Herb. Vines	1	0.81	1	0.81	2	1.61
Forbs	45	36.29	29	23.39	74	59.68
Ferns	1	0.81	0	0.00	1	0.81
Total Herbaceous Non-Graminoids	**47**	**37.90**	**30**	**24.19**	**77**	**62.10**
Grasses	10	8.06	8	6.45	18	14.52
Rushes	1	0.81	0	0.00	1	0.81
Sedges	4	3.23	0	0.00	5	4.03
Total Graminoids	**15**	**12.10**	**8**	**6.45**	**24**	**19.35**
Total Non-Woody	**62**	**50.00**	**38**	**30.65**	**101**	**81.45**
Total All Forms	**76**	**61.29**	**47**	**37.90**	**124**	**100.00**

Dry – Fresh Oak – Hickory Deciduous Forest Type (FODM2-2)						
Plant Form	**Native**		**Introduced**		**All Species**	
	Number	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**
Trees	10	7.09	2	1.42	12	8.51
Shrubs	16	11.35	3	2.13	19	13.48
Woody Vines	5	3.55	0	0.00	5	3.55
Total Woody	**31**	**21.99**	**5**	**3.55**	**36**	**25.53**
Herb. Vines	6	4.26	0	0.00	6	4.26
Forbs	66	46.81	11	7.80	77	54.61
Ferns	4	2.84	0	0.00	4	2.84
Total Herbaceous Non-Graminoids	**76**	**53.90**	**11**	**7.80**	**87**	**61.70**
Grasses	5	3.55	1	0.71	7	4.96
Rushes	2	1.42	0	0.00	2	1.42
Sedges	9	6.38	0	0.00	9	6.38
Total Graminoids	**16**	**11.35**	**1**	**0.71**	**18**	**12.77**
Total Non-Woody	**92**	**65.25**	**12**	**8.51**	**105**	**74.47**
Total All Forms	**123**	**87.23**	**17**	**12.06**	**141**	**100.00**

Physiognomy of ELC Communities in Black Oak Heritage Park, 2018						
Fresh – Moist Black Walnut Lowland Deciduous Forest Type (FODM7-4)						
Plant Form	**Native**		**Introduced**		**All Species**	
	Number	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**
Trees	19	13.29	5	3.50	24	16.78
Shrubs	18	12.59	4	2.80	22	15.38
Woody Vines	7	4.90	1	0.70	8	5.59
Total Woody	**44**	**30.77**	**10**	**6.99**	**54**	**37.76**
Herb. Vines	5	3.50	0	0.00	5	3.50
Forbs	57	39.86	10	6.99	67	46.85
Ferns	4	2.80	0	0.00	4	2.80
Total Herbaceous Non-Graminoids	**66**	**46.15**	**10**	**6.99**	**76**	**53.15**
Grasses	5	3.50	5	3.50	10	6.99
Rushes	0	0.00	0	0.00	0	0.00
Sedges	3	2.10	0	0.00	3	2.10
Total Graminoids	**8**	**5.59**	**5**	**3.50**	**13**	**9.09**
Total Non-Woody	**74**	**51.75**	**15**	**10.49**	**89**	**62.24**
Total All Forms	**118**	**82.52**	**25**	**17.48**	**143**	**100.00**

Fresh - Moist Oak Carolinian Deciduous Forest Type (FODM10-2)						
Plant Form	**Native**		**Introduced**		**All Species**	
	Number	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**
Trees	18	14.63	2	1.63	20	16.26
Shrubs	18	14.63	5	4.07	23	18.70
Woody Vines	5	4.07	1	0.81	6	4.88
Total Woody	**41**	**33.33**	**8**	**6.50**	**49**	**39.84**
Herb. Vines	3	2.44	0	0.00	3	2.44
Forbs	47	38.21	14	11.38	61	49.59
Ferns	2	1.63	0	0.00	2	1.63
Total Herbaceous Non-Graminoids	**52**	**42.28**	**14**	**11.38**	**66**	**53.66**
Grasses	3	2.44	3	2.44	6	4.88
Rushes	1	0.81	0	0.00	1	0.81
Sedges	1	0.81	0	0.00	1	0.81
Total Graminoids	**5**	**4.07**	**3**	**2.44**	**8**	**6.50**
Total Non-Woody	**57**	**46.34**	**17**	**13.82**	**74**	**60.16**
Total All Forms	**98**	**79.67**	**25**	**20.33**	**123**	**100.00**

Physiognomy of ELC Communities in Black Oak Heritage Park, 2018						
Fresh - Moist Forb meadow ecosite (MEFM4)						
Plant Form	**Native**		**Introduced**		**All Species**	
	Number	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**
Trees	13	7.51	5	2.89	18	10.40
Shrubs	10	5.78	7	4.05	17	9.83
Woody Vines	3	1.73	1	0.58	4	2.31
Total Woody	**26**	**15.03**	**13**	**7.51**	**39**	**22.54**
Herb. Vines	0	0.00	1	0.58	1	0.58
Forbs	62	35.84	44	25.43	106	61.27
Ferns	1	0.58	0	0.00	1	0.58
Total Herbaceous Non-Graminoids	**63**	**36.42**	**45**	**26.01**	**108**	**62.43**
Grasses	7	4.05	11	6.36	18	10.40
Rushes	2	1.16	0	0.00	2	1.16
Sedges	6	3.47	0	0.00	6	3.47
Total Graminoids	**15**	**8.67**	**11**	**6.36**	**26**	**15.03**
Total Non-Woody	**78**	**45.09**	**56**	**32.37**	**134**	**77.46**
Total All Forms	**104**	**60.12**	**69**	**39.88**	**173**	**100.00**

Fresh – Moist Black Walnut Lowland Deciduous Forest Type (FODM7-4) adjacent to Cottonwood Deciduous Swamp Type (SWDM4-6)						
Plant Form	**Native**		**Introduced**		**All Species**	
	Number	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**
Trees	9	7.76	4	3.45	13	11.21
Shrubs	11	9.48	5	4.31	16	13.79
Woody Vines	6	5.17	2	1.72	8	6.90
Total Woody	**26**	**22.41**	**11**	**9.48**	**37**	**31.90**
Herb. Vines	2	1.72	0	0.00	2	1.72
Forbs	54	46.55	4	3.45	58	50.00
Ferns	0	0.00	0	0.00	0	0.00
Total Herbaceous Non-Graminoids	**56**	**48.28**	**4**	**3.45**	**60**	**51.72**
Grasses	9	7.76	5	4.31	14	12.07
Rushes	2	1.72	0	0.00	2	1.72
Sedges	3	2.59	0	0.00	3	2.59
Total Graminoids	**14**	**12.07**	**5**	**4.31**	**19**	**16.38**
Total Non-Woody	**70**	**60.34**	**9**	**7.76**	**79**	**68.10**
Total All Forms	**96**	**82.76**	**20**	**17.24**	**116**	**100.00**

Physiognomy of ELC Communities in Black Oak Heritage Park, 2018						
Cottonwood Deciduous Swamp Type (SWDM4-6) and Swamp White Oak Mineral Deciduous Swamp Type (SWDM1-1)						
Plant Form	**Native**		**Introduced**		**All Species**	
	Number	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**
Trees	23	13.86	3	1.81	26	15.66
Shrubs	20	12.05	6	3.61	26	15.66
Woody Vines	6	3.61	3	1.81	9	5.42
Total Woody	**49**	**29.52**	**12**	**7.23**	**61**	**36.75**
Herb. Vines	4	2.41	0	0.00	4	2.41
Forbs	63	37.95	18	10.84	81	48.80
Ferns	7	4.22	0	0.00	7	4.22
Total Herbaceous Non-Graminoids	**74**	**44.58**	**18**	**10.84**	**92**	**55.42**
Grasses	4	2.41	4	2.41	8	4.82
Rushes	1	0.60	0	0.00	1	0.60
Sedges	4	2.41	0	0.00	4	2.41
Total Graminoids	**9**	**5.42**	**4**	**2.41**	**13**	**7.83**
Total Non-Woody	**83**	**50.00**	**22**	**13.25**	**105**	**63.25**
Total All Forms	**132**	**79.52**	**34**	**20.48**	**166**	**100.00**

Fresh - Moist Poplar Deciduous Woodland Type (WODM5-1) and Fresh-Moist Tallgrass Deciduous Woodland Type (WODM6)						
Plant Form	**Native**		**Introduced**		**All Species**	
	Number	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**
Trees	12	11.43	2	1.90	14	13.33
Shrubs	13	12.38	4	3.81	17	16.19
Woody Vines	3	2.86	1	0.95	4	3.81
Total Woody	**28**	**26.67**	**7**	**6.67**	**35**	**33.33**
Herb. Vines	2	1.90	0	0.00	2	1.90
Forbs	46	43.81	12	11.43	58	55.24
Ferns	0	0.00	0	0.00	0	0.00
Total Herbaceous Non-Graminoids	**48**	**45.71**	**12**	**11.43**	**60**	**57.14**
Grasses	7	6.67	2	1.90	9	8.57
Rushes	1	0.95	0	0.00	1	0.95
Sedges	0	0.00	0	0.00	0	0.00
Total Graminoids	**8**	**7.62**	**2**	**1.90**	**10**	**9.52**
Total Non-Woody	**56**	**53.33**	**14**	**13.33**	**70**	**66.67**
Total All Forms	**84**	**80.00**	**21**	**20.00**	**105**	**100.00**

Physiognomy of ELC Communities in Black Oak Heritage Park, 2018						
Fresh - Moist Manitoba Maple Lowland Deciduous Forest Type (FODM7-7), Fresh-Moist Manitoba Maple Deciduous Woodland Type (WODM5-3), and Dry-Fresh Mixed Meadow Ecosite (MEMM3)						
Plant Form	**Native**		**Introduced**		**All Species**	
	Number	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**
Trees	11	7.53	2	1.37	13	8.90
Shrubs	12	8.22	9	6.16	21	14.38
Woody Vines	3	2.05	3	2.05	6	4.11
Total Woody	**26**	**17.81**	**14**	**9.59**	**40**	**27.40**
Herb. Vines	4	2.74	1	0.68	5	3.42
Forbs	48	32.88	27	18.49	75	51.37
Ferns	3	2.05	0	0.00	3	2.05
Total Herbaceous Non-Graminoids	**55**	**37.67**	**28**	**19.18**	**83**	**56.85**
Grasses	9	6.16	12	8.22	21	14.38
Rushes	0	0.00	0	0.00	0	0.00
Sedges	2	1.37	0	0.00	2	1.37
Total Graminoids	**11**	**7.53**	**12**	**8.22**	**23**	**15.75**
Total Non-Woody	**66**	**45.21**	**40**	**27.40**	**106**	**72.60**
Total All Forms	**92**	**63.01**	**54**	**36.99**	**146**	**100.00**

Fresh - Moist Deciduous Woodland Ecosite (WODM5) (12a and 12b) and Fresh-Moist Cottonwood Deciduous Forest Type (FODM8-3)						
Plant Form	**Native**		**Introduced**		**All Species**	
	Number	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**
Trees	22	13.33	3	1.82	25	15.15
Shrubs	15	9.09	8	4.85	23	13.94
Woody Vines	3	1.82	1	0.61	4	2.42
Total Woody	**40**	**24.24**	**12**	**7.27**	**52**	**31.52**
Herb. Vines	3	1.82	0	0.00	3	1.82
Forbs	69	41.82	20	12.12	89	53.94
Ferns	2	1.21	0	0.00	2	1.21
Total Herbaceous Non-Graminoids	**74**	**44.85**	**20**	**12.12**	**94**	**56.97**
Grasses	8	4.85	7	4.24	15	9.09
Rushes	0	0.00	0	0.00	0	0.00
Sedges	4	2.42	0	0.00	4	2.42
Total Graminoids	**12**	**7.27**	**7**	**4.24**	**19**	**11.52**
Total Non-Woody	**86**	**52.12**	**27**	**16.36**	**113**	**68.48**
Total All Forms	**126**	**76.36**	**39**	**23.64**	**165**	**100.00**

Physiognomy of ELC Communities in Black Oak Heritage Park, 2018						
Fresh - Moist Mixed Meadow Ecosite (MEMM4) and Tallgrass Meadow Marsh Ecosite (MAMM6)						
Plant Form	**Native**		**Introduced**		**All Species**	
	Number	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**
Trees	10	6.54	4	2.61	14	9.15
Shrubs	12	7.84	2	1.31	14	9.15
Woody Vines	3	1.96	0	0.00	3	1.96
Total Woody	**25**	**16.34**	**6**	**3.92**	**31**	**20.26**
Herb. Vines	3	1.96	0	0.00	3	1.96
Forbs	70	45.75	25	16.34	95	62.09
Ferns	2	1.31	0	0.00	2	1.31
Total Herbaceous Non-Graminoids	**75**	**49.02**	**25**	**16.34**	**100**	**65.36**
Grasses	10	6.54	6	3.92	16	10.46
Rushes	2	1.31	0	0.00	2	1.31
Sedges	4	2.61	0	0.00	4	2.61
Total Graminoids	**16**	**10.46**	**6**	**3.92**	**22**	**14.38**
Total Non-Woody	**91**	**59.48**	**31**	**20.26**	**122**	**79.74**
Total All Forms	**116**	**75.82**	**37**	**24.18**	**153**	**100.00**

Water Milfoil Submerged Shallow Aquatic Type (SAS1-4)						
Plant Form	**Native**		**Introduced**		**All Species**	
	Number	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**
Trees	0	0.00	0	0.00	0	0.00
Shrubs	0	0.00	0	0.00	0	0.00
Woody Vines	0	0.00	0	0.00	0	0.00
Total Woody	**0**	**0.00**	**0**	**0.00**	**0**	**0.00**
Herb. Vines	0	0.00	0	0.00	0	0.00
Forbs	4	80.00	1	20.00	5	100.00
Ferns	0	0.00	0	0.00	0	0.00
Total Herbaceous Non-Graminoids	**4**	**80.00**	**1**	**20.00**	**5**	**100.00**
Grasses	0	0.00	0	0.00	0	0.00
Rushes	0	0.00	0	0.00	0	0.00
Sedges	0	0.00	0	0.00	0	0.00
Total Graminoids	**0**	**0.00**	**0**	**0.00**	**0**	**0.00**
Total Non-Woody	**4**	**80.00**	**1**	**20.00**	**5**	**100.00**
Total All Forms	**4**	**80.00**	**1**	**20.00**	**5**	**100.00**

APPENDIX G: PHOTOS OF CURRENT ECOLOGICAL STRESSORS

Current Ecological Stressors

The current key stressors to the Black Oak Heritage Park include:

- **Fire Suppression**
- **Woody plant succession and Invasive species**
- **Changes in hydrology – Dug Pond and Drains**
- **Dumping of Brush, Trees and Garbage**
- **Tracks and Trails**
- **Created Drains**
- **Recreational Use – Hiking and Dog Park**
- **Noise**
- **Deer Browse**





APPENDIX H:
RESTORATION TECHNIQUES

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1.0 RESTORATION TECHNIQUES

Management techniques required to improve the prairie habitat will include, but are not limited to:

1. **Prescribed Burns:** A burn plan should be created and carried out by experienced burn practitioners. Burn complexity and fuel load will be taken into consideration along with minimizing any risks and associated hazards of burning on public land.

2. **Woody Plant Control:** Removal of unwanted woody vegetation will allow grassland vegetation to establish. Woody plant removal should focus on clearing invasive shrubs and trees, as well as dominant Black Walnut trees.

3. **Herbicide Application:** Application of herbicide should be undertaken to control undesirable herbaceous plant species and applied after tree and shrub removal to reduce suckering of woody plants that out compete prairie plants in open areas.

4. **Overseeding and Reseeding:** Prairie seed should be collected from high quality prairies in the Ojibway Prairie complex for overseeding after a prescribed burn. If a large quantity of seed is required or the objective is to increase the plant diversity. Seed mixes should be custom ordered from a local reputable native plant nursery. Seed should be broadcast immediately after a prescribed burn into the partly charred plant material (charcoal)/soot.

1.1 PRESCRIBED BURNS

1.1.1 Why Tallgrass Habitat Requires Fire

Fire can be a very useful tool for management and improvement of Tallgrass habitat within Black Oak Heritage Park. High Priority ELC communities contain abundant oak trees, prairie forbs and grasses that are dependent on fire to thrive and reproduce. Moderate priority ELC communities contain rare to occasional Tallgrass Prairie plant species. **Figure 16** (**Appendix A**) presents the fire dependent vegetation communities that are high and moderate burn priorities.

Frequent prescribed burns are needed as soon as possible. The historical oak savannah and oak woodland has been replaced by:

1. Dry-Fresh Oak-Hickory Deciduous Forest (FODM2-2);
2. Fresh-Moist Black Walnut Lowland Deciduous Forest (FODM7-4);
3. Fresh-Moist Oak-Maple Deciduous Forest (FODM10-2); and
4. Swamp White Oak-Mineral Deciduous Swamp (SWDM1-1).

All of these vegetation communities have closed canopies that are shading out the tallgrass prairie plant species that require open sun or semi-shade and frequent prescribed burns to thrive and prosper. Many of the historical Species at Risk and Provincially Significant plant species identified in **Section 4.3** may have propagules within the Black Oak seedbank. To promote the return of these species they will require open

habitat and regular burns. Refer to **Table 1** (**Appendix B**) for the extensive list of rare plant species that historically occurred within Black Oak Heritage Park.

1.1.2 Fire Behaviour

The goal of a burn is to warm the soil to remove surface leaf litter, release nutrients, reduce nitrogen content, and provide conditions that decrease the vitality of most invasive/exotic plants. These conditions will encourage native prairie grasses and forbs to grow. Tallgrass plant species have very deep root systems, while non-prairie herbaceous plants tend to have shallow root systems. As such, tallgrass plant species are not harmed by a surface fire, while other plants are. The controlled burn will enhance tallgrass plant seed production and improve the health of the prairie habitat.

Based upon past experience burning for habitat management, Prescribed Burns will not usually burn all of the land intended to be burned. Burns are often patchy and wet areas may not burn well. After the burn is complete, the site should be examined the following growing season to evaluate how open the burn blocks have become and to quantify how much tallgrass plant species biomass growth has been stimulated by the Burn. This assessment will determine when the next burn will be required.

1.1.2.1 Benefits of Prescribed Burns

Fire is a very useful tool for management and improvement of open habitat preferred by snake, bird and rodent species. Fire helps open land by removing trees and shrubs, while encouraging new grass growth used for nesting and hiding. It encourages the growth of prairie plant species that many wildlife species forage upon.

1.1.3 Burn Plan Implementation

Sage Earth recommends that prescribed burns be used to reduce the encroachment of trees, shrubs, and invasive plants to stimulate the germination and growth of native Tallgrass plant species. After burning, any remaining invasive trees and shrubs within the burn blocks should be brush cut and painted with the herbicide to prevent re-establishment.

To initiate a Prescribed Burn, the process begins with the creation of a Prescribed Burn Plan by a qualified Burn Boss and the required approval by the City of Windsor. The Burn Plan should identify priority areas for the burn. Further to the burn plan, The City of Windsor must undertake all required communications with emergency services and with the public in addition to obtaining the necessary permits. All required permits will be defined within the Burn Plan.

This report is not a Burn Plan and all prescribed burn recommendations provided within this Management Plan should be taken as draft prescriptions. It is the responsibility of a qualified Burn Boss to provide the final prescriptions that will be implemented in the prescribed burn. Following the completion of the initial site burn, an assessment should be made to assess the effectiveness of the burn and to confirm next management steps.

1.1.4 Ignition and Suppression

A drip torch will be used to ignite the burn. The burn boss will determine the type of ignition pattern based upon the burning objectives, pre-and post-burn weather, fuel characteristics, manpower, smoke management, available equipment for suppression and adjacent fuels to the burn blocks. Portable water backpacks, pumps and firebreaks will be used for suppression.

1.1.5 Fuel

There are three different types of fuel that can be burned in the tallgrass prairie at Black Oak Heritage Park:

1. Grasses: Burn very well in the spring or fall.
2. Forbs: Burn moderately well in the late fall to winter.
3. Wet clumps of flat leaves on the ground: Do not burn well in the fall unless they are oak leaves.

1.1.6 Seasonality

1.1.6.1 Fall to Winter Burns: Advantages & Disadvantages

Fall to winter burns are ideal for removing understory woody plants (trees and shrubs < 10 cm diameter at breast height). Additionally, forbs are available in the winter as fuel. By spring, forbs have decomposed and the only fuel available is grass thatch. The ground tends to be drier in the fall to winter which enables fire to burn in wetter areas. Implementing burns in the fall and winter ensure that snakes, turtles and many mammals present in the Park are dormant and migratory birds have departed for overwintering habitats. However, some species of mammals and birds that overwinter in the Park may be present during fall to winter burns.

1.1.6.2 Spring Burns: Advantages and Disadvantages

Seasonally, early spring (mid-March to late April) is the optimal time to conduct Prescribed Burns for prairie plant enhancement and maintenance if there is enough fuel present (Tallgrass Ontario 2010). Spring burns are good for removing cool season grasses that compete against desirable native prairie plants. Prior to the active fauna season few wildlife species will be impacted by the prescribed burn.

If a spring burn occurs following April, there is a greater risk to Species at Risk birds and herptiles. Spring burns should be arranged to occur in March to April well before migrating bird species have arrived from overwintering habitat and before the active snake season. Disadvantages to early spring burns include a lack of forbs available for fuel for a successful burn and potential flooding/saturated ground following the spring snow melt.

1.1.7 Avoiding Wildlife

A fauna search and rescue should occur before every prescribed burn. Five to ten people should walk in a line spread out evenly from one end of the Burn Block to the other making a lot of noise to scare away wildlife species. The level of effort searching and scaring wildlife away is dependent upon the season the burn is occurring.

1.1.8 Burn Breaks

Burn breaks are areas that contain non-flammable materials or substances that are poor conductors of heat, such as water, rock, mineral soils, green grasses, roads, trails and rivers that surround the burn blocks. Burn breaks can be natural or man-made and often measure two to three meters in width. Increases and decreases in the width of the burn breaks can be made due to fuels, values, sensitive areas, anticipated fire intensity, fire behavior, anticipated wind direction and fire spread. Burn breaks should start and end at an anchor point (a non-combustible or a poor conducting site) or another burn break. Existing natural burn breaks (trails, roads, wetlands, rail lines, drains, ponds, and watercourses) are presented in **Figure 16** (**Appendix A**). These features can be used during the Prescribed Burn to reduce costs as the cost per hectare decreases when there is less burn break creation.

1.1.8.1 Ways to Create a Burn Break

A burn break can be created using the following methods:

1. Use a brush hog and tractor to remove small woody vegetation, forbs and grasses;
2. Use a brush cutter and lawn mower to create short green grass burn breaks;
3. Use a bobcat with a street sweeper on an angle to create mineral burn breaks; or
4. Rake ≥ 2-3m of burnable material off of the burn break away from the burn blocks.

1.1.8.2 Trails

Proposed burn breaks should be mowed in August and in September to create short green grass burn breaks. After a successful prescribed burn, Sage Earth does not recommend any subsequent mowing of burn breaks prior to the next burn as it is likely that any mown burn break will quickly become a trail for the public. This will result in an increased spread of invasive species and cause damage to rare prairie plant and animal species found in the Park.

1.1.9 Values

Cultural Values such as adjacent buildings, landscaping, hydro and telephone lines (etc.), should be protected through watering and/or through the use of a burn break.

1.1.10 Burn Block Prescriptions

There is a need to create burn breaks around the burn blocks. Ideally, the burn breaks should be as straight as possible. A burn consultant needs to be contacted to verify what prescriptions they would advise to protect the values.

1.2 INVASIVE SPECIES MANAGEMENT

The 2018 vegetation survey found a total of 127 introduced or non-native species in Black Oak Heritage Park. **Table 13** (**Appendix B**) lists the specific species that pose a local threat to native flora and habitat quality. The recommendations for invasive species management provided in this section should be implemented using Best Management Practices (BMPs).

1.2.1 Management Recommendations for Problem Species

One native and eight particularly damaging invasive species within Black Oak Heritage Park were selected based our professional experience for invasive species management. These nine species pose an immediate threat to the quality of habitat and perseverance of native species and valued Species at Risk in Black Oak Heritage Park. The locations and abundance of these species in Black Oak Heritage Park are shown in **Figures 17** through **25** (**Appendix A**). Management recommendations for these species are discussed below.

1.2.1.1 Black Walnut

Black Walnut (***Juglans nigra***) is dominant and abundant in many vegetation communities throughout Black Oak Heritage Park. Although Black Walnut is a native tree, its prevalence is excluding many native plant species that cannot grow in close association to Black Walnut trees. It is capable of altering soil composition over time by creating tannins that limit the growth of nearby flora. Sage Earth recommends thinning stands of Black Walnut in key areas to allow space for the growth of oak and hickory species (**Figure 17 in Appendix A**). Thinning should be prescribed by a local City of Windsor Forester.

1.2.1.2 Tree of Heaven

Tree of Heaven (***Ailanthus altissima***), is abundant within the Fresh-Moist Forb Meadow (MEFM4) vegetation community located in the northwest corner of Black Oak Heritage Park. It is classified as occasional to rare along the northern park boundary and is also encroaching on the south-eastern corner (**Figure 18 in Appendix A**). It poses a threat by limiting the growth of native species by developing thickets and producing a chemical in the soil. The roots of this species are known for causing damage to sewers and structures. This species will regrow from any remaining roots, thus brush cutting followed by a chemical application of herbicide is required. Similarly, the "hack and squirt" method of notching the trunk with an axe then applying a systemic herbicide into the cut is also effective. Removal staff should use appropriate personal protective equipment to prevent reactions from sap (Kaufman and Kaufman 2007).

1.2.1.3 White Mulberry

White Mulberry (***Morus alba***) occurs in every ELC community in Black Oak Heritage Park, and is dominant or abundant in nearly 50% of Black Oak Heritage Park area (**Figure 19 in Appendix A**). White Mulberry chokes out competing species and is considered a threat to the rare Red Mulberry (***Morus rubra)*** in Canada. Some control options include chain-sawing or brush cutting followed by herbicide application (Kaufman and Kaufman 2007). Best management practices will be implemented for future management of White Mulberry within Black Oak Heritage Park.

1.2.1.4 Black Locust

Black Locust (***Robinia pseudo-acacia***) is dominant within the Fresh-Moist Forb Meadow (MEFM4) along the northwestern edge of the property, and is abundant or occasionally spotted in most other communities (**Figure 20 in Appendix A**). While this species serves as a source of food for pollinators, it is a threat to the ecosystem as it outcompetes native species and alters the nitrogen of the soil. Successful management of this species has been achieved through annual cutting of individuals and by applying

herbicide to the stumps. While the species does regrow, the root system becomes increasingly depleted of energy. Alternatively, the hack-and-squirt method may also be used for control. Be aware that the Black Locust will sprout several suckers after any cutting that will require several follow up treatments (Kaufman and Kaufman 2007, Warne 2016).

1.2.1.5 Amur Honeysuckle

Amur Honeysuckle (***Lonicera maackii***) occurs primarily as dominant or abundant in all but one ELC community in Black Oak Heritage Park (**Figure 21 in Appendix A**). This invasive shrub quickly spreads in disturbed forest edges, roadsides, or meadow ecosystems and outcompetes native species. To minimize disturbance for surrounding native species, control can be most effectively achieved by fall brush cutting and application of herbicide to the stumps (Czarapata 2005).

1.2.1.6 Autumn Olive

Autumn Olive (***Elaeagnus umbellata***) is detrimental to the ecosystem by crowding out native species and reducing the diversity of a habitat. This species has the ability to fix nitrogen resulting in soil composition changes over time. While Autumn Olive does produce berries for wildlife, the negative effects outweigh the positive. It is widely distributed in approximately 50% of Black Oak Heritage Park's ELC communities (**Figure 22 in Appendix A**). Because the cut stumps can sprout new shoots, the most efficient method of control is to brush cut and follow up with herbicide on the cut stumps (Kaufman and Kaufman 2007).

1.2.1.7 Japanese Honeysuckle

Japanese Honeysuckle (***Lonicera japonica***) occurs in approximately half of Black Oak Heritage Park area (**Figure 23 in Appendix A**). It is a vine that can suffocate small trees and shrubs, and strangle mature trees over time. Through rapid spreading, this species will outcompete native species and drastically reduce diversity. Like many invasive plants, any remaining root fragments after removal can sprout new shoots. Large vines can be cut and stumps treated with herbicide, while the foliage of smaller vines can be sprayed in late fall and may need further application in the following year (Kaufman and Kaufman 2007).

1.2.1.8 Siberian Elm

Siberian Elm (***Ulmus pumila***) occasionally appears in disturbed communities across Black Oak Heritage Park (**Figure 24 in Appendix A**). It resembles native elm species but is more competitive for sunlight and forms dense stands that outcompete native species. Simple control can be achieved through tree girdling in late spring through mid-summer. After girdling, small shoots will sprout from the trunk base and can be treated with herbicide.

1.2.1.9 Manitoba Maple

Manitoba Maple (***Acer negundo***) dominates the Fresh-Moist Manitoba Maple Lowland Deciduous Forest (FOMD7-7) in the southwestern corner of the park. All individuals need to be cut and chipped in this vegetation community (**Figure 7 in Appendix A**). A Fresh-Moist prairie seed mix should be drilled into the ground to replace the existing monoculture in the FODM7-7 vegetation community.

1.2.1.10 European Reed

European reed (***Phragmites australis ssp. australis***) poses a threat to the wet open and semi-shaded wet habitats within Black Oak Heritage Park. Within the Park it can be found in most ELC communities, in damp soils or near a water source (**Figure 25 in Appendix A**). Control methods for European Reed are dependent on the size of the stand. In Black Oak Heritage Park, small stands can be cut seasonally and applied with herbicide. In large infested areas, multiple control measures will be required for effectiveness. Tops of plants can be sprayed with glyphosate in late summer/early fall and then rolled and burned to remove the dead debris for subsequent herbicide applications. It takes many years to get populations of European Reed reduced in abundance and under control (Czarapata 2005, Kaufman and Kaufman 2007, OMNR 2011).

1.2.1.10.1 European Reed Suppression

Black Walnut appears to be inhibiting the growth of the invasive European Reed (***Phragmites australis ssp. australis***) below or adjacent to the drip line of mature trees. Our hypothesis is that the juglone from their roots has an allelopathic effect on Phragmites, meaning it is stunting or preventing their growth. Thus, thinning of Black Walnut trees to encourage the growth of native plants in the seedbank will have to be weighed against how much it is suppressing the growth of Phragmites in an area. Refer to **Figure 25** (**Appendix A**) to ascertain where Black Walnut and European Reed co-exist within the same vegetation communities.

1.3 WOODY PLANT CONTROL

Black Oak Heritage Park contains a high abundance and diversity of invasive woody plant species. Additionally, fire suppression and lack of prescribed burns has resulted in canopy closure and a reduced presence of rare tallgrass prairie plant species. In most cases, woody plant control should consist of a hand-held brush cutter, hand pulling, or chainsaw use. In areas where a large number of trees require removal, a harvester forwarder combination or a skid steer with a forestry cutter attachment should be utilized. This should be followed by herbicide application to cut stumps, basal bark and cuts within trunks of invasive tree and shrubs. These woody invasive species dominate tallgrass woodland, savannah and prairie habitats within Black Oak Heritage Park (**Figures 16 - 22 in Appendix A**). When possible, brush cutting and herbicide treatments should be followed by prescribed burns to destroy any remaining new growth, especially in prairie and meadow communities.

1.3.1 Brush Cutting

Brush cutting should be undertaken as a means of woody stem control during times when prescribed burns are not feasible. A brush cutter is a string trimmer with a heavy-duty circular saw blade on the end that is used to cut through thick branches and saplings. As a safety precaution, all operators must have a metal shield attachment and a barrier bar or U-handle kit to swipe the saw at the brush. All operators must wear steel-toe leather work boots, chainsaw chaps, work gloves and eye protection. Brush cutters should be used to clear the area of unwanted shrubs and tree seedlings. This control method would be

ideal for the management of Amur Honeysuckle, Autumn Olive and Japanese Honeysuckle (**Figures 21 - 23 in Appendix A**).

1.3.1.1 Creation of Brush Piles for Snake Habitat

The remains of trees and shrubs that are removed from Black Oak Heritage park during invasive species management can be used to create brush piles for snake thermoregulation and cover habitat. Place cut trees and shrubs from removal of woody and invasive vegetation in a pile with larger logs at the base of the pile. Brush piles should be created in open meadow or open prairie habitat along edges. New bush piles can be created or old brush piles can be enhanced every time invasive species and woody vegetation maintenance is required.

1.3.2 Hand Pulling

Manual removal of young tree and shrub seedlings is another method to control woody species. Plants should be pulled as soon as they are large enough to grasp, but before they produce seeds. Seedlings are best pulled after a rain when the soil is loose. The entire root must be removed since broken fragments may re-sprout. Each stalk should be pulled at ground level.

1.3.3 Chainsaw, Axe and Saw

1.3.3.1 Cutting

Trees should be cut at ground level with power or manual saws. Cutting is most effective when trees have begun to flower to prevent seed production. Because many invasive trees and shrubs spread by suckering, re-sprouts are common after cutting. As such, cutting is an initial control measure, and success may require either herbicide application or repeated cutting to control re-sprouts. This technique would work well to remove Black Walnut, Tree of Heaven, White Mulberry, Black Locust and Siberian Elm (**Figures 17 - 20** and **Figure 24 in Appendix A**).

1.3.3.2 Cut Stump Method

This control method should be considered when treating large individual trees or where the presence of desirable species precludes foliar application. Stems should be horizontally cut at or near ground level and herbicide should be immediately applied to the cut stump, ensuring that the outer 20 percent of the stump is covered.

1.3.3.3 Hack and Squirt Method

Cuts should be made at 6.5 cm (3 in) intervals around the trunk of the tree between 15 and 45 cm (6-18 in) above the ground, using a hand axe. Each cut should be placed well into or below the cambium layer of the tree. The cut should be immediately treated with herbicide solution.

1.3.4 Forestry Equipment

Forestry equipment should only be utilized in the winter time when the ground is frozen and where there are a number of large trees that require removal.

1.3.4.1 Small Harvester Forwarder Combination

A harvester is a substantial forestry vehicle employed in cut-to-length logging operations for cutting down, delimbing and bucking trees. A forwarder carries big felled logs clear of the ground from the stump to where ever they need to be placed. This technique would work well to remove the large dominant and abundant stands of Black Walnut, White Mulberry and Black Locust (**Figures 17**, **19** and **20 in Appendix A**).

1.3.4.2 Skid Steer with Forestry Cutter Attachment

Smaller trees and all shrubs can be cut using a skid steer with a forestry cutter attachment. The forestry cutter attachment turns trees and shrubs into mulch. This solution would be ideal for the dominant and abundant White Mulberry and Amur Honeysuckle (**Figures 19** and **21 in Appendix A**).

1.4 HERBICIDE APPLICATION

1.4.1 Woody Plant Control

For complete removal of invasive species, herbicide application following woody plant removal will be most effective at restoring the natural ecosystems in the least amount of time. Herbicide will be applied to reduce suckering of woody plants. Any application of herbicides should follow best management practices.

1.4.2 Herbaceous Control

Herbicide application will occur during the growing season on all invasive herbaceous plant species.

1.4.3 Letter of Opinion for use of Controlled Herbicides

To use controlled herbicides, an application for a "Letter of Opinion for the use of Controlled Pesticides" must be sent to the Ministry of Natural Resources and Forestry.

1.5 OVERSEEDING OR RESEEDING

There are a number of potential options for overseeding and reseeding of the open meadow, prairie and marsh habitats in Black Oak Heritage Park. The main objective of overseeding and reseeding is to steer the trajectory of Black Oak Heritage Park towards a prairie typology. Financial and time considerations will determine which course of action the City of Windsor will take in managing Black Oak Heritage Park.

Prairie seed mix establishment can be a tricky process. Most sites establish at a predictable speed or timeframe with certain plant species germinating in the first two years followed by other plant species that germinate and establish during the third to fifth growing seasons. If the site preparation is inadequate this can delay restoration goals. In some weedy sites the drilled prairie seed mix can take a longer period of time to emerge successfully, but this is unusual.

1.5.1 Active Restoration

1.5.1.1 Seed Collection or Purchase

To overseed or reseed the open areas within Black Oak Heritage Park, prairie seed needs to be collected or purchased. Seed collection should be from managed prairie and savannah habitats within the Ojibway Prairie complex. If a large quantity of seed is required it should be obtained from the Friends of Ojibway Prairie.

1.5.1.2 Overseeding

Once sufficient seed is collected or purchased a spring or fall burn should occur. The prairie seed should be broadcast and rolled in open habitats where there is limited prairie plant diversity. The objective is to inoculate the vegetation communities with additional plant species to increase the prairie percent cover and diversity. Overseeding would be helpful in the western MEFM4, MEMM2 and MEMM4 vegetation communities (**Figure 7 in Appendix A**).

1.5.1.3 Drill Seeding

Drill seeding will be useful in open habitats dominated by exotic invasive plant species, such as the SVD, northern MEFM4 and southwestern MEMM3 vegetation communities. This restoration technique involves herbicide application to invasive plant populations, followed by mowing and drill seeding with a prairie seed mix and nurse crop.

1.5.1.3.1 Grasslands in Northern Section of the Park

Drill seeding should focus on the northern grasslands where the land was historically used for agriculture which affected the species composition in the years to follow (**Figure 5 in Appendix A**). The 2018 Sage Earth plant survey found several species derived from hay pasture seed mixes as well as weeds associated with agriculture. Drill seeding of a diverse prairie seed mix is an important management prescription to increase the diversity of native prairie grasses and forbs in this disturbed area of the park.

1.5.1.4 Nurse Crop

A nurse crop is a crop planted in addition to a seed mix. The nurse crop seed will be the first plant to emerge and acts to stabilize the exposed soil and reduce erosion potential by limiting the area of disturbance. Over time, the prairie seed mix will emerge permanently stabilizing the site. Suggested nurse crop species would be Canada Wild Rye (***Elymus canadensis***) or Virginia Wild Rye (***Elymus virginiana***) in the spring/fall and White Proso Millet (***Panicum miliaceum***) in the warm summer months if necessary**.**

APPENDIX I: MANAGEMENT AND RESTORATION OBJECTIVES

A potential implementation schedule is provided below (**Table 14**).

TABLE 14: MANAGEMENT AND RESTORATION OBJECTIVES

Tasks	Description
1	Hire a qualified Burn Boss and attain approval by the City of Windsor to create a Prescribed Burn Plan.
2	Implement burn break creation and a strategy to avoid/rescue of wildlife (contact Hydro company, chain sawing, brush cutting, herbicide application, mowing, disking and tilling).
3	Implement prescribed burns (fall/winter or spring) in closed canopy vegetation communities that are shading out tallgrass prairie plant species.
4	Monitor prescribed burn effectiveness in its ability to open up the canopy.
5	Manage woody invasive species through removal techniques. This can be completed using a brush cutter, chainsaw, axe, saw or hand pulling.
6	Create brush piles for snake habitat from removed woody debris.
7	Application for a Letter of Opinion for the use of Controlled Pesticides
8	Implementation of herbicide following the removal of woody invasive species.
9	Collect or purchase seeds comprising of prairie and/or savannah species for the purpose of overseeding or reseeding.
10	Broadcast and roll seed in open habitat communities where there is limited prairie plant diversity.
11	Consider drill seeding in open habitats that are dominated by exotic invasive plants. This procedure involves the herbicide application on invasive species populations, followed by mowing and drill seeding with prairie seed mix and nurse crop.
12	Plant nurse crop in addition to seed mix for stabilization of the exposed soil and to reduce erosion potential by limiting the area of disturbance.

TABLE 14: MANAGEMENT AND RESTORATION OBJECTIVES

Tasks	Description
13	Complete adaptive management based upon monitoring if required.
14	Consult with the Ministry of the Environment, Conservation and Parks (MECP) to determine if an Overall Benefit Permit through the ESA is required for restoration activities in the habitat of Threatened or Endangered species.